



## THE 2030 AGENDA: TRANSFORM CATALONIA, IMPROVE THE WORLD



### THE CHALLENGES FOR MEETING SUSTAINABLE DEVELOPMENT GOALS IN CATALONIA

Barcelona, 27 September 2016

*The Advisory Council for the Sustainable Development of Catalonia (CADS) is a body which advises the Government of Catalonia on issues relating to sustainability. Created in 1998, the Council reports to the Ministry of Transparency and Foreign and Institutional Relations and Affairs. According to Decree 41/2014 of 1 April, on the Advisory Council for the Sustainable Development of Catalonia, the Council's functions are:*

- 1. To advise the Government of Catalonia on issues affecting sustainable development, especially on incorporating the principles of sustainability in policy, regional and sectoral planning instruments, draft legislation and regulations, and in the strategic projects and initiatives led by the Government.*
- 2. To assess the strategic policies for sustainable development put forward by the Government of Catalonia, especially those related to energy, water, food security, climate change and the green economy, and to formulate proposals for these areas.*
- 3. To encourage the transfer of knowledge between the Government, the academic world and civil society in the field of sustainable development.*
- 4. To advise the Government on the design and implementation of measures to raise awareness of sustainability.*
- 5. To encourage the involvement of economic and social sectors in the development process in Catalonia.*

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## PROLOGUE

The Government of Catalonia created the CADS in 1998, entrusting it with a great responsibility and one which is strategic for our future: advising, with overarching and forward-thinking vision, on the process of sustainable development in Catalonia.

The CADS' role is to advise the Government on how to incorporate sustainability in its main policies and measures. It is therefore drawing up recommendations on a highly complex matter, providing a systematic vision and ensuring that everyone in Catalan society is involved.

Since its creation, the CADS has issued a great many reports, commissioned by the Government of Catalonia or on its own initiative, which now constitute a major body of knowledge and recommendations which all members of the public can consult through our website.

The study of these reports and the many hours spent discussing these questions in the Council's plenary sessions have led the CADS to a concise definition of its general vision of a more sustainable Catalonia. This vision, which inspires everything the Council does, is based around three key goals:

- 1) Pushing forward progress on becoming a more mature, fairer, more cohesive and integrated society and a more innovative, competitive economy that uses resources more efficiently, with high levels of employment providing a decent standard of living, and with a strong business community with a global outlook.
- 2) Becoming a country with modern, efficient, effective and transparent public authorities and an articulate, informed public that plays an active role in the decision-making process.
- 3) Becoming a country that manages its natural resources, ensures the health of its ecosystems and the maintenance of their functions. A country with a quality environment that is resilient to the effects of climate change and which contributes to international efforts to ensure the sustainability of our planet.

In September 2015 the General Assembly of the United Nations formally adopted The 2030 Agenda for Sustainable Development, set out in the document *Transforming our world: the 2030 Agenda for Sustainable Development*. It contains 17 Sustainable Development Goals (SDG) and 169 targets to be achieved by 2030.

The Agenda is the fruit of two years intergovernmental efforts and is structured across five key areas: people, planet, prosperity, peace and partnership (this last being necessary for progress in the first four), and is based on premises which we would like to include in this preamble, given their significance:

- 1) The urgency of the measures needed to tackle the challenges and threats facing the sustainability of our planet.
- 2) The 2030 Agenda's potential for changing our current approach to the sustainability of the planet.
- 3) The global and universal nature of the SDGs and their targets, which must be applicable to every country (taking their current situation as the starting point).

- 4) The indivisible nature of the SDGs and targets in the 2030 Agenda, which must be met as a whole, taking an integrated approach so that no target is ignored.
- 5) Balancing the economic, social and environmental aspects of sustainability so that no one aspect is prioritised over the others.

The 2030 Agenda and the systematic, transformational approach it proposes meshes with the view taken from the start by the CADS and strengthens our concerns about the magnitude of the challenges facing us on a global scale and in Catalonia (the two are closely intertwined).

This is why the CADS has prepared this report, identifying the main challenges that, in our view, we must tackle as a country in order to successfully meet the global and common goals set out in the 2030 Agenda. If we tackle these challenges decisively we will advance towards a society that is, on a worldwide scale, fairer, more inclusive and more prosperous, where people have a decent standard of living and which respects the environmental limits of our planet.

This document contains a chapter for each of the first 16 SDGs (number 17 is excluded from our analysis as it is purely instrumental in nature). Each chapter contains a short discussion of the Goal in an international and European context, followed by a brief diagnosis of each target, identifying the challenges it poses for Catalonia. Bearing in mind that the 2030 Agenda report drafted by the United Nations is intended to cover a very wide range of situations, our report states when a global target is not considered relevant to Catalonia.

The report has been submitted to the Government of Catalonia so that it can be taken into consideration when the Government prepares the national plan required in response to the United Nations' 2030 Agenda. The CADS is aware that the drafting of this report is not an end in itself, but a means for ensuring that the 2030 Agenda goals are incorporated into all the Government's actions in order to ensure its transformational potential is realised.

We would like to end by commenting on the hard work involved in the preparation of this report, which has been a challenge in itself, given the size of the task and the little time available (six months), and the lack of international experience to use as a benchmark. We are sincerely grateful to all the members of the Council for their extraordinary dedication over these six months, and for the involvement and support of the external experts who have helped us. They are listed at the end of this report in recognition of their contribution.

We hope this report is of use to the Government of Catalonia.

Ferran Rodés i Vilà  
President

Carles Ibáñez i Martí  
Member (rapporteur)

Josep Maria Serena  
Member (rapporteur)

## INTRODUCTION

At the United Nations General Assembly's summit of 25-27 September 2015, it formally adopted the 2030 Agenda for Sustainable Development containing 17 Sustainable Development Goals (SDG) and 169 targets to be achieved by 2030.

The SDGs set out in the document *Transforming our world: the 2030 Agenda for Sustainable Development*<sup>1</sup> are the result of two years of intergovernmental efforts based on the outcome document of the Rio + 20 Conference held in June 2012 entitled 'The future we want'.

The new agenda for sustainable development is based on five fundamental ideas:

- A sense of **the urgent need** to achieve the SDGs, i.e. to tackle the challenges and threats facing the sustainability of our planet.
- The SDGs and associated targets' **potential for bringing about a change** to our current approach to the sustainability of the planet.
- The **global and universal nature** of the SDGs and the targets associated with each of them, which must be applicable to every country, albeit taking their current situation as the starting point.
- The **indivisible nature** of the SDGs and the targets associated with each of them, which must be met as a whole, taking an integrated approach so that no target is ignored.
- **Balancing all the aspects of sustainability** (economic, social and environmental) so that no one aspect is prioritised over the others.

Inspired by these five fundamental ideas and covering the five key areas of **planet, prosperity, people, peace and partnership**, the 17 SDGs set out in the 2030 Agenda are:

- 1** End poverty in all its forms everywhere.
- 2** End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- 3** Ensure healthy lives and promote well-being for all at all ages.
- 4** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- 5** Achieve gender equality and empower all women and girls.
- 6** Ensure availability and sustainable management of water and sanitation for all.
- 7** Ensure access to affordable, reliable, sustainable and modern energy for all.

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<sup>1</sup> <https://sustainabledevelopment.un.org/post2015/transformingourworld>



- 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- 9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- 10 Reduce inequality within and among countries.
- 11 Make cities and human settlements inclusive, safe, resilient and sustainable.
- 12 Ensure sustainable consumption and production patterns.
- 13 Take urgent action to combat climate change and its impacts.
- 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
- 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
- 17 Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

The 17 SDGs and their associated 169 targets cover areas such as poverty, inequality, food security, health, sustainable consumption and production, growth, jobs, infrastructures, the sustainable management of natural resources, the oceans and climate change, as well as gender equality, peace, social inclusion, access to justice and responsible institutions. These are crucial issues at the international level but also at the national and local levels.

The SDGs seek to build on the 2000-2015 Millennium Development Goals (MDG). The eight Millennium Goals were intended to boost the development of the poorest countries and covered the following areas: hunger and poverty, primary education, gender equality, health, environmental sustainability (biodiversity, drinking water, etc.) and global partnership. Although these goals were not achieved in their entirety, the implementation of the MDGs represented significant progress for many developing countries.

### **The purpose and aim of this report**

The declaration signed in New York in September 2015 encourages all the member states of the United Nations General Assembly to draw up, as soon as possible, ambitious national responses on the application of the Agenda. Effectively, to promote the application of the 2030 Agenda in their own countries.



This transposition must take into account that the SDGs are (i) **integrated and indivisible**, (ii) **global in nature and universally applicable**, and that they must be applied (iii) **taking into account different national realities, capacities and levels of development** and (iv) **respecting national policies and priorities**.

The Government of Catalonia, via the Government Plan for the 11th legislature, approved in April 2016, is committed to:

- ❖ Preparing a National Sustainable Development Goals Plan to ensure the 2030 Agenda is implemented in Catalonia.
- ❖ Developing an integrated system of targets and indicators related to the United Nations' Sustainable Development Goals as they apply to Catalonia.

Aware of the importance of the 2030 Agenda and, based on its role as an advisory council, wishing to support the Government of Catalonia in this commitment, the CADS agreed to draft this report, **the aim of which is to identify the strategic challenges facing Catalonia in implementing the SDGs**.

This report is not intended in any way to represent a Government Plan for the application of the 2030 Agenda. On the contrary, it is intended to present the Government with a set of ideas, rather than specific actions or measures, on the challenges identified in each SDG so that the Government can prepare its own plan after receiving and assessing the CADS report.

Apart from helping the Government to prepare its plan, the report will also be useful for the CADS in determining its priorities over the next few years.

### **The structure and content of the report**

Given the integrated and indivisible nature of the SDGs approved by the United Nations, the CADS report covers the first 16 Goals, many of which are closely interlinked (SDG 17 has not been included in the analysis given its instrumental nature). Each Goal is broken down into a number of targets, some of which are clearly applicable to Catalonia, others not at all, or less so.

For each Goal, the report contains a brief review of the global and European situation, helping the reader to understand it in context. This is followed by a short target-by-target diagnosis, noting the main challenges each one raises. Finally, based on this content, there is a section setting out the challenges that the CADS considers key in regard to the SDG in question.

Based on the CADS' experiences in recent years, it is crucial that the report consider the governance of sustainable development in Catalonia and the importance of fostering transformational measures that will enable the country to tackle the challenges facing it with regard to sustainability.

The report intentionally excludes references to the means for implementing the Goals described in the 2030 Agenda, on the understanding that this is the responsibility of the Government when drawing up its national plan.

It should also be made clear that the report focuses on domestic sustainability targets, i.e. those which are particularly relevant within the country. The challenges that involve changing internal policy to reduce Catalonia's impact on the outside world (do-no-harm targets) are not included, nor are those challenges based on the country's international duties and responsibilities (international responsibility targets).

### **The drafting process**

This report was prepared over six months, during which time the CADS held four progress meetings (in March, April, May and June 2016).

The basic documentation was initially prepared by the Council's technical team with the support of the Council members and former members and external experts (see appendix at end).

As the 2030 Agenda is very new, there was little international experience available to draw on when the CADS report was being drafted. The most notable examples were based on the documentary resources and presentations given at the workshops of the European Sustainable Development Network (ESDN) in which the CADS had the opportunity to participate in recent months.



## 1 END POVERTY IN ALL ITS FORMS EVERYWHERE

### UNITED NATIONS 2030 AGENDA GOALS

- 1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than USD 1.25 a day.
- 1.2 By 2030, reduce by at least half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.
- 1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable.
- 1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.
- 1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

## INTERNATIONAL CONTEXT

836 million people around the world were living in extreme poverty in 2015<sup>2</sup>. Although extreme poverty rates have been cut by more than half since 1990, when this figure stood at 1.9 billion, it is still very high. 80% of these people live in Southern Asia and sub-Saharan Africa, areas which are highly vulnerable to climate change and hunger, and where there are major armed conflicts.

Worldwide, about one in five people in developing regions lives on less than 1.25 dollars per day. In practice this means over 800 million people, affecting their access to basics such as food, drinking water and sanitation.

An analysis of the distribution of wealth shows there is great inequality: in 2015 the world's richest 1% owned the same wealth as the remaining 99<sup>3</sup>. Sixty-two people (53 of them men) own the same wealth as the poorest half of the world's population, i.e. 3.6 billion people (in 2010 this wealth was held by 388 people).

The wealth of the 62 richest people has risen by 44% in the five years since 2010, an increase of more than half a billion dollars (542 billion dollars) to 1.76 billion dollars. Meanwhile, the wealth of the bottom half fell by just over a billion dollars in the same period – a drop of 41%.

Since the turn of the century, the poorest half of the world's population has received just 1% of the total increase in global wealth, while half of that 'new wealth' has gone to the top 1%.

The average annual income of the poorest 10% of people in the world, who suffer from poverty, hunger and exclusion, has risen by less than three dollars a year in almost a quarter of a century. Their daily income has risen by less than a single cent every year.

One recent estimate<sup>3</sup> is that 7.6 billion dollars of individual wealth, more than the combined GDP of the UK and Germany, is currently held in tax havens.

Between 2005 and 2015 over 1.5 billion people were affected by disasters. People's vulnerability to the effects of disasters is linked to the socio-economic level of the country in which they live and its capacity for resilience. While countries with high income levels were hit by 41% of the weather disasters recorded, they accounted for just 4% of deaths. On the other hand, 89% of deaths occurred in middle to low income countries although they only suffered 26% of the total disasters.

The economic losses from these disasters were concentrated in the higher income countries (61%), compared with 10% in middle to low income countries, due both to the higher economic value of the assets affected and to the lack of information available on poorer countries (where figures are not systematically collected) [see SDG #13].

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<sup>2</sup> UN data on the SDGs: <http://www.un.org/sustainabledevelopment/poverty/>

<sup>3</sup> [Report 'An Economy For the 1%'](#). Intermon Oxfam, January 2016.

## EUROPEAN CONTEXT

In 2014, 24.4% of the population in the EU-28 (122.3 million people) were at risk of poverty or social exclusion<sup>4</sup>, i.e., they were severely materially deprived<sup>5</sup>, their income was below the poverty threshold (even after social transfers), or they lived in households with very low work intensity<sup>6</sup>. By country, a third of population at risk of poverty or social exclusion was concentrated in three EU Member States, all of them with rates higher than the European average: Romania (40.2%), Bulgaria (40.1%) and Greece (36.0%).

Although the overall at-risk-of-poverty rate decreased slightly at EU-28 level between 2013 and 2014 by 0.1 percentage points, the percentage of the population at risk of poverty or exclusion has continued to grow in certain states. In Spain, for example, it increased by 1.9 percentage points, from 24.5% to 29.2% of the population.

Over the longer period from 2008 to 2014, the population at risk increased in 14 of the 28 member states, most notably in Greece (7 percentage points), Spain (4.7 pp), Cyprus (4.1 pp) and Malta (3.7 pp)<sup>7</sup>.

The risk of poverty or social exclusion was greater among women, young adults (18 to 24 years old), the unemployed (2 out of 3 people without work were in a situation of risk) and people with lower levels of education. The risk was especially high among single parent families with dependent children (in 2012 over half of this demographic was in a situation of risk<sup>8</sup>).

The Europe 2020<sup>9</sup> strategy helped reduce the number of people living below the poverty threshold by 20 million, of which 1.5 million were in Spain.

Government expenditure on social protection accounted for the greatest proportion of public spending by EU member states in 2014 (except for Cyprus)<sup>10</sup>. The weight of government social protection expenditure varied from 11.4% of GDP in Romania to 25.4% in Finland. Eight Member States (Finland, France, Denmark, Austria, Italy, Sweden, Greece and Slovakia) devoted at least 20% of GDP to social protection while Romania and the three Baltic Member States each spent less than 12% of GDP on social protection.

<sup>4</sup> [http://ec.europa.eu/eurostat/statistics-explained/index.php/People\\_at\\_risk\\_of\\_poverty\\_or\\_social\\_exclusion](http://ec.europa.eu/eurostat/statistics-explained/index.php/People_at_risk_of_poverty_or_social_exclusion)

<sup>5</sup> Defined as being unable to face unexpected financial expenses, afford one week's annual holiday away from home, afford a meal with meat, chicken or fish every second day, afford heating to keep the house warm, or buy consumer durables (such as a washing machine, colour television, telephone or car), having arrears on mortgage or rent payments, utility bills, hire purchase instalments or other loan payment.

<sup>6</sup> Number of persons living in a household having a work intensity below a threshold set at 0.20. The work intensity of a household is the ratio of the total number of months that all working-age household members (18-59 years old, excluding students of 18-24 years old) have worked during the year and the total number of months they theoretically could have worked in the same period.

<sup>7</sup> <http://ec.europa.eu/eurostat/documents/2995521/7034688/3-16102015-CP-EN.pdf/7d2bba5e-ad86-4237-b5cf-08a5407ed801>

<sup>8</sup> 'Living conditions in Europe'. Eurostat Statistical books. 2014 Edition.

<sup>9</sup> [Overview of Europe 2020 targets.](#)

<sup>10</sup> <http://ec.europa.eu/eurostat/documents/2995521/7214399/2-22032016-BP-EN.pdf/596b9daa-b9d6-415d-b85a-b41174488728>

In all states, spending on 'old age' benefits, including retirement pensions, was the most significant item, accounting for 10.3% of GDP in the EU-28 in 2014. Government expenditure on 'old age' as a share of GDP was highest in Greece (15.3%), Italy (14.0%), France (13.7%) and Austria (13.2%), and lowest in Ireland (3.7%).

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The basic aim of the targets defined under this goal is to eradicate all forms of poverty, especially at its most extreme. This means providing universal access to basic services and guaranteeing an appropriate level of social protection, as well as building resilience amongst people in the most vulnerable situations.

The main challenges for Catalonia with regard to this SDG are therefore detailed below, structured in line with the 2030 Agenda targets.

### 1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than 1.25 dollars a day.

This Goal is the successor to the first Millennium Development Goal, which was to 'Halve, between 1990 and 2015, the proportion of people whose income is less than 1.25 dollars a day'. This goal was achieved in 2010 and the great challenge now is to rectify this situation for the remaining half.

The target is based on the so-called 'international poverty line', set at an income of less than 1.25 US dollars per person per day. It should be borne in mind, though, that the World Bank uses an updated international poverty line of 1.90 US dollars per day<sup>11</sup>, based on new data on the cost of living in each country (using purchasing power parity exchange rates).

According to World Bank figures, 0.1% of people in developed regions live on less than 1.90 US dollars per day<sup>12</sup>. In Catalonia there are no figures on the number of people living in extreme poverty as defined by this international indicator.

In Europe, a set of poverty and social exclusion indicators for use at the political, academic and civil levels were agreed at the Lisbon Summit in 2000, allowing the outcomes of state policies to be compared against a set of common targets designed to promote social inclusion. We are now within the period covered by the Europe 2020 Strategy which established European and national targets for reducing poverty and social exclusion.

The main Europe-wide tool for studying social exclusion processes and poverty is the Survey on Living Conditions, and it is the main source of data for this report.

<sup>11</sup> [The Sustainable Development Goals Report 2016](#). United Nations.

<sup>12</sup> [The Sustainable Development Goals Report 2016](#). United Nations.

**1.2 By 2030, reduce by at least half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.**

The aim of this second target is to reduce by at least half the proportion of poor people according to national definitions, in contrast to the first target which is based on an international definition of extreme poverty.

In 2015<sup>13</sup>, 23.5% of the population of Catalonia was at risk of poverty or social exclusion (the AROPE rate), 2.5 percentage points lower than in the previous year. This rate includes the proportion of the population below the risk of poverty threshold (19%) or who live in households with a low work intensity<sup>14</sup> (8.8%) or with severe material deprivation<sup>15</sup> (6.7%).

Based on these figures for 2015, the population at risk of poverty has fallen by 1.9 percentage points compared with the previous year (when it affected 20.9% of the population). This figure is slightly below that for Spain (22.1%) but higher than the European average (17.2% in 2014). The figures published by IDESCAT show that the upward trend since 2008, when the financial crisis began, has now halted.

The population at risk of poverty includes people in households with a disposable income of less than 60% of the average for that type of household. The annual income threshold below which a person is defined as at risk of poverty in 2015 was 9,667 euros in single person households (1% down on the previous year) while the figure was 20,301 euros for households with two adults and two children. This threshold is 100 euros lower than in the previous year, a fact which must be borne in mind when assessing the statistics on the reduction of poverty in Catalonia.

Since 2010 the at-risk-of-poverty threshold has fallen for all types of household. In 2015 the risk of poverty for households with dependent children was 25.1%, while for single-parent households with one or more dependent children (90% of them headed by a woman) the risk rate was 34.1%. This is much higher than for households without dependent children, where the risk was 12.5%.

Broken down by age group, the risk of poverty has decreased for every group. The risk is highest for under-16s (27.9%), in contrast to over-65 year olds where the rate is much

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<sup>13</sup> [Statistical Institute of Catalonia. Enquesta de condicions de vida \(Survey on Living Conditions\) \(2015\)](#)

<sup>14</sup> Number of persons living in a household having a work intensity below a threshold set at 0.20. The work intensity of a household is the ratio of the total number of months that all working-age household members (18-59 years old, excluding students of 18-24 years old) have worked during the year and the total number of months they theoretically could have worked in the same period.

<sup>15</sup> Severe material deprivation is defined as the percentage of the total population living in households that cannot afford at least four of the following nine items: mortgage, rent or hire purchase instalments; to keep the house warm; one week's annual holiday; a meal with meat, chicken or fish every second day; a telephone; a television; a washing machine; a car; to face unexpected financial expenses.



lower (12.1%), due to the effect of social transfers, an issue which will be discussed later in this report.

Although poverty affects the entire population, in 2014 the overall poverty rate for women was higher than the average for Catalonia (21.6% compared to 20.9%) and had increased by almost three percentage points since 2013<sup>16</sup>. This increase occurred across all age groups, but was highest for those aged 16 to 64 years old (21.8%).

Childhood poverty has negative impacts on the individual that persist throughout life. It affects health (anxiety, obesity and other health problems) and other aspects such as academic performance and social and professional mobility<sup>17</sup>. Figures showing that up to 480,000 minors live at risk of poverty or social exclusion in Catalonia, and that 50,000 are in poverty, are therefore particularly worrying<sup>18</sup>.

The proportion of children at risk of poverty or social exclusion was 32.9% in 2014, three percentage points higher than in 2013. This increase, which began in 2009, represented a break from the stability seen in previous decades, when the rate stayed below the EU-15 average, and reflects the severe economic crisis that has affected the country in recent years<sup>19</sup>.

The link between poverty and unemployment is evident, as made clear by the statistics showing that 36.8% of unemployed people were at risk of poverty in 2013 in Catalonia. This worrying fact is made worse by a new phenomenon, the growing precariousness of the labour market, bringing with it an increase in the number of people at risk of poverty despite being in paid employment.

In Catalonia, the proportion of the working population at risk of poverty grew from 8.6% in 2009 to 11.7% in 2014. This is now affecting women more than men (13.1% compared with 10.5% this year), especially women aged 18 to 25 years old.

Finally, the link between educational attainment and the risk of poverty rate should be noted. In 2013 the at-risk-of-poverty rate for people with higher education was 8.2% (more than 11.6 percentage points lower than the rate for the general population). The rate for people with only primary education or less was 30%.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Implement a stable system of benefits for families with children below the poverty line, with the child as the beneficiary.

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<sup>16</sup> Rovira, Elisenda: [La feminització de la pobresa. Reivindicant una mirada de gènere](#). Debats Catalunya Social núm. 46, March 2016.

<sup>17</sup> Ayuso, Sònia (2015): *Infància, pobresa i crisi econòmica*. Barcelona: Fundació Bancària "La Caixa" [Col·lecció Estudis Socials, no. 40].

<sup>18</sup> National Statistics Institute Survey on Living Conditions.

<sup>19</sup> MARÍ-KLOSE, P.; MARÍ-KLOSE, M. (2012): *Crisi i pobresa infantil a Catalunya*. Barcelona: Unicef Catalunya. <http://www.sis.net/documentos/ficha/218151.pdf>



- ❖ Ensure that school meal subsidies are sufficient in terms of amount and coverage to guarantee all children receive a healthy meal and there is a place to go at midday in all schools.
- ❖ Implement programmes to create jobs and improve the employment prospects of young people, adults with childcare responsibilities, people with mental disabilities and illnesses, the over-50s and the long-term unemployed.

**1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable.**

Comparing risk rates before and after social transfers clearly demonstrates the impact of social protection systems. According to figures from the 2015 DESCAT Survey on Living Conditions<sup>20</sup>, in 2015 the at-risk-of-poverty rate before social transfers was 42.1% (44.1% in 2013), but this fell to 24.9% (29.1% in 2013) after taking into account old age and disability pensions and to 19.0% (19.8% in 2013) after taking into account all social transfers.

This survey showed that in 2015 approximately 1.85 million households received at least one type of social benefit (6.8% less than in the previous year).

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Streamline the range of grants and loans currently available from the welfare system, moving towards a more holistic and integrated approach to helping people.
- ❖ Improve coordination between all the competent authorities and the tertiary sector and the planning of social services across the health, education, housing, town planning and economic development sectors.
- ❖ Improve the services that foster personal independence and support the elderly and sufferers of mental illness or disability in their daily lives.
- ❖ Implement measures to move away from the family-based model of care for dependent persons to help carers escape poverty and the submerged economy.
- ❖ Strengthen social services for poor families with children with both targeted benefits (school meal subsidies, health equipment, educational leisure activities, etc.) and support and guidance for parents.

**1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.**

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<sup>20</sup> [Enquesta de condicions de vida \(2015\)](#). Idescat.

Social equality is based on the fair distribution of resources. Social inequality has increased in Catalonia in recent years, defined as the difference in income between the 20% of the population with the highest incomes and the bottom 20%<sup>21</sup>.

Access to basic services such as housing, water, education, health and energy is discussed in various sections of this report. With regard to the last of these, as has been made clear by [DSG #7](#), energy poverty has become an issue in a significant number of households, including in Europe. According to figures from IDESCAT, in 2014 there were 683,000 people in Catalonia who could not keep their homes sufficiently warm<sup>22</sup>, i.e. around 9% of the population.

It is therefore necessary to take measures to ensure that everyone has access to decent housing and enough energy to meet their domestic needs, and that nobody is required to dedicate an excessive part of their income to paying for housing and energy bills<sup>23</sup>.

In the *CADS Report 3/2014 on the energy challenges facing Catalonia to 2030*, one of the challenges identified was 'To reduce energy poverty for a section of the population'. Three causes were noted: 1) high energy prices (electricity, gas, etc.); 2) the inadequate quality of housing; and 3) low incomes.

Action has been taken at various levels by public authorities to tackle this situation<sup>24</sup> [[see SDG #11](#)]. Social movements are also acting and putting forward proposals to deal with the issue<sup>25</sup>. Problems accessing and remaining permanently in housing have worsened both in the owned and rented sectors, as has the risk of social exclusion.

The vulnerability of families living in rented accommodation also needs to be noted. According to 2014 figures, 40.3% of people living in rented accommodation<sup>26</sup> are poor, compared to an average for the population as a whole of 20.9%. An analysis of the AROPE rate for people at risk of poverty and social exclusion, broken down by housing type, shows that people in rented housing are at much higher risk (45%) than the average (26%)<sup>27</sup> [[see SDG #11](#)].

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<sup>21</sup> INSOCAT report: Per a la millora de l'acció social, No. 6: [Polarització social i pobresa més severa](#), November 2015.

<sup>22</sup> [IDESCAT figures](#).

<sup>23</sup> Based on the definition of energy poverty in the report by TIRADO et al. (2014) *Pobreza energética en España. Análisis de tendencias*. Environmental Sciences Association, Madrid.

<sup>24</sup> For example, *Law 24/2015, of 29 July, on urgent measures to tackle the housing emergency and energy poverty*.

<sup>25</sup> See, for example, the proposals put forward by the Round Table for the tertiary social sector in Catalonia (<http://www.tercersector.cat/categoria-tematica/pobresa-energetica>); or the Alliance against energy poverty (<http://pobresaenergetica.es/>).

<sup>26</sup> [Population at risk of poverty by housing type. IDESCAT](#).

<sup>27</sup> AROPE (At risk of poverty and social exclusion) as defined in criteria established by Eurostat refers to people in at least one of the following situations: at risk of poverty, suffering severe material deprivation or with a low work intensity.

Finally, in 2014 the Catalan Housing Agency<sup>28</sup> attended to 5,433 cases of people with nowhere to sleep, 4,294 of which were in Barcelona and its metropolitan area. It also estimates that there were 8,634 cases of homelessness dealt with in 2014.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Foster policies to support families in order to prevent social exclusion and guarantee access to housing by ensuring there is sufficient social housing and public housing at accessible rents. [see SDG #11]
- ❖ Guarantee supplies of drinking water to all, and ensure nobody is left without access to this basic requirement for economic reasons. [see SDG #6]
- ❖ Reduce fuel poverty in Catalonia through structural measures with medium-term (2030) outcomes, increasing the population's energy resilience and reducing the need for social welfare support.

**1.5** By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

The extreme climate-related events that have resulted in most deaths in Catalonia were directly related to the socio-economic level of the populations most affected. The floods of 25 September 1962 affected over 4,000 people. The victims were mainly in the Vallès Occidental area, where 815 people lost their lives, 250 of them in Terrassa, Sabadell and Rubí. The disaster was made much worse by the fact that it occurred at night when the victims were sleeping in homes built in flood-prone areas<sup>29</sup>.

Sociodemographic factors and the nature of the urban environment are associated with a higher mortality risk in periods of extreme temperatures (heatwaves). A study by the Centre for Research in Environmental Epidemiology (CREAL)<sup>30</sup> quantified the impact of sociodemographic factors on the risk of dying during a heatwave.

A lack of green spaces and high concentrations of manual workers are the greatest contributors to higher mortality, both increasing the risk by 60%. This is followed by living in an area with a high proportion of older (pre-1920) buildings, which increases the risk of death in a heatwave by 40%, and homes without air conditioning add 30% to the risk. The study concluded that the combination of an area with a high concentration of old buildings, manual workers and a lack of greenery could double the risk of death in a heatwave.

<sup>28</sup> [Quantificació i distribució territorial de la població mal allotjada a Catalunya](#). Catalan Housing Agency, 2016.

<sup>29</sup> Llasat, M.C., J. Gilabert, M. Llasat-Botija, M. Cortès, 2015, Estudi de les inundacions catastròfiques a Catalunya 1900-2015, Report DAM/250904-26/1411. Projecte Documentació d'Emergències Històriques. Protecció Civil.

<sup>30</sup> Yihan Xu et al., 2013. Differences on the effect of heat waves on mortality by sociodemographic and urban landscape characteristics. *Epidemiol Community Health*. Doi: 10.1136/jech-2012-201899.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Ameliorate the socio-economic conditions that make people more vulnerable and to identify the most vulnerable sections of the population. [see SDG #11]
- ❖ Increase people's ability to protect themselves, especially among the most vulnerable sections of society, through measures to inform and raise awareness. [see SDG #11]

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 1

The CADS considers that the main challenges facing Catalonia with respect to SDG 1 are to:

- ❖ Encourage policies to support families in order to prevent social exclusion and guarantee access to housing by ensuring there is sufficient social housing and public housing at affordable rents.
- ❖ Guarantee supplies of drinking water to all, and ensure nobody is left without access to this basic requirement for economic reasons.
- ❖ Reduce fuel poverty in Catalonia through structural measures with medium-term outcomes, increasing the population's energy resilience and reducing the need for social welfare support.
- ❖ Streamline the range of grants and loans currently available from the welfare system, moving towards a more holistic and integrated approach to helping people.
- ❖ Improve coordination between all the competent authorities and the tertiary sector and the planning of social services across the health, education, housing, town planning and economic development sectors.
- ❖ Improve the services that foster personal independence and support the elderly and sufferers of mental illness or disability in their daily lives.
- ❖ Implement measures to move away from the family-based model of care for dependent persons to help carers escape poverty and the submerged economy.
- ❖ Strengthen social services for poor families with children with both targeted benefits (school meal subsidies, health equipment, extra-curricular activities, etc.) and support and guidance for parents.
- ❖ Implement a stable system of benefits for families with children below the poverty line, with the child as the beneficiary.
- ❖ Implement programmes to create jobs and improve the employment prospects of young people, adults with childcare responsibilities, people with mental disabilities and illnesses, the over-50s and the long-term unemployed.

## **2 END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE**

### **UNITED NATIONS 2030 AGENDA GOALS**

- 2.1** By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.
- 2.2** By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.
- 2.3** By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.
- 2.4** By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
- 2.5** By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

## INTERNATIONAL CONTEXT

Although the world's population has grown, the share of undernourished people in the population has decreased from 18.6% in 1990-92 to 10.9% in 2014. According to the FAO<sup>31</sup>, there are still 795 million undernourished people (60% of them women), or one person in nine. The majority of them (780 million) live in developing countries.

The proportion of underweight children under 5 years of age has declined, but one child in four still suffers from stunted growth (one in three in developing countries).

At the same time, 1.4 billion people around the world are overweight, of which 500 million are obese,<sup>32</sup> and the World Health Organization warns that at least 41 million children under the age of five are overweight, increasing from 4.8% in 1990 to 6.1% of the population in 2014<sup>33</sup>.

Eighty per cent of the food produced in developing countries comes from over 500 million small agricultural holdings. Agriculture provides a living for 40% of the world's population and is the main source of income for poor rural households.

But the world's population is growing, and will need to be fed. To provide for a population projected to reach 9.3 billion in 2050, it is estimated that food production will need to increase by 60%<sup>34</sup>. And this will have to be done in a context of depleted resources (land, water, biodiversity) and climate change<sup>35</sup>.

Since the start of the twentieth century the decline in biodiversity for food and agriculture has been enormous, an estimated 75%. Just five cereal crops provide 60% of the world population's energy intake and only 14 of the more than 30 domesticated mammal and bird species provide 90% of human food from livestock<sup>36</sup>.

## EUROPEAN CONTEXT

The EU is the top exporter and importer of agrifood products. In 2014, total export and import values reached 122 billion euros and 104 billion euros respectively, resulting in a positive trade balance of 18 billion euros.<sup>37</sup>

The majority of households within the EU can afford sufficient quality food. Nevertheless, approximately 50 million people (9% of the population) in Europe face difficulties in obtaining enough quality food<sup>38</sup>.

<sup>31</sup> FAO, IFAD and WFP, 2015. [\*The State of Food Insecurity in the World 2015. Meeting the 2015 international hunger targets: taking stock of uneven progress\*](#). Rome, FAO 2015.

<sup>32</sup> [\*The State of food and agriculture 2013\*](#). Rome, FAO 2013.

<sup>33</sup> [\*Report of the Commission on Ending Childhood obesity\*](#), World Health Organization, 2016.

<sup>34</sup> HLPE. 2016. [\*Sustainable agricultural development for food security and nutrition: what roles for livestock?\*](#) A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.

<sup>35</sup> [\*Building a common vision for sustainable food and agriculture\*](#), FAO 2014.

<sup>36</sup> [\*Genetic Resources and biodiversity for food and agriculture. A treasure for the future\*](#). Infographic. FAO 2015.

<sup>37</sup> [\*Agri-food trade in 2014: EU-US interaction strengthened\*](#), Monitoring Agri-trade Policy, European Commission, 2015.

A parallel issue of grave importance for the population of Europe is that of excess weight, with the proportion of adults considered to be overweight varying between 37.0% and 56.7% for women and between 51.0% and 69.3% for men. Of the countries for which there are data, France has the least number of overweight citizens and the United Kingdom the most. In general, the proportion of overweight people is higher in older age groups. The number of overweight women, meanwhile, diminishes the higher the level of education. This correlation is not so clearly observed for men<sup>39</sup>.

The relative weight of agriculture, fishing and forestry in the economies of the EU-28 has diminished continuously over the last 50 years, and fell from 2.1% in 2000 to 1.7% of total economic activity in 2013. Ninety-seven per cent of agricultural holdings in Europe are family owned and 30% of their managers are over the age of 65 (under-35s account for just 7.5%).

From 2005 to 2013 agricultural output increased in practically every EU country (except Greece), although agricultural jobs decreased by 21.8%. The agricultural income index<sup>40</sup> increased in this period for most EU-28 countries (apart from Ireland, Malta, Croatia, Luxembourg, Slovenia, Cyprus and Italy)<sup>41</sup>.

In 2009, 20.9% of the utilised agricultural area (UAA) in the EU-27 was enrolled in agri-environmental measures<sup>42</sup>. The area devoted to organic farming has grown rapidly in recent years and accounted for 5.7% of UAA in 2012<sup>43</sup>.

Biological and genetic diversity in agriculture is recognised by the European Union as being of vital importance for the sustainable development of agricultural production and rural areas. It has therefore been built into the Common Agricultural Policy and the EU Biodiversity Strategy, and there is a Community programme on the conservation, characterisation, collection and utilisation of genetic resources in agriculture.

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<sup>38</sup> [The challenge of resilience in a globalised world](#). Joint Research Centre, European Commission, 2015.

<sup>39</sup> These are the latest published figures (2008). A second wave of the European health interview survey was conducted for 2013-15 with a planned article update foreseen for December 2016.

<sup>40</sup> The agricultural income index is calculated as agricultural income per labour input expressed in annual work units (AWU).

<sup>41</sup> Agriculture, forestry and fishery statistics 2014 Edition. Eurostat, 2015.

<sup>42</sup> [Agri-environmental indicator – commitments](#), Eurostat 2012. New figures are expected to be published in October 2016.

<sup>43</sup> [SOER 2015 — The European environment — state and outlook 2015](#). European Environmental Agency, 2015.



## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are therefore detailed below, structured in line with the 2030 Agenda targets.

**2.1** By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.

According to the *Report on childhood malnutrition in Catalonia*<sup>44</sup> published by the Catalan Ombudsman (Síndic de Greuges) in 2013, acute or chronic childhood undernourishment for socio-economic reasons is not identified as a structural problem in Catalonia, although occasional cases do arise.

The economic crisis in recent years has increased and aggravated the number of situations where people have problems accessing adequate food. This is reflected in the figures for the Barcelona Food Bank, which attended to 58,381 people and distributed 8,245 tonnes of food in 2008: by 2014 this had increased to 152,489 people and 16,191 tonnes of food<sup>45</sup>.

The Red Cross also warned that in 2015 nine out of ten families helped through its projects to combat poverty suffered from some form of food insecurity<sup>46</sup>.

Therefore, although Catalonia cannot be said to have a structural problem of undernourishment, there are families which have problems obtaining healthy, nutritious and sufficient food. This results in malnutrition, dealt with under target 2.2.

**2.2** By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.

In 2014 in Catalonia 227,700 people (3.1% of the population) were unable to afford a meal with meat or fish at least once every two days. For people in work this figure was 1.5% while it was 6.5% for unemployed people<sup>47</sup>.

The Catalan Ombudsman, in the report mentioned above, noted that childhood malnutrition<sup>48</sup>, in all its forms, is more common than undernourishment and, in most cases, is due to the effects of the economic crisis.

<sup>44</sup> [Informe sobre la malnutrició infantil a Catalunya](#). Catalan Ombudsman (Síndic de Greuges), August 2013.

<sup>45</sup> [Memòria 2014 del Banc dels Aliments de Barcelona](#), Fundació Banc dels Aliments (Food Bank Foundation).

<sup>46</sup> [L'accés de la infància a l'alimentació saludable](#). Red Cross Vulnerability Observatory (Observatori de Vulnerabilitat de la Creu Roja), 2015.

<sup>47</sup> IDESCAT, based on figures from the National Statistics Institute Survey on Living Conditions.



The work carried out by government authorities and Food Banks to distribute food is vital to guarantee the right to an adequate diet.

Nevertheless, these palliative measures should only be used to tackle occasional situations, as lack of food for socio-economic reasons must not be allowed to become a structural problem. It is necessary, therefore, to ensure that everyone has the purchasing power to access food, and measures to reduce poverty [see SDG #1] are vital if this target is to be met.

At the same time, people's eating habits are changing in Catalonia, as in many developed countries. People are now consuming more calories, more animal-based products, vegetable oils and sugar. This change in diet, together with sedentary lifestyles, has led to excess weight becoming increasingly prevalent, a problem with serious repercussions for health [see SDG #3].

Almost half the population aged from 18 to 74 is too heavy, 33.1% are overweight and 15.0% are obese. More men (40.4%) than women (25.7%) are overweight, while obesity rates are similar for both sexes (15.1% of men and 15.0% of women). Although there are multiple factors behind this problem, the percentage of overweight and obese people is higher among the most disadvantaged social classes and people with only primary or no education<sup>49</sup>.

Encouraging healthy eating habits is, therefore, vital for achieving healthier diets, but reducing poverty and raising educational levels [see SDG #4] clearly also have a major influence on this issue.

The main challenges facing Catalonia with regard to this 2030 Agenda target are to:

- ❖ Ensure that everyone has sufficient economic resources to access the foodstuffs needed to ensure an adequate diet in terms of quantity and quality.
- ❖ Reduce the number of overweight and obese people in the population, a problem with major repercussions for health, through encouraging healthy eating habits, reducing poverty and improving education.

**2.3** By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

Agricultural yields in Catalonia increased by 13.2% from 2003 to 2013 and agricultural income obtained from each unit of labour input (the agricultural income index) was 20.7%. Agricultural productivity is also high. Cereal yields in Catalonia in 2013, for

<sup>48</sup> Cases where children do not have a sufficiently balanced diet, their diet is poor and does not contain the range of nutrients needed to effectively guarantee their right to full development.

<sup>49</sup> [Catalan Health Survey 2014](#), Directorate-General for Health Planning and Research, Ministry of Health.

example, were 5.39 tonnes per hectare<sup>50</sup>, well above the worldwide average of 3.85 tonnes per hectare and even slightly higher than the European average of 5.33 tonnes per hectare, but falling far short of yields in France (7.07 tonnes) or Germany (7.32 tonnes)<sup>51</sup>.

The challenge facing Catalonia with regard to this issue, as for most developed countries, is how to optimise agricultural productivity. That is, how to improve agricultural yields and the economic benefits obtained in relation to the resources invested (land, water, energy, fertilisers, etc.). A good strategy for achieving this aim is to focus on quality products with high added value.

Conserving the base supporting agricultural output, i.e. agricultural activity and land, is also key to maintaining a local food procurement system. A challenge facing Catalonia is to maintain control of its basis production assets, such as agricultural land and water, in the face of global processes to acquire and control agricultural resources.

People have been moving steadily away from farming over the last century, a trend that continues even today. Between 1999 and 2013 the number of farms shrank by 14.2% and agricultural employment by 24%. Meanwhile, the land devoted to crops fell by 171,577 hectares (15.5%) from 1,106,783 in 1993 to 935,206 hectares in 2009<sup>52</sup>. Measures are therefore needed to protect agricultural land, especially the most fertile land, and, where possible, to restore abandoned areas which were formerly productive.

The sector is also progressively ageing, with the number of farm owners over the age of 65 up from 16,395 in 1999 to 20,181 in 2013, while the number of farmers under the age of 35 fell in the same period from 4,708 to 1,907. The good news is that the proportion of women farmers grew from 18% in 1999 to 24% in 2013. It is necessary to ensure that farms are passed onto the next generation, that young, trained people go into farming, and to continue encouraging women to work in this sector.

To ensure agricultural activity is maintained it is vital to guarantee adequate incomes, but it is also important that people wishing to work in farming have access to the necessary resources, especially young people. It is necessary to facilitate access to land, to technical knowledge, material and technological tools and to innovation.

The increasing concentration of food businesses may obstruct the achievement of this target. The processing industry requires an ever more concentrated production structure while the primary sector has a highly fragmented production structure. It will be necessary to oversee competition in agricultural markets to close the gap in the bargaining power of the parties involved to prevent unfair imbalances in pricing and the distribution of margins.

The main challenges facing Catalonia with regard to this 2030 Agenda target are to:

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<sup>50</sup> Own data prepared from figures published by the Ministry of Agriculture, Livestock, Fisheries and Food.

<sup>51</sup> [World Bank figures](#) [Consulted on 6 July 2016].

<sup>52</sup> [Mapa de Cobertes del Sòl a Catalunya](#), 4th edition (September 2013).

- ❖ Optimise the agricultural and economic productivity of the primary sector in Catalonia, i.e. to improve production in relation to the resources invested (land, water, energy, fertilisers, etc.).
- ❖ Protect agricultural land, especially the most fertile land, and to restore abandoned areas which were formerly productive.
- ❖ Ensure that farms are passed on to the next generation so that young, trained people go into farming, and to continue encouraging women to work in this sector.
- ❖ Oversee competition in agricultural markets to prevent unfair imbalances in pricing and the distribution of margins.

**2.4** By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

The sustainability of the food production system and its resilience to climate change is one of the major challenges facing Catalonia. Advances have certainly been made in this area in recent years, including bans on the use of many insecticides and increasing organic production. But we need to go further: The efficient use of resources and the application of practices that ensure the continuity of ecosystems and the services they provide is vital to ensure future production.

Water is one of these vital resources. Agriculture and livestock farming uses 73.5% of the water consumed in Catalonia, mainly for irrigation. But the most widely used irrigation system is still the most inefficient, surface irrigation, used on 61% of irrigable land (compared to 12% for drip and 26% for sprinkler systems). It should also be noted that very little use is made yet of treatment plant water, used to irrigate just 0.24% of the total area<sup>53</sup>. The modernisation of irrigation systems and the use of reclaimed water are two areas of particular relevance to making more efficient use of water [see SDG #6].

Using energy more efficiently in the agricultural and fishing sectors is another area to be tackled. It should be borne in mind that the agricultural sector consumes energy directly through machinery, but also indirectly through the use of chemical fertilisers which use a great deal of energy to produce.

In fact, the excessive use of fertiliser, the use of artificial chemical phytosanitary products, overfishing and other practices have in many cases altered the natural function of ecosystems, putting the services they provide at risk, such as pollination and the decomposition of organic material to release nutrients back to plants.

We must therefore ensure the conditions needed to develop environmentally friendly production systems that protect biodiversity, and increase research and knowledge transfer to help reduce the use of environmentally damaging phytosanitary products and fertilisers.

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<sup>53</sup> Figures from the Catalan Irrigation Plan 2008-2020 (*pending approval*).

One example is organic farming, which has seen significant growth in Catalonia, in line with the rest of Europe. According to the latest figures available (2014), 120,865 hectares are devoted to organic farming in Catalonia, more than double the area in 2004 (56,368 hectares) and the number of farmers engaged in this type of farming has grown from 667 in 2004 to 2,119 in 2014.

The third key element in this target is the need to become more resilient to climate change [see [SDG #13](#)]. The climate forecasts published by the Meteorological Service of Catalonia<sup>54</sup> indicate that temperatures will increase, rainfall will be unpredictable and tending to decrease and there will be more extreme weather events, such as more frequent episodes of torrential rain. Measures to adapt to climate change in order to reduce its impact on food production will therefore be required<sup>55</sup>.

The risks associated with processes (TTIP, GlobalGAP standards) that tend to result in more uniform production and basic levels of quality, facilitate business concentration and affect production structures making it more difficult to offer more unusual products. This requires an increased commitment to environmental and sanitary quality and the fostering of innovative, sustainable agricultural practices.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Encourage the application of environmentally friendly agricultural practices that protect biodiversity and ensure the continuity of ecosystems and the services they provide.
- ❖ Use productive resources more efficiently: modernising irrigation systems, reducing the use of fertilisers and phytosanitary products, reducing direct and indirect energy use, etc.
- ❖ Improve the resilience of the Catalan food system, with measures for adapting to climate change.

**2.5** By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

The loss of genetic diversity in crops and animals represents the disappearance of an agrarian and cultural heritage that once lost will not be recoverable. It also means there will be fewer characteristics to choose from when selecting the best individuals for breeding from, in order to reflect needs that will undoubtedly change in the future. Whether we will have the best varieties and breeds adapted to conditions in the future depends on having a wide range of properties to choose from.

<sup>54</sup> [Projecte ESCAT](#). Meteorological Service of Catalonia, 2012.

<sup>55</sup> For this reason the Government of Catalonia drew up the 2013-2020 Catalan Strategy for adaptation to climate change (ESCAC) and a climate change law is currently going through Parliament.

In Catalonia, of a total of 15 recognised native breeds, some, such as the Ripollesa and Xisqueta sheep and the Bruna del Pirineus cow are viable and are raised on profitable farms. For others, however, such as the Pallaresa cattle, it is even doubtful if the breed can recover<sup>56</sup>.

It is necessary to develop programmes to preserve native species in order to increase their numbers and prevent extinction through systems that enable agricultural holdings with these animals to be economically viable. A major challenge will be limiting the impact of product standardisation rules imposed by the major distribution companies.

With regard to phylogenetic resources, as each region selects seeds in line with local conditions and tastes, there is great diversity. Although there are up to 21 bodies in Catalonia working in the field of crop biodiversity conservation and there are also 21 *ex-situ*<sup>57</sup> plant collections, there are still many varieties that have not been identified or collected in a seed bank. It is necessary, therefore, to encourage the identification and classification of traditional varieties throughout Catalonia, together with their conservation, use and commercialisation<sup>58</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Develop programmes to preserve native species through systems that enable agricultural holdings containing these animals to be economically viable.
- ❖ Protect Catalonia's phylogenetic resources by identifying and classifying its traditional varieties and storing them in gene banks and seed banks or using other *ex-situ* methods, as well as *in-situ* techniques, promoting their use and commercialisation.
- ❖ Establish mechanisms for limiting the impact of product standardisation rules imposed by the major distribution companies.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 2

The CADS considers that the main challenges facing Catalonia with respect to SDG 2 are to:

- ❖ Ensure access to healthy, nutritional and sufficient food throughout the year through reducing poverty, improving education and encouraging good eating habits. On the one hand, it is essential that people have sufficient economic resources to afford a decent diet and, on the other, efforts are required to reduce the number of people who are overweight, a problem with serious health repercussions.

<sup>56</sup> Source: Ministry of Agriculture, Livestock, Fisheries and Food.

<sup>57</sup> Source: Ministry of Agriculture, Livestock, Fisheries and Food.

<sup>58</sup> In 2013, therefore, the Ministry of Agriculture, Livestock, Fisheries and Food approved an *Action Plan for Crop Biodiversity* with the aim of fostering the recovery, conservation, use and commercialisation of local varieties in Catalonia and raising awareness about them. Since 2012 Catalonia has also had a Catalogue of local varieties, a public database featuring local varieties of agricultural interest in Catalonia, in which 16 varieties are currently registered.



- ❖ Maintain the basis of food production by protecting and restoring agricultural land, especially the most fertile, and encouraging new generations to remain in farming.
- ❖ Optimise the agricultural and economic productivity of the primary sector in Catalonia. This involves improving production and reducing the resources invested, i.e. using water, energy, fertilisers, etc. more efficiently.
- ❖ Encourage the application of environmentally friendly agricultural practices that protect biodiversity and ensure the continuity of ecosystems and the services they provide.
- ❖ Actively conserve traditional varieties and native species, encouraging their use and commercialisation so that they become economically viable, and establishing mechanisms for limiting the impact of product standardisation rules imposed by the major distribution companies.
- ❖ Improve the resilience of the Catalan food system, with measures for adapting to climate change.

### 3 ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

#### UNITED NATIONS 2030 AGENDA GOALS

- 3.1** By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.
- 3.2** By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.
- 3.3** By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.
- 3.4** By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.
- 3.5** Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.
- 3.6** By 2020, halve the number of global deaths and injuries from road traffic accidents.
- 3.7** By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.
- 3.8** Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.
- 3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.



## INTERNATIONAL CONTEXT

In 2012, an estimated 52% of all deaths under age 70 was due to non-communicable diseases (NCD), followed by communicable, maternal, neonatal and nutritional conditions (34%) and injuries (14%)<sup>59</sup>.

**Maternal mortality** continues to be the second most common cause of death among women of reproductive age, despite having fallen by 44% between 1990 and 2015 (well short of the 75% fall targeted by the Millennium Development Goals). Ninety-nine per cent of deaths in pregnancy or childbirth occur in developing countries: the mortality rate in these countries is 239 deaths per 100,000 births, compared to just 12 in developed countries. The situation is particularly grave in rural sub-Saharan Africa where half of such deaths occur, particularly affecting low-income adolescents.

The basic **neonatal mortality rate**, i.e. the number of babies dying before the age of 28 days, has fallen in recent years from 24.9 to 19.2 per 1,000 between 2006 and 2015. There is still a long way to go, however, to meet the 2030 Agenda target of 12<sup>60</sup>.

The probability of a child dying **before reaching the age of five** has dropped from 60 to 42<sup>61</sup> in every 1,000 births in the last decade. The 2030 Agenda target is to reduce this to 25. Four out of every five children that die before the age of five are in sub-Saharan Africa and Southern Asia.

According to figures from UNAIDS, the United Nations programme on **HIV/AIDS**<sup>62</sup>, at the end of 2014 there were 37 million people worldwide living with HIV, half of whom do not know they have the virus and 40% do not have access to treatment. New **HIV** infections have declined by 35% since the first half of the 1990s (when infections peaked) and deaths from AIDS have fallen by 42% since the peak in 2004 (WHO, 2015). These global reductions mask, however, alarming figures from Eastern European/Central Asian and North African/Middle Eastern blocs, where infections increased by 30% and 26%, respectively, and deaths tripled.

Currently, 7 out of 10 people with HIV live in sub-Saharan Africa, where AIDS is the main cause of death among adults, women of reproductive age (the largest group of victims globally) and children. Gender inequality and violence exacerbate the risk of women contracting HIV. Girls account for 75% of new infections among young people.

**Tuberculosis**, a treatable and curable disease, continues to be a major health problem around the world, especially in Africa and south east Asia. Prevention, diagnosis and treatment saved 37 million lives between 2000 and 2013, while between 1990 and 2013 the mortality rate for this disease fell by 45% and prevalence by 41%.

Nevertheless, there were still 1.5 million deaths in 2014 (400,000 corresponding to people infected with HIV) and 9.6 million new cases were recorded. It must be borne in mind, finally, that the impact of this disease goes far beyond the resulting deaths: a robust health system is necessary to detect carriers with accurate monitoring to ensure

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<sup>59</sup> [Health in 2015 from MDGs to SDGs. WHO, 2015.](#)

<sup>60</sup> [World Bank figures.](#)

<sup>61</sup> [World Bank figures.](#)

<sup>62</sup> [AIDS by the numbers. UNAIDS, 2015.](#)



treatment programmes are followed through (treatment takes one year, on average, and it is easy for sufferers to give up).

According to WHO<sup>63</sup>, almost half the world's population live in countries where there is a risk of contracting [malaria](#). Sub-Saharan Africa is particularly problematic, with 90% of deaths from this disease. Nevertheless, global incidence rates (new cases) fell by 37% and deaths by 60% (65% for children) between 2000 and 2015. It is estimated that there will be 214 million cases of malaria this year resulting in 438,000 deaths. Children under the age of five account for 70% of deaths.

The main causes of premature death (before the age of 70) are [non-communicable diseases \(NCD\)](#), although deaths from these causes have fallen by 15% between 2000 and 2012 (especially in richer countries). Cardiovascular diseases are the most significant cause of death, with 17.5 million deaths in 2012.

These are followed by cancer, and, although cancer deaths fell by 6% in this period, the rates vary greatly by region (with high levels in Europe) and gender. [Type 2 diabetes](#) accounts for 90% of cases of diabetes and is caused by excess weight and physical inactivity. In recent years the number of reported cases in children has increased.

[Mental health](#) represents a new global challenge, with 10% of the population estimated to suffer from a mental disorder during their lifetimes, and these disorders are estimated to be responsible for one fifth of years lived with disability<sup>64</sup>. The concept of mental disorder covers a wide spectrum of phenomena from bipolar, eating and childhood behavioural disorders to anxiety, depression and Alzheimer's and other dementias.

Anxiety and depression are the most common disorders, mainly in the 15-59 age range and affecting principally women. The mortality rate from suicide fell by 9% worldwide between 2000 and 2012, continued to be the cause of 804,000 deaths, with a significantly higher rate among European men. In 2014 there were 526 deaths by suicide in Catalonia (390 men and 136 women), a rate of 7.08 per 100,000 inhabitants (3.6 for women and 10.69 for men). Meanwhile, the number of people with some form of dementia (46 million in 2015) will double every 20 years as a consequence of the ageing of the global population.

Dementia, with higher incidence rates in rich countries, has become a major public health issue, affecting both the sufferers and their families, and is responsible for pushing costs up, mainly for health and other care. It must be borne in mind that, in much of the world, health cover for these illnesses is, in general terms, extremely precarious.

[Alcohol consumption](#) is the cause of 5.9% of deaths globally<sup>65</sup>, with the highest rates of dangerous drinking occurring in Eastern Europe and northern and central Asia.

Another major cause of death, especially among young people from 15 to 29.3 years (and more men than women), is [traffic accidents](#). The number of victims has increased by 23% since 2000, mainly due to a 90% increase in the number of vehicles in the same

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<sup>63</sup> [Malaria. WHO, 2016.](#)

<sup>64</sup> [Years Lived with Disability. WHO.](#)

<sup>65</sup> [Alcohol. WHO, 2015.](#)

period. Based on these trends, this will be the fifth most important cause of death globally by 2030 (in 2014 it ranked ninth), with a 47% increase in the number of victims.

**Air pollution** leads to 8 million deaths a year (4.3 million of them from indoor pollution and 3.7 million from outdoor pollution)<sup>66</sup>, the majority in developing countries and mainly in south east Asia and the western Pacific.

Although air quality has improved in Europe and North America, it has worsened in southern and eastern Asia, and in 2012 approximately three quarters of the world's population was exposed to levels of suspended particulates that exceed WHO limits.

Finally, the provision of **universal health coverage** (UHC) is the key SDG target for achieving all the other health target, provided it includes access to a quality health service and ensures financial protection for the population (WHO, 2015)<sup>67</sup>.

It should be noted that from 2000 to 2013 public spending per capita on health grew by approximately 40% in real terms, while private spending fell from 35% to 31% of total spending on health (42% in poorer countries). It should be borne in mind that every year 100 million people fall into poverty due to private healthcare expenses and 1.2 billion poor people are pushed into extreme poverty.

## EUROPEAN CONTEXT

Europeans are living increasingly longer, although on average 20%<sup>68</sup> of our lifespan is affected by health problems that impact our quality of life and put pressure on public health systems (which generated 15% of public spending in the EU, equivalent to approximately 10% of GDP).<sup>69</sup>

The European Union is the part of the world where the population is most likely to die of non-communicable diseases: in 2009 non-communicable chronic illnesses were the cause of 86% of all deaths in Europe<sup>70</sup>, a figure reinforced by WHO estimates<sup>71</sup> according to which 80% of deaths in the EU in that year were caused by cardiovascular diseases, cancer and obstructive pulmonary diseases.

Non-communicable diseases account for between 70% and 80% of all health spending in the EU. These conditions not only prevent many people from working, but they also affect almost a quarter (23.5%) of people in work. The resulting absenteeism costs the EU around 2.5% of its GDP<sup>72</sup>.

Many chronic conditions such as cardiovascular diseases and type 2 diabetes can be prevented by healthy lifestyles, while others, such as multiple sclerosis or dementia can be treated to help sufferers feel better and remain active longer.

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<sup>66</sup> [World Health Assembly, 2015.](#)

<sup>67</sup> [Health in 2015 from MDGs to SDGs. WHO, 2015.](#)

<sup>68</sup> [The EU explained: Public health.](#) European Commission.

<sup>69</sup> [Health Strategy.](#) European Commission.

<sup>70</sup> [http://ec.europa.eu/health/newsletter/169/focus\\_newsletter\\_es.htm](http://ec.europa.eu/health/newsletter/169/focus_newsletter_es.htm)

<sup>71</sup> [The European health report 2012: charting the way to well-being WHO, 2012.](#)

<sup>72</sup> [http://ec.europa.eu/health/newsletter/169/focus\\_newsletter\\_es.htm](http://ec.europa.eu/health/newsletter/169/focus_newsletter_es.htm)

Air pollution is the main environmental risk for health in the EU-28<sup>73</sup>: in 2013 the urban population exposed to PM<sub>10</sub> levels higher than the limits set by the EU ranged from 17% to 30, while 61-83% were exposed to concentrations exceeding the stricter WHO limit. The same applies to O<sub>3</sub>, with exposure rates ranging from 15% (EU rate) to 98% (WHO rate). Apart from these pollutants, others of special significance in the EU include PM<sub>2.5</sub>, NO<sub>2</sub> and benzo[a]pyrene.

It is estimated that approximately 1% to 3% of deaths from cardiorespiratory diseases in Europe and 2% to 5% of deaths from lung cancer are attributable to particulate matter (PM) and in 2010 annual PM<sub>2.5</sub> levels equated to 3.1 million deaths and around 3.1% of life expectancy adjusted for disability. Exposure to PM<sub>2.5</sub> reduces life expectancy by an average of 8.6 months.

Exposure to chemicals is one of the major environmental concerns in the European Union. Research suggests some chemicals have endocrine-disrupting properties and may have harmful effects on health and the environment and could affect children's development. There is also uncertainty with regard to the impact on human health and the environment of the combined effects of chemicals and nano materials<sup>74</sup>.

Water is essential for life. Our society and our economy need fresh water in sufficient quantities and of suitable quality in order to prosper and prevent potential health problems from its use and consumption. However, water resources around the world and in Europe are under increasing pressure. It is likely that half of the bodies of water in Europe do not meet the targets of the Water Framework Directive and will continue to have poor ecological status in 2015<sup>75</sup>.

According to WHO, in the European health region<sup>76</sup> deaths in traffic accidents fell by 25% between 2007 and 2010 despite a 6% increase in the number of registered vehicles. In absolute terms, 92,500 people died in traffic accidents in 2010, of which 75% were men and 50% aged between 15 and 44 years old. Traffic accidents were the most significant cause of death among young people aged between 15 and 29 years, followed by suicide.

The numbers of suicide deaths and self-inflicted injuries are declining. In 1994 the mortality rate from suicide was 19.8 per 100,000 people, this had fallen to 12.6 for the years 2010-2011. Despite this drop, the European region has the highest rate in the world.

People with serious mental illnesses such as psychosis, bipolar disorder or serious depression have a life expectancy of 20 to 30 years less than the general population. Poor physical health is responsible for 60% of premature deaths, especially from heart disease, diabetes and cancer<sup>77</sup>.

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<sup>73</sup> [Air quality in Europe, 2015.](#)

<sup>74</sup> [Decision 1386/2013/EU of the European Parliament and the Council of 20 November on a General Union Environment Action Programme to 2020.](#)

<sup>75</sup> [European waters assessment, 2012. EEA 8/2012.](#)

<sup>76</sup> [The European health report 2015. Targets and beyond – Reaching new frontiers in evidence. WHO, 2016.](#)

<sup>77</sup> The European Mental Health Action Plan. WHO, 2013.

The EU's health targets<sup>78</sup> centre on prevention, in particular through encouraging healthy lifestyles; on ensuring that everyone has the same access to good health and medical care (irrespective of income, gender, ethnicity, etc.); on tackling the major health threats facing more than one country in the EU; on keeping people healthy in old age (active ageing); and on developing responsive healthcare systems and new technologies.

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The life expectancy at birth of people born in Catalonia is one of the highest in the world. In 2013<sup>79</sup> life expectancy at birth was 86 years for women and 80 years for men<sup>80</sup>. The demographic pyramid reveals a process of accelerated ageing: while in 1981 the population aged 65 years or over accounted for 11.2% of the total, in 2014 this figure was 18.3.

However, Catalonia's figures for life expectancy with good health do not rank so highly: Catalan women have a life expectancy with good health of 69 years and men 67. In other words, Catalan women live on average for 17 years with poor health and men 13 years. It is therefore necessary to strengthen measures to promote active and healthy ageing in order to close the gap between the age of healthy living and life expectancy.

In 2014, 9.9% of the adult population needed help or support in order to carry out everyday activities. This loss of independence is more acute among older age groups, affecting 46.9% of women and 33.5% of men over the age of 75. These figures, together with demographic forecasts for Catalonia<sup>81</sup>, demonstrate the major challenge facing us with regard to the sustainability of the healthcare and social care system.

The main challenges for Catalonia with regard to this SDG are therefore detailed below, based on the 2030 Agenda targets.

### 3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.

In 2013 the maternal mortality rate was four deaths during pregnancy or childbirth for every 100,000 births<sup>82</sup>, much lower than the average of 12 in developed countries or the target of 70 set by the 2030 Agenda.

### 3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per

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<sup>78</sup> [EU Health Strategy.](#)

<sup>79</sup> [Mortality in Catalonia, 2013.](#)

<sup>80</sup> [Life expectancy. IDESCAT.](#)

<sup>81</sup> [Projeccions demogràfiques a Catalunya \(Demographic projections for Catalonia\) 2013-2051. IDESCAT.](#)

<sup>82</sup> [Anàlisi de la mortalitat a Catalunya \(Analysis of mortality in Catalonia\) 2013. Initial results. Ministry of Health.](#)

### 1,000 live births.

In Catalonia the neonatal mortality rate (i.e. the number of babies dying before the age of 28 days per 1,000 births) fell from 5.54 in 1986 to 1.79 in 2013. This figure is much lower than the worldwide average, which in 2013 was 20.3<sup>83</sup>. The figures for infant mortality (children dying before the age of five per 1,000 live births) fell in the same period from 9.25 to 3.17<sup>84</sup>.

Both these figures are much lower than the targets set in the 2030 Agenda and do not therefore constitute a challenge that Catalonia needs to focus on.

### 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.

The number of cases of tuberculosis in Catalonia remains higher than that reported in neighbouring industrialised countries (an average of 15.1 cases per 100,000 inhabitants in 2014)<sup>85</sup>. Nevertheless, it must be noted that the incidence of this disease in the native population was just 9.8 cases per 100,000 inhabitants, far lower than the 40.8 cases reported for the immigrant population.

The delay in diagnosing cases of **pulmonary tuberculosis** is very long: in 2014 on average diagnosis occurred two months after the appearance of the first symptoms, a much longer period than in 2013. The limited reduction in the number of cases of tuberculosis and the longer diagnosis period demonstrate the need to strengthen detection strategies, especially among older women and newly arrived immigrants, as well as people who have been in contact with patients.

It is estimated that at the end of 2014 there were 33,600 people living with **HIV** in Catalonia, 71% having been diagnosed as infected, of whom 91% were receiving retroviral treatment. Overall, there are 10.2 reported cases of HIV infection for every 100,000 inhabitants<sup>86</sup>, a figure which has been stable for the last five years.

Eight-eight per cent of cases are men and 12% women, with an average age of 36 years. Forty per cent of reported cases involve people born outside Spain. The most common cause of infection was sexual relations between men (51%), with a 74% increase between 2005 and 2014. The number of cases fell by 21% for heterosexual man and 29% for heterosexual women.

Although intravenous drug users (IDU) are a very small proportion of the population, they run a very high risk of contracting contagious diseases such as HIV and hepatitis C. It is therefore very important to continue strengthening measures for the prevention and

<sup>83</sup> <http://data.worldbank.org/indicator/SH.DYN.NMRT/countries?display=graph>

<sup>84</sup> [Indicadors de mortalitat \(Mortality indicators\). IDESCAT.](#)

<sup>85</sup> [La tuberculosi a Catalunya 2014. Butlletí epidemiològic de Catalunya no 9, September 2015.](#)

<sup>86</sup> [Vigilància epidemiològica de la infecció pel VIH i la SIDA a Catalunya. 2014 figures, updated at 30 June 2015.](#)

early detection of these diseases among drug users<sup>87</sup>, especially new users (IDU for less than five years), for whom infection rates are very high (20.6% for HIV and 59.4% for HCV)<sup>88</sup>.

Infectious diseases do not respect borders and are a clear example of how measures inside and outside the country are closely linked. The prevention and control of infectious diseases requires domestic action as well as proactive, rapid and meaningful responses to external threats such as the Ebola outbreak, and more recently the Zika virus.

Global change, including climate change, is behind the appearance of new illnesses, which are effectively existing diseases spreading to new regions. Climate change helps to spread the vectors (e.g. mosquitoes) that transmit these illnesses in their native settings.

The main challenges facing Catalonia with regard to this 2030 Agenda target are to:

- ❖ Improve the early prevention and detection of illnesses such as AIDS, as the percentage of late HIV diagnoses is very high (42% in 2012), although this has improved in recent years.
- ❖ Tackle the increase in the number of cases of syphilis and gonorrhoea in recent years, especially in men, and monitor tuberculosis carriers and sufferers more closely.
- ❖ Maintain and improve local monitoring and control of the transmission vectors of disease and of diagnosed cases.

### **3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.**

Mortality figures for Catalonia<sup>89</sup> show that most deaths occur between the ages of 85 and 89 for women and between 80 and 84 for men. The most common causes of death are non-communicable diseases, half of them disorders of the circulatory system or tumours. Tumours are the main cause of death for men (34.4%) while diseases of the circulatory system are the main cause of death for women (31.0%).

Lung cancer causes death in four times more men than women, and the mortality rate for Catalan men is 10-20% higher than the OECD average. Cancer of the colon and rectum is 20% more common in Catalan men than the OECD average<sup>90</sup>.

<sup>87</sup> [Folch C, Casabona J, Espelt A, Majó X, Meroño M, Gonzalez V, Wiessing L, Colom J, Brugal MT; REDAN Study Group. High Prevalence and Incidence of HIV and HCV Among New Injecting Drug Users With a Large Proportion of Migrants—Is Prevention Failing?](#)

<sup>88</sup> [ECDC-EMCDDA Prevention and control of infectious diseases among people who inject drugs. October 2011.](#)

<sup>89</sup> [Mortalitat a Catalunya \(Mortality in Catalonia\), 2013.](#)

<sup>90</sup> [Catalan Health System Observatory. The health of the population of Catalonia in the European context. Monogràfics de la Central de Resultats, no. 8. Barcelona: Agency for Health Quality and Assessment of Catalonia. Ministry of Health. Government of Catalonia; 2014.](#)



Excess weight (obese or overweight) is an issue for almost half (48%) of the population aged 18 to 74 years old<sup>91</sup>. This figure has remained stable between 2006 (48.7%) and 2014 (48.1%). 33.1% are overweight and 15.0% are obese. More men (40.4%) than women (25.7%) are overweight, while obesity rates are similar for both sexes (15.1% of men and 15.0% of women). The percentage of people with excess weight increases with age, among the most disadvantaged social classes and people with only primary or no education.

Excess weight affects 30.4% of children aged from 6 to 12 years old (32.2% of boys and 28.6% of girls): the same proportions of boys and girls are overweight (18.7%) but more boys (13.5%) are obese than girls (9.9%). Obesity is most prevalent among the most disadvantaged classes and among children whose mothers have only primary education or less. However, excess weight is more prevalent in the middle classes and among children whose mothers completed secondary education.

Although 68% of people aged between 15 to 69 years partake in some form of healthy physical activity, this fell from 74% to 70% for men and from 69% to 65% for women between 2011 and 2014<sup>92</sup>. A total of 22.2% of the population engage in sedentary leisure pursuits (2 or more hours of television viewing per day).

Sedentary lifestyles among children (3-14 year olds) are most prevalent among the most disadvantaged classes and where the mother has a low level of education. On the contrary, among adults the rates are highest among the upper social classes and people with university students, according to the 2014 Catalan Health Survey (ECSA). Overall, however, sedentary lifestyles are becoming more prevalent among both men and women.

Only 11% of the population eats the recommended 5 pieces of fruit and vegetables per day, with the lowest rates reported for children (4.9%). The most well-off classes and people with university education have the best eating habits.

Adopting a healthier lifestyle involves eating better, with more fruit and vegetables, physical exercise (with walking playing a major role) and above all combating sedentary tendencies, especially among children.

In 2014, 8.5% of over 15 year olds suffered from a mental disorder, the lowest rate since 1994, when the rate was 12.4% (increasing to 14.1% in 2010) (ESCA, 2014). There is, however, a significant difference between men (6.5%) and women (10.5%), and a higher prevalence among older people (a growing demographic according to available forecasts), people from lower social classes and with lower levels of education.

The risk of suffering from a mental disorder is greater for people who live alone. This figure is significant given that the number of single-person households as a percentage of total households in Catalonia has increased significantly from 9.8% in 1981 to 23.3% in 2011<sup>93</sup>. Another major factor is the economic recession affecting the country: the unemployed are twice as likely to suffer from mental health problems as people in work.

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<sup>91</sup> [Catalan Health Survey 2014. Ministry of Health, ECSA, 2014.](#)

<sup>92</sup> [Catalan Health Plan 2016-2020 \(draft\).](#)

<sup>93</sup> [Single person households in Catalonia. IDESCAT.](#)

On a scale from 14 to 70 points, the average level of mental well-being for Catalans over the age of 15 years is 59.0 points (SD 8.46): 59.8 (SD 8.02) for men and 58.3 (SD 8.80) for women (ESCA, 2014).

In Spain, suicide is the second most common cause of death among young adults<sup>94</sup>. The suicide rate has been rising since 2007 and in 2013 was at similar levels to those at the start of the twenty-first century. A large part of this increase was concentrated in the 40 to 60 age range. Men account for three out of every four suicide deaths<sup>95</sup>.

Although the suicide rate in Catalonia is much lower than for Europe as a whole, such deaths are avoidable and require policies and measures aimed at protecting and promoting mental health and preventing suicide.

**Tobacco** consumption is declining in Catalonia: in 2006 29.4% of the population were smokers, by 2014 that figure had fallen to 25.9%. According to the Catalan Health Survey (ESCA), in 2014 25.9% of people over the age of 15 smoked every day or occasionally (31.8% of men and 20.3% of women).

Compared with other European countries, the number of smokers in Catalonia is relatively high, ranking higher than Germany, Italy and Greece, but lower than France and the UK. Men smoke more than women and the unemployed smoke more than people in work.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Encourage increased monitoring of excess weight in order to reduce the prevalence of non-communicable diseases, paying particular attention to children and young people.
- ❖ Strengthen measures to promote good mental health in vulnerable people (children and young people on the poverty line, unemployed people over the age of 45, the elderly).
- ❖ Establish active policies to tackle suicide rates as set out in the *Mental Health Action Plan* and the suicide risk code, aimed at reducing suicide attempts, encouraging people who have suicidal thoughts to seek help and reducing the number of deaths.
- ❖ Implement the measures proposed in the framework agreement on preventing smoking.

### **3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.**

The percentage of people over the age of 15 who consume harmful quantities of alcohol remained stable between 2006 and 2014 at 4.5%, affecting more men (7.3%) than women (1.7%). Consumption is lowest among the better-off classes and people with university education. The harmful consumption of alcohol is also influenced by people's

<sup>94</sup> [Pla Interdepartamental de Salut Pública de Catalunya \(PINSAP\).](#)

<sup>95</sup> [Efectes de la crisi econòmica en la salut de la població de Catalunya. Catalan Health System Observatory, 2015.](#)



work situation: in 2013-2014 it was more prevalent among unemployed people than people in work. Women are less likely to abuse alcohol than men across all groups.

The number of people entering treatment has increased over recent years to 6,445 in 2014, representing 46.17% of the people attending centres for drug dependence care and follow-up (CAS).

The percentage of people treated with **psychotropic drugs** (anti-psychotics, anti-anxiety agents, sleeping pills, sedatives and anti-depressants) has remained stable between 2007 and 2014 at around 23%. There are differences between age groups: consumption has increased among people aged 15 to 44 years (16.7%) and has fallen among the over 65s (14.4%).

Catalonia has high rates of consumption of psychotropic drugs, much higher than other European countries such as the UK, Germany and the Netherlands. This high level of consumption is not necessarily indicative of worse mental health.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Strengthen preventive programmes based on the early identification of problems and brief interventions for alcohol and other drug problems via primary health care facilities, the social care system (A Primera Línia), hospitals (Beveu Menys, ASSIST, etc.) and workplace health care structures, focusing particularly on high-risk groups (sufferers of chronic illnesses, children and young people from deprived backgrounds, pregnant women, workers who pose a risk to third parties, etc.).
- ❖ To develop selective prevention measures for high risk groups who are more vulnerable to harm from consumption (children and young people with socially deprived backgrounds).

### **3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents.**

In 2015 there were 261 road traffic deaths in Catalonia, a 13.5% increase from 2014. Sixty-seven per cent (176) of these deaths occurred on interurban highways and 33% (85) in urban areas.

Although there was a 13.5% increase between 2014 and 2015, the total mortality rate fell by 28.5% on interurban highways and by 8.6% in urban areas between 2010 and 2015. The greatest number of road deaths occur between Monday and Thursday for both interurban and urban areas.

On interurban highways the most common cause was driver distraction (31.8% in 2015). By age group, 49.7% of victims were under the age of 34 in 2005, down to 33.7% in 2015. On the other hand people over the age of 64 accounted for 10.7% of victims in 2005 and 15.6% in 2015. In 2015 the 35-64 age group accounted for the greatest proportion of victims, at 50% of the total (39.6% in 2005).

On urban roads, for the greatest number of deaths involved motorcyclists, followed by pedestrians. Although bicycles were only involved in 5.9% of fatal accidents in 2015, the number of deaths increased by 30.61% between 2010 and 2015.<sup>96</sup>

By age group, 57.8% of victims were under the age of 34 in 2005, down to 35.6% in 2015. On the other hand people over the age of 64 accounted for 14.7% of victims in 2005 and 18.8% in 2015. In 2015 the 35-64 age group accounted for the greatest proportion of victims, at 44.1% of the total (27.4% in 2005).

One third of drivers killed in traffic accidents had consumed alcohol or drugs. Between 2014 and 2015 there was a 36% increase in the number of serious and fatal accidents at night, generally associated with the consumption of alcohol or drugs<sup>97</sup>.

The main challenge facing Catalonia with regard to this 2030 Agenda target is to:

- ❖ Reduce relapse rates in cases of alcohol and drug abuse.

**3.7** By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.

Between 2007 and 2014 the number of pregnancies fell by 8% and the number of births by 7.3%. In the same period the number of voluntary terminations fell by 11%. Between 2007 and 2014 teenage pregnancies fell by 35.6%, and the number of abortions also fell for this age group<sup>98</sup>.

**SDG #5** on achieving gender equality draws attention to the fact that, the European Barometer of Women's Access to Modern Contraceptive Choice<sup>99</sup>, published in January 2015, failed Spain for its lack of sex education programmes in schools and the unequal treatment suffered by young women in obtaining access to contraceptives in some autonomous communities. This barometer notes that in certain autonomous communities, including Catalonia, there are specialist sexual and reproductive health centres.

The main challenge facing Catalonia with regard to this 2030 Agenda target is to:

- ❖ Implement intensive campaigns to promote sexual and reproductive health education and train professionals in this field.

**3.8** Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

<sup>96</sup> [Anuari estadístic d'accidents de trànsit a Catalunya 2015](#). Servei Català de Trànsit, Ministry of Home Affairs.

<sup>97</sup> [Dades trànsit \(traffic figures\) 2015](#).

<sup>98</sup> [Efectes de la crisi econòmica en la salut de la població de Catalunya \(Observatory on the effects of the crisis on the health of the population\)](#). Catalan Health System Observatory, 2015.

<sup>99</sup> [International Planned Parenthood Federation Network](#).

The unequal way in which society is organised means that people's chances for advancing in life and enjoying good health are unfairly distributed within and between societies. Poverty and social exclusion have a negative effect on quality of life and increase the risk of suffering many illnesses.

Universal public health cover is a mechanism for reducing inequality for the most vulnerable sections of society. The Catalan public health system covers approximately 98% of the population, peaking at 99.65% in 2007 and decreasing slightly to 98.22% in 2013<sup>100</sup>. In general women have greater cover than men (a difference of 0.5%) although this trend changed after 2011 and women's cover compared to men's has been declining since then.

The health system's role in cushioning the population from the effects of the recession depends on universal cover, adequate spending, low co-payments and waived co-payments for people with very low incomes, and on prioritising the most cost effective services. In 2012 the Spanish Government abolished health cover for foreigners who are not legal residents in Spain<sup>101</sup>. Catalonia is currently enacting a law on universal health cover.

In order to protect the most vulnerable sections of society from the effects of these changes, the Catalan Health Service assumes 90% of medication costs for chronic illnesses (affecting 4% of the population), compulsory vaccinations and certain screening programmes.

A review of health spending (public and private) in 2010 shows that Catalonia, together with Greece and Ireland, were the countries in this region with the lowest levels of public health spending as a proportion of GDP (6%) and the highest levels of private spending (3% of GDP). In Denmark the proportion of public to private spending was 9.3% to 1.6%<sup>102</sup>. These low levels of spending were further reduced due to cyclical shock measures and structural reforms implemented mainly in 2011 to 2013<sup>103</sup>.

The main challenge facing Catalonia with regard to this 2030 Agenda target is to:

- ❖ [Guarantee universal access to a quality, effective health service to protect people from the financial risks resulting from out-of-pocket expenditure on health and well-being.](#)

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<sup>100</sup> Own figures based on Health statistics and population estimates.

<sup>101</sup> *Royal Decree Law 16/2012, of 20 April, on urgent measures to guarantee the sustainability of the National Health System and improve the quality and safety of its services.*

<sup>102</sup> [Catalan Health System Observatory. The health of the population of Catalonia in the European context. Monogràfics de la Central de Resultats, no. 8. Barcelona: Agency for Health Quality and Assessment of Catalonia. Ministry of Health. Government of Catalonia; 2014.](#)

<sup>103</sup> [Efectes de la crisi econòmica en la salut de la població de Catalunya \(Observatory on the effects of the crisis on the health of the population\). Catalan Health System Observatory, 2015.](#)

**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

**Air pollution** is one of the most serious environmental risks to health leading to 8 million deaths per year (4.3 million of them from indoor pollution and 3.7 million from pollution)<sup>104</sup>.

The pollutants that give most cause for concern in built-up areas are particulate matter (PM) and nitrogen oxides (NO<sub>x</sub>). The presence of tropospheric ozone (O<sub>3</sub>) also poses health risks as levels may be very high in various parts of the region, often rural, due to emissions of ozone precursors from areas of high concentration. Nitrogen oxides, emitted mainly by diesel vehicles, are NO<sub>2</sub> precursors and also push up PM levels.

The Centre for Research in Environmental Epidemiology (CREAL) estimates that reducing emissions in the Barcelona metropolitan area would produce a wide range of health benefits for the inhabitants of this area. Specifically, these refer to the annual benefits of reducing average exposure to PM<sub>10</sub> estimated for the 57 municipalities in the Barcelona metropolitan area (50 µg/m<sup>3</sup>) to the average recommended by the World Health Organization (20 µg/m<sup>3</sup>).

It is estimated that this improvement would result in 3,500 fewer deaths (or an increase in life expectancy of 14 months for every citizen), 1,800 fewer hospital admissions for cardiorespiratory problems, 5,100 fewer cases of chronic bronchitis in adults, 31,100 fewer cases of acute bronchitis in children and 54,000 fewer asthma attacks in children and adults. In economic terms the savings are estimated at an average of 6.4 billion euros per year<sup>105</sup>.

The issue of air quality is a clear example of how 80% of health problems have causes that fall outside the health system. A clear commitment is required to reduce traffic levels in cities and to impute the externalities of private vehicles to the impact on health. Improving the air quality in cities is directly linked to reducing the number of vehicles. Barcelona has extremely high traffic density (6,100 vehicles/km<sup>2</sup>), much higher than the average of 1,500 vehicles/km<sup>2</sup> for European cities<sup>106</sup>.

The challenges facing Catalonia with regard to this 2030 Agenda target are to:

- ❖ Reduce pollution levels to the limits established by the World Health Organisation, which are much lower than those established in European regulations, e.g. for PMs the limit established by the EU is double that set by WHO<sup>107</sup>.

<sup>104</sup> [World Health Assembly, 2015.](#)

<sup>105</sup> *Laura Pérez, Jordi Sunyer and Nino Kunzi.* Estimating the health and economic benefits associated with reducing air pollution in the Barcelona metropolitan area (Spain). *Gaceta Sanitaria* 2009;23(4):287–294.

<sup>106</sup> [Querol, X. et al. Bases científico técnicas para un plan nacional de mejora de la calidad del aire. CSIC, 2012.](#)

<sup>107</sup> [Air quality in Europe 2015. EEA 5/2015.](#)

- ❖ Ensure a non-toxic environment. This involves the effective monitoring of exposure to chemicals and chemical combinations and of the safety issues affecting products with endocrine-disrupting properties in order to minimise the risks to health and the environment, especially with regard to children. It is also vital to ensure that insecticides are used sustainably and the safety issues linked to nanomaterials are adequately supervised<sup>108</sup>.
- ❖ Increase efforts to implement the Water Framework Directive and the Directive on the quality of water intended for human consumption in order to reduce people's exposure to potential contaminants.
- ❖ To ensure compliance with REACH regulations<sup>109</sup>.

### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 3

The CADS considers that the main challenges facing Catalonia with respect to SDG 3 are to:

- ❖ Incorporate health issues into all policies and to propose an inter-ministerial public health plan, on the basis that health is affected by wide range of factors, many of them outside the scope of health system.
- ❖ Guarantee universal access to a quality, effective health service to protect people from the financial risks resulting from out-of-pocket expenditure on health and well-being.
- ❖ Encourage healthy lifestyles and, in particular, active ageing habits to keep people healthy in old age.

<sup>108</sup> [Decision 1386/2013/EU of the European Parliament and the Council of 20 November on a General Union Environment Action Programme to 2020.](#)

<sup>109</sup> [Regulation \(EC\) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals \(REACH\), establishing a European Chemicals Agency.](#)



## **4 ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL**

### **UNITED NATIONS 2030 AGENDA GOALS**

- 4.1** By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.
- 4.2** By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.
- 4.3** By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.
- 4.4** By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- 4.5** By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.
- 4.6** By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.
- 4.7** By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.



## INTERNATIONAL CONTEXT

According to UNESCO figures<sup>110</sup>, in 2013 92% of boys and 90% of girls of school age around the world attended primary school. Nevertheless, around 60 million children received no schooling, half of those living in areas of conflict.

With regard to secondary education, worldwide attendance levels drop to 66%, and for tertiary education (higher education and universities) to 32.9%. The figure for preschool education is 54%, according to figures from UNESCO.

85.2% of over 15-year-olds around the world are literate (2010 figures)<sup>111</sup>. The youngest cohorts have the highest levels of literacy (an average of 90.6% for the 15 to 24 age band), but differences persist between girls (88.5%) and boys (92.5%). This means that 103 million young people around the world are considered to be illiterate (they don't know how to read, write or do basic arithmetic), and more than 60% of these are women<sup>112</sup>.

There is extreme inequality in access to education both between countries and within social groups within the same country. For example, in sub-Saharan Africa children from rich families are four times more likely to go to school than children from poor families<sup>113</sup>. There are also stark differences between urban and rural areas.

With regard to the quality of education, at the 2015 UNESCO World Education Forum it was highlighted that a good education must favour the development of basic skills (literacy and numeracy), analytical and problem-solving skills and other cognitive and noncognitive (emotional, interpersonal and social) skills 'that enable citizens to lead healthy and fulfilled lives, make informed decisions, and respond to local and global challenges through education for sustainable development and global citizenship education'<sup>114</sup>.

The 2016 global education monitoring report<sup>115</sup> published by UNESCO to assess progress on the implementation of the 2030 Agenda in the area of education warns that the world will be 50 years late in achieving its global education commitments. The report calls for a break with the traditional model of education and a complete rethinking of current educational policies.

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<sup>110</sup> <http://wdi.worldbank.org/table/2.11>

<sup>111</sup> <http://datos.bancomundial.org/tema/educacion?display=graph>

<sup>112</sup> <http://www.un.org/sustainabledevelopment/education/>

<sup>113</sup> <http://www.undp.org/content/undp/en/home/sdgooverview/post-2015-development-agenda/goal-4.html>

<sup>114</sup> [World education forum 2015 UNESCO.](#)

<sup>115</sup> [2016 Global Education Monitoring Report UNESCO.](#)

## EUROPEAN CONTEXT

In the European Union, 97.3% of children attend primary school, 91.7% complete secondary education and 66.2% complete tertiary education. 93.9% of children receive preschool education.<sup>116</sup>

The European 2020 Strategy established two main objectives for education<sup>117</sup>:

- a) The first is that at least 40% of 30-34-year-olds in the EU should have completed tertiary education by 2020. In 2014 the European average was 37.9%, with the highest levels in Lithuania (53.3%) and the lowest in Italy (23.9%).
- b) The second target is to reduce the share of early leavers from education and training, defined as the percentage of the population aged 18-24 with at most lower secondary education and who are not in further education or training. The European average has reduced gradually over recent years to 11.1% in 2014. The 2020 Goal is to bring this figure below 10%. It should be noted that Spain has the highest levels in Europe (21.9%) while the lowest levels are found in Croatia (2.7%).

The European Union has other goals for 2020 with regard to education, such as<sup>118</sup>:

- To ensure 95% children aged 4 to the age of compulsory primary education are participating in education (currently 93.9%);
- To reduce the share of 15 year-olds with insufficient abilities in reading, mathematics and science to below 15% (currently 19.6%, 22.2% and 17.7%, respectively);
- To increase the share of employed 20 to 34 year-olds having successfully completed higher studies in the three years preceding the survey to 82% (currently 76.1%).
- To increase the share of 25 to 64 year-olds in education to 15% (currently 10.7%).

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are therefore detailed below, structured in line with the 2030 Agenda targets.

**4.1** By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.

In Catalonia primary (from 6 to 12 years) and secondary education (from 12 to 16 years) is compulsory, universal and free. School attendance levels are therefore very high, almost 100%.

<sup>116</sup> [UNESCO figures published by the World Bank.](#)

<sup>117</sup> [Eurostat figures.](#)

<sup>118</sup> [European Commission. Education and Training Monitor 2015.](#)

The number of children required to repeat years in primary education is traditionally very low, no more than 1.5% in the 2009-2010 academic year<sup>119</sup>, but increase in the compulsory secondary education (ESO) stage: in 2012-2013 an average of 6.5% of students repeated one of the first three years of ESO).

These figures suggest there is a problem with the early detection of learning difficulties, which become more difficult to overcome once children have moved up to secondary education. International researchers<sup>120</sup> agree that repeating years is an expensive measure that does not usually resolve learning problems and tends to encourage children to leave education early. Efforts are therefore required to detect poor skills as soon as possible and to apply personalised mentoring and support measures to ensure said skills are acquired.

With respect to early leavers from education, the ESO graduation rate has improved, up by over 12 percentage points between the 2002-2003 academic year (74.1%) and 2012-2013 (86.5%). Although this performance is not systematic, since the 2009-2010 academic year the ESO graduation rate has been over 80% and the trend suggests it will continue to improve<sup>121</sup>.

Despite this performance, according to the 2013 annual report by the Jaume Bofill Foundation on the state of education in Catalonia<sup>122</sup>, it ranked fourteenth out of seventeen autonomous communities in 2010-2011 for ESO graduation levels.

With regard to results, the competency tests carried out in the fourth year of ESO in 2012-2013 showed that more students attained high or medium to high grades than low or low to medium grades in the subjects assessed. This gap is wider for Catalan and Spanish language, at around 70%, and narrower for mathematics and English, at 60%<sup>123</sup>.

With regard to access to free compulsory primary and secondary education, it must be noted that, although tuition is nominally free, in fact substantial expenses are involved (books, school meals, activities, etc.), which not all families can afford. Furthermore, education spending as a proportion of GDP in Catalonia is below the EU and OECD average<sup>124</sup>. Increasing investment in education is therefore one of the challenges for Catalonia with regard to this goal.

With regard to the equity of the system, family background is observed to have an effect on performance. A report on equity and educational results in Catalonia based on the 2012 PISA survey by the Jaume Bofill Foundation concluded that social and cultural

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<sup>119</sup> [Sistema d'Indicadors d'Ensenyament de Catalunya. Education System Evaluation Council.](#)

<sup>120</sup> [Equity and quality in education. OECD.](#)

<sup>121</sup> [Sistema d'Indicadors d'Ensenyament de Catalunya \(Catalan Teaching Indicators System\). Education System Evaluation Council.](#)

<sup>122</sup> [L'estat de l'educació a Catalunya. Anuari 2013. Jaume Bofill Foundation.](#)

<sup>123</sup> [Anàlisi del rendiment acadèmic a l'ensenyament obligatori de Catalunya. Education System Evaluation Council.](#)

<sup>124</sup> [Sistema d'Indicadors d'Ensenyament de Catalunya \(Catalan Teaching Indicators System\). Education System Evaluation Council.](#)

status affected results by 23% more in 2012 than in 2003. According to this report, students from lower socio-economic classes are six times more likely to fail at school.

It is therefore necessary to make education more equitable and establish specific measures aimed at students from disadvantaged backgrounds, tackle the causes of structural inequality, such as segregated schooling, improve specific programmes to support students from immigrant backgrounds and collect more data on educational equality as well as encouraging research and assessment.

Finally we must ensure that the education received during the years of compulsory schooling is of good quality, defined as meaningful and relevant learning according to the UNESCO report 'Rethinking education'<sup>125</sup> (2015). This report identifies the need to 'revisit the purpose of education and the organization of learning' via 'a holistic approach to education and learning that overcomes the traditional dichotomies between cognitive, emotional and ethical aspects' and warns of the risk of focusing on the results of educational processes rather than the process of learning, leading us 'to neglect a much wider spectrum of results of learning, involving knowledge, skills, values and attitudes'.

Attention should be drawn to a pioneering programme developed in Catalonia, Escolanova21<sup>126</sup>, intended to systematise an advanced educational framework based on four interdependent vectors for change:

- a) Education centred on developing skills for life.
- b) Learning practices based on an understanding of how people learn.
- c) Assessment mechanisms designed to measure the development of cognitive physical social and emotional skills.
- d) A versatile organisational structure that allows schools to update their educational programmes.

Drawing on the experiences of 26 Catalan schools that have already implemented advanced educational practices, this programme will provide support to 200 educational centres to initiate change and move towards the new system.

The challenges facing Catalonia with regard to this 2030 Agenda target are to:

- ❖ Strengthen the early detection of learning difficulties and apply personalised mentoring and support mechanisms.
- ❖ Ensure the education system is equitable through specific measures targeted at the most disadvantaged students.
- ❖ Tackle issues of structural inequality such as educational segregation.
- ❖ Promote the collection of data on educational inequality together with research and analysis.

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<sup>125</sup> [Rethinking education. UNESCO \(2015\).](#)

<sup>126</sup> <http://www.escolanova21.cat/>

- ❖ Guarantee the quality of compulsory education through a holistic approach to learning.
- ❖ Increase investment in education.

**4.2** By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.

In Catalonia infant education from the ages of 0 to 6 is not compulsory. Infant education is organised in two cycles, the first from 0 to 3 years and the second from 3 to 6 years. In accordance with *Law 12/2009, of 10 July, on Education in Catalonia*, only after the age of three is universal, free education available for all children.

**First cycle infant education**, provided in kindergartens or nursery schools, is not automatically free and provision is not universal. According to the Report published by the Catalan Ombudsman (Síndic de Greuges) on equal opportunities in pre-school education (2015)<sup>127</sup>, access to this stage of education is subject to social and regional inequalities.

The Ombudsman's report notes that pre-school education is more accessible for families of higher social status, and is thus linked to social inequality. Children from disadvantaged backgrounds, who could benefit most from the potential of pre-school education to offset inequality, are those who least receive it.

For example, children from 0 to 2 years old whose parents have only primary education or less are half as likely to attend nursery school as those whose parents completed university studies. Immigrant children are particularly affected: although 19.8% of children aged 0 to 4 years old living in Catalonia are of foreign nationalities, they account for only 4% of children enrolled in pre-school education.

According to the Ombudsman's report, this social inequality has multiple causes. Some are socio-economic. Some families' income is not sufficient to pay for nursery schooling. Others are cultural and relate to parents' perceptions of pre-school education as a necessary step in a child's development.

Across Catalonia wide gaps are observed in the provision of pre-school education between municipalities. Although some municipalities had pre-school attendance rates of over 50% in the 2013-2014 academic year (Berga, Sant Just Desvern, Sant Sadurní d'Anoia, Vilassar de Mar and Sant Andreu de Llavaneres), there were others where the rate was below 20% (Salt, Santa Coloma de Gramanet, Sant Pere de Ribes, Montornès del Vallès, Ripollet and Lloret de Mar).

According to the Ombudsman's report, this geographical inequality is due to variances in income levels and unemployment rates, affecting the development of the private sector. Policy factors also affect the provision of public sector infant education. The report highlights the lack of public nursery places in some municipalities, although this has

<sup>127</sup> [Informe sobre la igualtat d'oportunitats a l'educació infantil \(0-3 anys\). Catalan Ombudsman.](#)

improved significantly over the last decade. In the city of Barcelona, for example, public nursery schools met just 55.1% of the demand for places in the 2013-2014 academic year.

Education from 0-3 years is particularly important for children from disadvantaged backgrounds or families with poor cultural capital, as it acts as a mechanism for reducing performance gaps at later stages. It is therefore necessary to ensure that children from the most disadvantaged backgrounds have priority access to these educational services.

It should also be borne in mind, however, that policies for early childhood intervention and care are not only based on pre- and nursery school provision, but also on other children's services and socio-occupational and family policies in general (parental leave, flexible workplaces, etc.). However, having reviewed other countries' policies, the Ombudsman's report argues that Catalan policy is highly focused on schooling, to the detriment of other areas.

In Catalonia [second-cycle infant education](#) is voluntary, but, unlike the first cycle, it is free and universal. 97% of 3 to 5 years old attend school<sup>128</sup>, higher than both the European average (91.8%) and the European target for 2020 of 95%<sup>129</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ [Ensure children from disadvantaged backgrounds or families with poor cultural capital are given priority in accessing education for 0 to 3 year olds.](#)
- ❖ [Provide sufficient, accessible children's services for children up to the age of 3.](#)

#### **4.3** [By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.](#)

The situation in Catalonia after the age of compulsory education is highly polarised. On the one hand, Catalonia has one of the highest rates of early leavers from education in Europe (although this has improved in recent years). On the other hand, 43.1%<sup>130</sup> of people from 30 to 34 years old have completed higher education, exceeding the target of 40% of young people with higher education set by the European 2020 Strategy.

According to IDESCAT figures, in 2015 18.9% of 18 to 24 year-olds have left the education system with no post-compulsory educational qualifications, a much higher figure than the European Union average (11.1% in 2014) and far from the European 2020 target of 10%. Nevertheless, the progress made over recent years should be highlighted (a drop of 14 percentage points since 2008).

The proportion of people in Catalonia with tertiary qualification (32.5%) is slightly higher than the European average (26.8%). Catalonia does not, therefore, have a problem of

<sup>128</sup> [Sistema d'Indicadors d'Ensenyament de Catalunya \(Catalan Teaching Indicators System\). Education System Evaluation Council.](#)

<sup>129</sup> [L'estat de l'educació a Catalunya. Anuari 2013. Jaume Bofill Foundation.](#)

<sup>130</sup> [IDESCAT 2015.](#)

overqualification, or too many people with tertiary education. The main anomaly is the large number of people with low qualifications (44.6%), resulting in a shortage of workers with intermediate-level qualifications (22.9%)<sup>131</sup>.

In Catalonia the proportion of people in vocational training in relation to those studying for academic qualifications is no lower than in neighbouring countries. They represent 46.8% of students in higher secondary education, compared to the European average of 49.9%. Vocational training is also the fastest growing area of adult education in the last decade, including advanced-level training cycles.

Catalonia's challenge with regard to this target is to tackle its high levels of early leavers from education via an educational system that retains young people by offering them second chances to re-enter the system and supporting their pathways, accrediting skills and helping them to continue in education. This requires raising awareness of the fact that every young person left outside the education system represents a failure for Catalonia.

We need, therefore, an ambitious agenda for universalising upper secondary education, providing better support and mentoring for young people (addressing not only the cognitive aspects of learning but also motivation and attitudes), as well as a better system of educational grants and subsidies.

The main challenges facing Catalonia with regard to this 2030 Agenda target are to:

- ❖ To ensure the universal completion of upper secondary education.
- ❖ To provide integrated support and mentoring for young people to prevent them leaving education early.

#### **4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.**

Catalonia needs to overcome the inertia of a model based on the transfer of information that is overly widespread in its educational system, and move towards skills-based learning which measures all the skills acquired, not just the short-term memorising of facts. The education system must impart the skills needed for a changing world that demands adaptable, fast learners, teamwork, the management of information, critical thinking, communication and problem-solving skills.

The level of skills among older people in Catalonia is low. Younger people have benefited from the expansion of education and most have attained acceptable levels of skills. Previous generations, however, did not have such easy access to education and efforts are required to remedy this. It should be noted, however, that at present there are no mechanisms for measuring and analysing basic skills after the stages of compulsory education.

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<sup>131</sup> [Els reptes de la Formació Professional a Catalunya. Jaume Bofill Foundation.](#)



Catalonia is one of the lowest ranking countries in Europe for lifelong learning and below the average for Spain. In 2015 just 7.6%<sup>132</sup> of the population of Catalonia between the ages of 25 and 64 were in education (9.7% in Spain and 10.7% in Europe), falling far short of the European target for 2020 of 15%. Catalonia's performance in this area has also declined since 2010, when 10.3% of this age group were in education.

The vocational training system fails to compensate for educational exclusion, in fact it reproduces it. Young people, and adults over the age of 55 are least likely to access this type of education. People with low qualifications are also those least likely to access vocational training while those with higher levels of education take greater advantage of it. It is therefore necessary to ensure that those who most need it (low-skilled adults, workers on temporary contracts, young people who missed schooling, etc.) have access to vocational training.

Catalonia needs to incentivise lifelong learning and training. Training at the start of our careers is not sufficient in a changing world. Some of the highest-performing countries according to the adult skills survey carried out by the OECD Programme for the International Assessment of Adult Competencies (Finland, Japan, Denmark and Norway) combine high-quality initial training systems with training policies for the adult population, both in and out of work<sup>133</sup>.

Finally, a significant proportion of people are in jobs for which they consider themselves to be overskilled or overqualified. The Catalan job market needs to be encouraged to generate jobs that capitalise on existing talent.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Foster the learning of skills for a changing world that demands adaptable, fast learners, teamwork, the management of information, critical thinking, communication and problem-solving skills.
- ❖ Encourage older people to improve their skills.
- ❖ Guarantee and foster access to training for employment for those most in need.
- ❖ Incentivise lifelong learning and training.
- ❖ Encourage the creation of jobs for qualified people in order to capitalise on existing talent.

**4.5** By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.

With regard to the [issue of gender \[see SDG #5\]](#), there has traditionally been a significant gap in educational outcomes for boys and girls. During times of economic prosperity and the boom in the construction industry, men had greater incentives to

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<sup>132</sup> [IDESCAT 2015](#).

<sup>133</sup> [L'enquesta sobre les competències de la població adulta de l'OCDE. Jaume Bofill Foundation](#).

leave the education system and enter a labour market where there was high demand for unskilled labour<sup>134</sup>.

The recent economic crisis has had the effect of reversing this trend and encouraging men to remain in the education system. Although progress has been uneven, the number of men leaving the education system early has fallen from 39.8% in 2008 to 21.8% in 2015. The rate for girls has always been lower, but this too has decreased, from 25.7% in 2008 to 15.8% in 2015<sup>135</sup>.

The results of the 2012 PISA survey also revealed gender differences in the skills assessed. Catalan girls, on average, obtained lower scores than boys for mathematics and sciences (22 and 12 points less, respectively). On the other hand, girls scored better for reading skills (24 points)<sup>136</sup>.

Coeducation must continue to be encouraged as a basic tool to help people develop free of the limitations imposed by gender stereotypes. It must be encouraged throughout all levels of education and the teaching community must receive appropriate training. This includes empowering students so they can choose academic pathways free of gender pressures [see #SDG 5].

With regard to [disabled people](#), a report by the Catalan UNICEF committee<sup>137</sup> showed that disabled children and adolescents have universal access to education in Catalonia but there are issues with the correct application of the legislation, the quality of attention disabled pupils receive and the provision of certain services and supports. This report also indicates that training to help disabled adolescents enter the world of work and participate fully in society is insufficiently developed.

Access to extracurricular activities is a particular issue for [children in vulnerable situations](#), due to economic difficulties. The provision of extracurricular activities thus helps exacerbate inequality, at the same time as these opportunities for educational enrichment are becoming increasingly necessary for the acquisition of vital skills. Access to extracurricular activities with educational value must be extended to all children, especially the most disadvantaged.

Investing in grants requires arriving at a national consensus that investment in children and young people is a shared strategic priority. Achieving this consensus means developing a more open, equitable and diverse system that links success to students' remaining in post-compulsory education.

The main challenges facing Catalonia with regard to this 2030 Agenda target are to:

- ❖ [Foster co-education at all levels of education and ensure the teaching community is properly trained.](#)

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<sup>134</sup> [Informe sobre l'Estat de la Joventut 2015](#). Observatori Català de la Joventut.

<sup>135</sup> [IDESCAT](#).

<sup>136</sup> [Equitat i resultats educatius a Catalunya. Una mirada a partir de PISA 2012](#). Jaume Bofill Foundation.

<sup>137</sup> [Infants i adolescents amb discapacitat a Catalunya](#). UNICEF Comitè Catalunya.

- ❖ To ensure disabled people receive a high standard of education to prepare them to enter the world of work and participate in society.
- ❖ To ensure disadvantaged children have access to extracurricular activities with educational value.
- ❖ To empower students to choose academic pathways free of gender pressures.

**4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.**

The results of the 2012 PISA survey for mathematics, sciences and reading place Catalonia near the OECD and EU-15 averages.

One of the European goals for 2020 is to reduce to 15% the proportion of 15 year old pupils with insufficient ability in reading, mathematics and science. Catalonia comes close to this target for reading comprehension (15.1%) and scientific skills (15.5%) but falls far short for mathematics (20%).

With regard to people over the age of 16, there are 92,100 illiterate people in Catalonia<sup>138</sup>, who do not know how to read or write. The majority of these are older (55 years or more) and women account for significantly more of them than men (64,600 women compared with 27,500 men).

The main challenges facing Catalonia with regard to this 2030 Agenda target are to:

- ❖ Reduce the number of people who do not know how to read and write.
- ❖ Ensure that all young people have reading, writing and arithmetical skills.

**4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.**

UNESCO defines education for sustainable development (ESD) as education aimed at helping people develop the knowledge, skills, attitudes and values necessary to take well-founded decisions and act in favour of their own well-being and that of others, now and in the future.

In Catalonia school curricula at both primary and secondary level incorporate issues related to sustainable development. Furthermore, both the Government of Catalonia and many Catalan town councils have developed education for sustainability programmes for schools, which have been coordinated since 2009 through the Schools Network for Sustainability (XESC)<sup>139</sup>. Over 1,200 schools currently belong to this network, ranging

<sup>138</sup> [Idescat. 4th quarter 2015.](#)

<sup>139</sup> [www.xesc.cat](http://www.xesc.cat)

from nursery schools to baccalaureate and vocational training centres, representing around 25% of all schools.

There are many initiatives at university level to include education for sustainable development in formal academic training. A number of Catalan universities are currently looking into the most viable ways of putting this goal into practice. For example, at Universitat Politècnica de Catalunya -Barcelona Tech (UPC), Sustainability and Social Commitment<sup>140</sup> is a transversal skill taught as part of all its degree courses, and the University of Girona has also included sustainability as one of the transversal skills assessed for all degree courses<sup>141</sup>.

Another initiative is the ESDU project to promote Education for Development in universities, in order to strengthen the role of universities in generating critical understanding and shaping an active and committed global citizenship. The ESDU project is led by the Solidarity Autonomous Foundation, in partnership with the Catalan Association of Public Universities (ACUP) and the Global University Network for Innovation.

As part of the ESDU project, an Education for Sustainable Development (ESD) working group has recently been set up to help the ACUP member universities to institutionalise ESD. Its specific aim is to develop a joint vision of ESD in the Catalan university system and help build structures that facilitate its introduction at various levels, to generate incentives and knowledge systems, to facilitate the design of a common teaching programme and to establish a system of indicators to measure its impact.

To achieve this 2030 Agenda target it is necessary to ensure that sustainable development is built into the educational curriculum at all levels from primary to university education. Sustainability must also be incorporated into the field of research.

This target demands we place particular emphasis on the humanist values inherent in every discipline and on building an education system based on a culture of peace, freedom, solidarity, tolerance, human rights, gender equality and respect for cultural diversity.

For a sustainable lifestyle it is important to encourage good time management in education and at work, limiting the time devoted to work and freeing it for personal, family and social pursuits. Apart from improving people's physical and emotional well-being, a more rational timetable helps improve academic performance, allows families to be more involved in their children's education and enables people to engage in lifelong learning.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Build sustainable development into the educational curriculum at all levels from primary to university education.
- ❖ To incorporate sustainability into the field of research.

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<sup>140</sup> [L'educació per al desenvolupament a la universitat. Impulsant l'educació crítica i compresa als estudis de grau.](#) Fundació Autònoma Solidària.

<sup>141</sup> [Competències transversals de la UdG \(Transversal skills in the University of Girona\).](#)

- ❖ To build an education system based on a culture of peace, freedom, solidarity, tolerance, human rights, gender equality and respect for cultural diversity.
- ❖ To make progress on timetable reform.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 4

The CADS considers that the main challenges facing Catalonia with respect to SDG 4 are to:

- ❖ Guarantee the quality of compulsory education through a holistic approach to learning that goes beyond the traditional separation of cognitive, emotional and ethical aspects.
- ❖ Foster the learning of skills for a changing world that demands adaptable, fast learners, teamwork, the management of information, critical thinking, communication and problem solving skills.
- ❖ Strengthen the early detection of learning difficulties and apply personalised mentoring and support mechanisms.
- ❖ Ensure the education system is equitable through specific measures targeted at disadvantaged students and to tackle issues of structural inequality such as educational segregation.
- ❖ Strengthen and diversify municipal education services for children from 0 to 3 years old and their families, especially in the poorest districts.
- ❖ Foster co-education at all levels of education and ensure the teaching community is properly trained.
- ❖ Ensure the universal completion of upper secondary education.
- ❖ Build an education system based on a culture of peace, freedom, solidarity, tolerance, human rights, gender equality and respect for cultural diversity.
- ❖ Help those most in need to improve their skills and access training for employment.
- ❖ Incentivise lifelong learning and training.
- ❖ Ensure that people with disabilities receive a high standard of education to prepare them to enter the world of work and participate in society.
- ❖ Ensure disadvantaged children have access to extracurricular activities with educational value.
- ❖ Reduce the number of people who do not know how to read and write.
- ❖ Build sustainable development into the educational curriculum at all levels from primary to university education.
- ❖ Increase investment in education.





## **5 ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS**

### **UNITED NATIONS 2030 AGENDA GOALS**

- 5.1** End all forms of discrimination against all women and girls everywhere.
- 5.2** Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation.
- 5.3** Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation.
- 5.4** Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.
- 5.5** Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.
- 5.6** Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences.



## INTERNATIONAL CONTEXT

According to the summary report assessing the first 20 years of the Beijing declaration and platform for action<sup>142</sup>, published by UN Women in March 2015, progress towards gender equality over the last two decades has been slow and uneven.

The report notes that 35% of women worldwide have experienced either physical and/or sexual intimate partner violence or non-partner sexual violence in their lifetime<sup>143</sup>. Among low and middle-income regions, Africa has the highest proportion of women reporting either physical and/or sexual intimate partner violence or non-partner sexual violence, at 45.6%, followed by Southeast Asia (40.2%), Eastern Mediterranean (36.4%), the Americas (36.1%), Western Pacific (27.9%) and Europe (27.2%). In high-income countries, 32.7% of women worldwide have experienced either physical and/or sexual intimate partner violence or non-partner sexual violence in their lifetime.

In terms of legislation, women still suffer discrimination in many countries, particularly in the area of family law. Higher female participation in the workforce has not translated into improvements in working conditions or equitable remuneration. It is estimated that at the current pace of progress it would take more than 75 years to achieve equal remuneration for work of equal value<sup>144</sup>.

The latest United Nations Global report on trafficking in persons<sup>145</sup> shows that girls account for two out of every three child victims of trafficking and 70% of all victims around the world are women or girls. Women and girls are trafficked for sexual exploitation but also for forced labour and other forms of exploitation.

With regard to harmful practices such as female genital mutilation, a recent UNICEF study<sup>146</sup> suggests that at least 200 million girls and women in 30 different countries have been subject to this practice. Of these 200 million, more than half live in three countries: Indonesia, Egypt and Ethiopia.

With regard to child marriage, 700 million women around the world were married before the age of 18, 250 million of them before the age of 15. About 16 million girls aged 15 to 19 and around one million girls under 15 give birth every year, most in low- and middle-income countries (with the highest rates in sub-Saharan Africa)<sup>147</sup>.

According to OECD studies<sup>148</sup>, women throughout the world dedicate twice as much time as men to unpaid care and household work. This unequal distribution is due to discriminatory social institutions and gender stereotypes.

The percentage of women in state parliaments has almost doubled over the last 20 years. Nevertheless, in December 2015 only 22.7%<sup>149</sup> of all parliamentary seats were

<sup>142</sup> [Summary Report: The Beijing Declaration and Platform for Action turns 20.](#)

<sup>143</sup> [World Health Organization \(OMS\) 2013. Global and regional estimates of violence against women.](#)

<sup>144</sup> [International Labour Organization 2011. A new era of social justice.](#)

<sup>145</sup> [United Nations Office on Drugs and Crime 2014. Global report on trafficking in persons.](#)

<sup>146</sup> [UNICEF 2016.](#)

<sup>147</sup> [WHO, 2014. Adolescent pregnancy. Fact sheet no. 364.](#)

<sup>148</sup> [OECD 2014. Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes.](#)

occupied by women, i.e., the proportion of women parliamentarians has increased very slowly since 1995, when the proportion was 11.3%<sup>150</sup>.

Although worldwide maternal mortality rates fell by around 44% between 1990 and 2015, approximately 830 women die every day from preventable causes linked to pregnancy and childbirth. Ninety-nine per cent of these deaths occur in developing countries<sup>151</sup> where, furthermore, an estimated 225 million women would like to delay or stop childbearing but are not using any method of contraception<sup>152</sup>.

## EUROPEAN CONTEXT

According to forecasts published by the European Commission in its 2014 report on equality between women and men<sup>153</sup>, at the current rate of change, it will take another 70 years to achieve gender equality in Europe. The report states that in 2014 women accounted for less than a quarter of company board members, despite representing almost half of the workforce (46%).

Working men devote only nine hours a week to unpaid care and household work, as compared with 26 hours for working women. Deficient work-life balance policies hamper women's employment and therefore their potential for economic growth.

The gender pay gap in the EU is 16.4%<sup>154</sup> while for pensions the gap is 39%<sup>155</sup>. Occupational segregation continues to be widespread, with women tending to be over-represented in less well-paid sectors related to traditional roles such as healthcare, social services, humanities, the arts and education<sup>156</sup>.

Meanwhile, traditionally masculine spheres such as the sciences, engineering and construction, communication technologies and mathematics continue to be dominated by men. Furthermore, working women are four times more likely to have part-time jobs than working men.

While some state parliaments and governments are close to achieving gender parity, women still represent less than one third of ministers and members of parliament in the majority of Member States<sup>157</sup>.

The prevalence of gender-based violence is still alarmingly high. A third of women in the EU have experienced physical or sexual violence<sup>158</sup>. It is also estimated that 500,000

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<sup>149</sup> [Inter-Parliamentary Union. Women in National Parliaments, as at 1st December 2015.](#)

<sup>150</sup> [UN Women.](#)

<sup>151</sup> [WHO, 2015. Maternal mortality. Fact sheet no. 348.](#)

<sup>152</sup> [WHO, 2015. Family planning/Contraception. Fact sheet no. 351.](#)

<sup>153</sup> [European Commission. Report on equality between women and men 2014.](#)

<sup>154</sup> [Eurostat, 2013](#)

<sup>155</sup> [European Commission. Report on equality between women and men 2014.](#)

<sup>156</sup> [European Institute for Gender Equality.](#)

<sup>157</sup> [Report on equality between women and men 2014. European Commission.](#)

<sup>158</sup> [European Commission. Report on equality between women and men 2014.](#)

women in Europe have undergone female genital mutilation<sup>159</sup> and 80% of the 30,146 victims of human trafficking reported from 2010 to 2012 were women<sup>160</sup>.

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are detailed below, structured in line with the 2030 Agenda targets.

### 5.1 End all forms of discrimination against all women and girls everywhere.

Equality between men and women has not by any means been achieved in Catalonia. For this reason, in 2015 the Parliament of Catalonia approved *Law 17/2015, of 21 July, on effective equality between men and women*, establishing transversal measures affecting all aspects of life with the aim of eradicating discrimination against women.

This law, which builds on *Law 3/2007, of 22 March, on effective equality between men and women*, requires public authorities in Catalonia to do everything within their power to eliminate the stereotypes and obstacles that form the basis for the unequal status and position of women and lead the roles of women and men in the political, economic, social and cultural spheres to be unequally valued.

Despite the progress made to date, political, economic and cultural inequalities continue to exist, such as, for example, pay gaps and the under-representation of women in politics. These inequalities are the result of social structures based on numerous stereotypes found in many fields, such as the family, education, culture, the media, the world of work and social structures.

The job market is one area where gender inequality is very clear, with a marked pay gap between men and women. The pay gap between men and women in Catalonia in 2011 to 2013 (pay per hour) was around 20%<sup>161</sup> (higher than the European average of 16.4%<sup>162</sup>). This pay gap increases when calculated on the basis of average annual earnings. Men in Catalonia in 2013 earned an average of 27,684 euros while women earned 20,741 euros, 25.1% less<sup>163</sup>.

The causes of the pay gap are multiple, complex and interconnected. The undervaluation of women's work, the over-representation of women in part-time work (22.2% compared with 7.6% of men<sup>164</sup>), the unequal assumption of family and domestic responsibilities, inequalities in academic guidance and access to jobs are some of the factors leading to the horizontal and vertical segregation of women.

Horizontal segregation places women in lower paid sectors and jobs traditionally regarded as female (such as social services, education and health). Vertical

<sup>159</sup> [http://europa.eu/rapid/press-release\\_MEMO-16-249\\_en.htm](http://europa.eu/rapid/press-release_MEMO-16-249_en.htm)

<sup>160</sup> [Eurostat, 2015](#)

<sup>161</sup> [Bretxa salarial entre homes i dones \(Wage gap between men and women\) 2013. IDESCAT](#)

<sup>162</sup> [Eurostat, 2013](#)

<sup>163</sup> [Desigualtats salarials a Catalunya. UGT](#)

<sup>164</sup> [Resultats de l'Enquesta de Població Activa 4t trimestre 2015](#)

segregation, meanwhile, prevents women from climbing and achieving promotion within their professions, limiting their incomes. This translates into pensions which are 31% lower for women than men and unemployment benefits that are also 12% lower<sup>165</sup>.

It is therefore necessary to tackle the real causes of these inequalities and take measures to reduce (and eliminate) the pay gap and horizontal and vertical segregation. To do this, it is important to raise awareness among all public and private social agents, in order to remove the obstacles to equal opportunities for women and men.

Co-education is an essential tool to help people develop free of the limitations imposed by gender stereotypes. It must be encouraged throughout all levels of education and the teaching community must receive appropriate training. The involvement of the media is also necessary, which could prove an important ally in eradicating the sexist cultural structures that sustain the inequalities suffered by women.

The main challenges facing Catalonia with regard to this 2030 Agenda target are to:

- ❖ Reduce the wage gap, tackling all its many causes.
- ❖ End the horizontal and vertical segregation of women.
- ❖ Foster co-education at all levels of education and ensure that the teaching community is properly trained.
- ❖ Eradicate sexist cultural structures with the involvement of all social agents and the media.
- ❖ Ensure compliance with *Law 17/2015, of 21 July, on effective equality between men and women* and ensure its regulatory implementation.

## **5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation.**

In Catalonia in 2015 there were 12,790 reported cases of gender violence perpetrated by partners, with 7 fatal victims, and 2,927 reported cases perpetrated by other family members<sup>166</sup>. Although these figures highlight the gravity of the issue, it must also be noted that a great many situations involving **gender violence** are not reported.

For this reason, other sources of data must also be taken into account, such as the survey on gender violence in Catalonia carried out in 2010<sup>167</sup>, which found that one in four women has suffered at least one sexist attack, and that over 80% of women who have been the victims of acts considered to be crimes, most of them perpetrated by a man close to them, did not report it.

<sup>165</sup> [Indicador d'Igualtat de Gènere de Catalunya \(Gender equality indicator for Catalonia\) 2015.](#)  
[Barcelona Chamber of Commerce](#)

<sup>166</sup> [Estadística de violència masclista i domèstica \(Statistics on gender and domestic violence\), 2015.](#)  
Catalonia Ministry of Home Affairs.

<sup>167</sup> [Enquesta de violència masclista de Catalunya \(Survey on gender violence\) 2010.](#)

Around 70,000 women living in Catalonia reported that they had been abused by a partner or ex-partner in 2009. The survey showed that reported cases of gender violence are just the tip of the iceberg. This is a deep-rooted social problem occurring not just within couples but also in public spaces and the workplace.

In the workplace, 4% of women report they have had to leave a job because of sexual harassment. This survey, the first specific study into gender violence in Catalonia, highlighted the seriousness of this problem in this country<sup>168</sup>.

Another useful indicator is the use of a permanent telephone helpline for victims of gender violence (900 900 120), a free, confidential service that operates 24 hours a day for 365 of the year. According to figures published by the Catalan Institute for Women<sup>169</sup>, the helpline received 10,453 calls related to gender violence in 2015. The number of calls had been falling steadily from 2008 (12,357 calls) to 2014 (9,267). The number of calls received in 2015 ended this downward trend.

The use of new information and communication technologies must be considered in relation to gender violence. These technologies may enable perpetrators to harass victims in a more omnipresent and dangerous way, with a greater risk of overstepping boundaries due to the lack of direct contact with the victim and thus reduced awareness of the harm caused.

On the regulatory level, the Parliament of Catalonia approved *Law 5/2008, of 24 April, on the right of women to eradicate gender violence*. This law established integrated measures to prevent and detect gender violence and raise awareness of this form of violence with the aim of eradicating it from society.

Despite intense activity to prevent violence and raise awareness, and the widespread provision of care services and resources implemented in Catalonia, gender violence continues to be a serious problem and work must continue to eradicate it.

It is therefore necessary to develop and disseminate understanding of the deep roots of this social blight and to make progress on moving away from traditionally patriarchal social structures towards a new, freer and more egalitarian social model in terms of gender. The training and coordination of all those involved in tackling this issue is also necessary, together with raising awareness and involving the wider society via the media, internet and social networks.

With regard to the [trafficking of women for all forms of exploitation](#), it is difficult to precisely estimate the number of victims. The cases reported to the police, persons detained and victims identified do not begin to expose the extent of this hidden world, but they do help us to guess at it. Reports received by the Catalan Police Force from January 2010 to September 2013 totalled 282 cases of trafficking for sexual exploitation and 342 for forced labour<sup>170</sup>.

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<sup>168</sup> The second edition of this survey will be published in 2016, helping to give a clearer view of the issue, understand the trends and develop more effective public policies.

<sup>169</sup> [Dades estadístiques de la Línia 900 900 120 d'atenció a les dones en situació de violència masclista \(Statistics for the 900 900 120 telephone helpline for women victims of gender violence\)](#).

<sup>170</sup> Sellart, Xavier; Sellart, Xavier; 2nd Seminar on organised crime (2013: Mollet del Vallès). [La situació del tràfic d'éssers humans a Catalunya](#). Institute for Public Security of Catalonia (ISPC).

The Walk Free Foundation's Global Slavery Index<sup>171</sup>, however, contains more alarming figures: it estimates that 8,400 people in Spain are living in conditions of modern slavery, linked to human trafficking, forced labour, debt bondage, commercial sexual exploitation and servile or forced marriage.

A recent Europol report<sup>172</sup> included Spain in its list of the most targeted countries by human traffickers, due to high demand for cheap sexual and labour services in these countries.

The trafficking of women for sexual or any other form of exploitation is a grave violation of human rights and an intolerable attack on women's dignity and integrity. The detection and prevention of this crime must be strengthened, ensuring victims are fully supported and that all involved in tackling this area are appropriately trained and work together to provide a full protection and support service for victims.

It is also important to intensify cooperation and collaboration with the regional and international organisations working to combat human trafficking in order to completely eradicate it.

The main challenges facing Catalonia with regard to this 2030 Agenda target are to:

- ❖ [Eradicate gender violence. Foster Co-education, research and the dissemination of knowledge into the causes of this social blight, together with the training and coordination of all those involved in tackling it.](#)
- ❖ [Eradicate the trafficking and exploitation of women in all its forms. The detection and prevention of this crime must be strengthened and a full protection and support service for victims guaranteed.](#)

### **5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation.**

[Female genital mutilation](#) (FGM) is a crime in Catalonia, as it is in many of the countries of origin of those who practice it, although the practice continues to exist. FGM is a manifestation of gender violence and inequality based on a set of beliefs that are deeply rooted in the social, economic, cultural, political and, sometimes, religious structures of the communities that engage in this practice. It constitutes an attack on human rights and a demonstration of the power men have over women in many places.

A map of female genital mutilation in Spain in 2012<sup>173</sup> published by the Wassu-UAB Foundation shows that Catalonia is the autonomous community with by far the largest number of immigrants from countries with ethnic groups that practise FGM. Senegal and Gambia are the two main countries of origin, followed by Mali, Nigeria and Ghana.

<sup>171</sup> [2016 Global Slavery Index](#). Walk Free Foundation.

<sup>172</sup> [Trafficking in human beings in the EU](#) (February 2016).EUROPOL.

<sup>173</sup> [Mapa de la mutilació genital femenina a Espanya 2012](#). Wassu-UAB Foundation.



According to the 2015 register of residents, in Catalonia there are 5,367 girls and women under the age of 19 from these countries. However, only those from the ethnic communities that practise FGM are considered to be at risk.

Catalonia is a pioneer in measures to tackle this practice, with an inter-ministerial protocol in place since 2002 and updated in 2007. Some sixty local boards and work groups on preventing FGM have been set up in counties throughout Catalonia.

The participants are public employees from a wide range of services, including medicine, nursing, teaching, the police and social work, who have more or less regular contact with practising ethnic communities. Over recent years the boards have been involved in prevention measures in 380 cases (120 in 2012, 144 in 2013 and 116 in 2014, figures are not yet available for 2015)<sup>174</sup> resulting in the parents signing a written commitment not to cut their daughter or daughters.

Since October 2015 the Catalan public health service has offered clitoris reconstruction surgery to all women who request it. This measure fulfils the requirement of *Law 5/2008, on the right of women to eradicate gender violence*, stating that surgical mechanisms must be available to reverse the effects of genital mutilation. To date five women have been attended to at the Hospital Clínic de Barcelona, the leading centre for this type of surgery.

The Government of Catalonia has also contributed to combating FGM in southern countries, financing, via the Catalan Agency for Development Cooperation, projects to prevent FGM, raise awareness, empower women and improve primary healthcare.

The Catalan police dealt with 15 cases of **forced marriage** in 2015<sup>175</sup>, of which 8 involved minors. Ten cases were recorded in 2014, 6 of them involving minors. The number of cases in 2013 was 26, of which 15 were under-age.

It must be borne in mind that the crime of forced marriage has only recently been included in the Penal Code (1 July 2015) and there are therefore no figures for Spain. In Catalonia, on the other hand, there are police figures on this practice since 2009 as *Law 5/2008, on the right of women to eradicate gender violence*.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Eradicate female genital mutilation, forced marriage and other practices that are harmful to women.
- ❖ To strengthen coordination between the professionals in the different fields involved in order to provide maximum protection and support to the victims of these crimes.

**5.4** Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.

<sup>174</sup> [Govern.cat](http://govern.cat). Government of Catalonia.

<sup>175</sup> [Ministry of Home Affairs](http://govern.cat). Government of Catalonia.



In Catalonia women continue to assume the greater part of responsibility for work in the home and caring for the family. According to a survey carried out in 2011 into people's use of time<sup>176</sup>, women spend an average of 3 hours and 54 minutes on household and family tasks, while men spend 2 hours 2 minutes. Effectively, women dedicate twice as much time as men.

*Law 17/2015, of 21 July, on effective equality between men and women* establishes that the Government of Catalonia must regularly calculate the economic value of household work, childcare and the care of the elderly or dependent people and report the results of these estimates so that Catalan society is made aware of the economic and social importance of this work.

These figures must be taken into account when designing economic and social policies, which need to provide particular protection for women as the majority of poor people in Catalonia (and around the world) are women. It is therefore important to ensure affordable access to nursery services and care services for dependent people in order to help women participate in the labour market.

It is also necessary to develop family policies based on joint responsibility (for paid and unpaid work) to ensure equality of opportunities for all members of the family in the broadest sense. New forms of work must be implemented, with working hours more in line with the rest of Europe and which help women and men achieve a better work-life balance.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Push for unpaid care and household work to be socially recognised and economically valued.
- ❖ Encourage men to take joint responsibility with women for household and care work.
- ❖ In the educational sphere, to promote teaching boys and girls about joint responsibility.
- ❖ Make progress on timetable reform.
- ❖ Guarantee affordable access to infant and nursery schools and care services for dependent people, especially for the most vulnerable sections of society.

### **5.5** Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.

A report on the gender equality indicator for Catalonia<sup>177</sup>, prepared by the Research Board of the Barcelona Chamber of Commerce shows that women are clearly under-represented compared to men in the political, business, academic and institutional spheres.

<sup>176</sup> [Enquesta usos del temps \(Use of time survey\) 2011. IDESCAT.](#)

<sup>177</sup> [Indicador d'Igualtat de Gènere de Catalunya \(Gender equality indicator for Catalonia\) 2015. Barcelona Chamber of Commerce.](#)

In politics, in Catalonia there are 772 male mayors and just 174 female mayors (77% fewer), 5,880 male elected councillors versus 3,194 female councillors (46% fewer), and 83 members of the Catalan Parliament are men compared to 52 women (37% fewer)<sup>178</sup>.

In business, the number of women in managerial posts is 45% lower than the number of men (57,675 women compared to 104,025 men). The number of women in technical, scientific and intellectual posts is 29% higher than the number of men (316,875 women compared with 243,800 men). Finally, there are very few women on company Boards of Directors (17% in major Spanish companies, according to European Commission figures for 2015).

There were 329 female professors in Catalan universities in 2015, compared with 1,239 men (73% fewer women). In 2005 this gap stood at 75%. Clearly, then, virtually no progress has been made over the last decade.

In the institutional sphere, the aforementioned report examined the composition of the boards, governing bodies, chairs and vice-chairs and general secretaries of 11 institutions, including trusts, trade unions, chambers of commerce, cultural institutions and professional associations. It found that 109 of these posts were held by women and 366 by men, i.e., there were 70% fewer women than men in the representative bodies of these institutions.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Encourage women to become more involved in all aspects of decision-making in the political, economic and public spheres, breaking through the so-called 'glass ceiling'.
- ❖ Foster agreement between institutions, society and the business world to make use of and build on female talent.
- ❖ Raise awareness of women's contributions to history and the achievement of their rights.

**5.6** Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences.

*Law 17/2015, of 21 July, on effective equality between men and women* establishes that the public authorities in Catalonia with responsibilities for health matters, within the scope of their competences and in order to guarantee emotional, sexual and reproductive health, must:

- a) Include, from primary school onward, content on emotional, sexual and reproductive health in education policy, with particular focus on adolescents, young adults and vulnerable sections of society.

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<sup>178</sup> At the start of the twenty-first legislature the Parliament of Catalonia had 52 female members, this has increased to 57.

- b) Guarantee that reproductive guidance is included in the services provided by sexual and reproductive healthcare units, and facilitate universal access to safe methods of contraception, with particular focus on adolescents.
- c) Help empower women in decision-making processes concerning contraception and measures to prevent sexually transmitted diseases.
- d) Help women have control over decision-making during pregnancy, childbirth and breastfeeding.
- e) Ensure women have access to abortion services via centres in the public health network, in accordance with current legislation.

In 2014 there were 1,153 registered births<sup>179</sup> to adolescent mothers in Catalonia, and 19,130 abortions<sup>180</sup>. Although these figures are still high, they have come down from previous years. Between 2007 and 2014 teenage pregnancies fell by 35.6%, and the number of abortions also fell for this age group<sup>181</sup>.

The European Barometer of Women's Access to Modern Contraceptive Choice<sup>182</sup>, published in January 2015, failed Spain for its lack of sex education programmes in schools and the unequal treatment suffered by young women in obtaining access to contraceptives in some autonomous communities. This barometer notes that in certain autonomous communities, including Catalonia, there are specialist sexual and reproductive health centres, while others have none, or are losing them.

The main challenges facing Catalonia with regard to this target are to:

- ❖ Promote education on emotional, sexual and reproductive health, with a particular focus on adolescents.
- ❖ Implement intensive campaigns to promote sexual and reproductive health education and train professionals in this field.
- ❖ Help empower women in decision-making processes concerning contraception and measures to prevent sexually transmitted diseases.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 5

The CADS considers that the main challenges facing Catalonia with respect to SDG 5 are to:

- ❖ Eradicate gender violence in all its forms.
- ❖ Promote co-education at all stages of education.
- ❖ Reduce the wage gap between men and women, tackling all of its many causes.

<sup>179</sup> [IDESCAT 2014.](#)

<sup>180</sup> [IDESCAT 2014.](#)

<sup>181</sup> [Efectes de la crisi econòmica en la salut de la població de Catalunya \(Observatory on the effects of the crisis on the health of the population\). Catalan Health System Observatory, 2015.](#)

<sup>182</sup> [International Planned Parenthood Federation Network.](#)



- ❖ End the horizontal and vertical segregation of women.
- ❖ To encourage men to take joint responsibility with women for household and care work.
- ❖ Eradicate sexist cultural structures with the involvement of all social agents and the media.
- ❖ Eradicate the trafficking and all forms of exploitation of women and to guarantee full protection and support for victims.
- ❖ Push for unpaid care and household work to be socially recognised and economically valued.
- ❖ Guarantee affordable access to infant and nursery schools and care services for dependent people, especially for the most vulnerable sections of society.
- ❖ Encourage women to become more involved in all aspects of decision-making in the political, economic and public spheres, breaking through the so-called 'glass ceiling'.
- ❖ Promote education on emotional, sexual and reproductive health, with a particular focus on adolescents.

## **6 ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL**

### **UNITED NATIONS 2030 AGENDA GOALS**

- 6.1** By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
- 6.2** By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.
- 6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
- 6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- 6.5** By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.
- 6.6** By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

## INTERNATIONAL CONTEXT

The Millennium Development Goal of halving, by 2015, the proportion of the population without sustainable access to safe drinking water was achieved between 1990 and 2010. In this period, 2.6 billion people obtained access to improved water sources<sup>183</sup>, and 90% of the world's population is now considered to have access to such sources. Nevertheless, 663 million people worldwide still use unimproved drinking water sources, half of them in sub-Saharan Africa and one fifth in southern Asia. Most of them live in rural areas<sup>184</sup>.

The aspects of this Goal related to sanitation were not achieved, and in 2015 there were still 2.4 billion people without access to sanitation facilities such as toilets or latrines. Most of them were in southern Asia and sub-Saharan Africa, principally in rural areas. The proportion of the population that does have access to these facilities is 68%<sup>185</sup>.

Only 20% of wastewater produced worldwide is correctly treated<sup>186</sup>. Countries' capacity to treat wastewater varies widely according to income, with the richest countries treating 70% of wastewater but the poorest countries only 8%<sup>187</sup>.

Water scarcity affects more than 40 per cent of the global population and is projected to rise. Over 1.7 billion people are currently living in river basins where water use exceeds recharge<sup>188</sup>.

Since 1992, 80% of countries have embarked on reforms to facilitate integrated water resources management based on Agenda 21 and affirmed in the Johannesburg Plan of Implementation (2002). Sixty-five per cent of countries have developed integrated water resources management plans and 34% report an advanced stage of implementation<sup>189</sup>.

Maintaining ecosystems in good condition is extremely important for ensuring continuous water supplies and other vital services for human welfare and development. Around the world, ecosystems are in decline in relation to the services they provide, especially in wetlands, whether due to the development of infrastructures, land conversion, water extraction, hypertrophication, contamination, overexploitation or the introduction of invasive species. It is estimated that 60% of the world's ecosystems are

<sup>183</sup> Access to *improved water sources* is the indicator used by the WHO and UNICEF to assess access to drinking water. An improved water source is one where human use is kept separate from use by animals and faecal contamination, but this does not mean the water is necessarily safe to drink. For this reason, according to the [United Nations World Water Development Report 2015](#), the extent to which this goal has been achieved has been overestimated.

<sup>184</sup> [Progress on sanitation and drinking water – 2015 update and MDG assessment](#), UNICEF and World Health Organization 2015.

<sup>185</sup> [Progress on sanitation and drinking water – 2015 update and MDG assessment](#), UNICEF and World Health Organization 2015.

<sup>186</sup> WWAP (World Water Assessment Programme). 2012. [The United Nations World Water Development Report 4: Managing Water under Uncertainty and Risk](#). Paris, UNESCO, 2012.

<sup>187</sup> [Wastewater Management. A UN-Water Analytical Brief](#), UNWater 2015.

<sup>188</sup> <http://www.un.org/sustainabledevelopment/water-and-sanitation/> [Consulted: 7/07/16]

<sup>189</sup> UNEP 2012. [The UN-Water Status Report on the Application of Integrated Approaches to Water Resources Management](#).

degraded or used unsustainably<sup>190</sup>, and between 4.3 and 20.2 trillion US dollars' worth of ecosystem services were lost per year between 1997 and 2011 due to land use change<sup>191</sup>.

## EUROPEAN CONTEXT

In the European Union access to drinking water is guaranteed (with the exception of Poland and Ireland, where the percentages are 99% and 98%)<sup>192</sup>. However, for certain sections of society, their access to water is impeded by poverty. According to Eurostat figures, 9.0% of the population suffered from severe material deprivation in 2014, including being unable to pay household bills, such as water charges<sup>193</sup>.

With regard to sanitation, over 95% of the population in all European countries have access to sanitation facilities, apart from Lithuania (92%), Ireland (91%), Latvia (88%), Bulgaria (86%) and Romania (79%)<sup>194</sup>.

About 80% of the population is connected to centralised wastewater treatment systems in Northern and Southern Europe. The connection rate in Central European countries exceeds 90%, while it is about 67% in the countries of Eastern Europe<sup>195</sup>.

However, although European water quality is better than 25 years ago, particularly since the entry into force of the Water Framework Directive, it is likely that half of the bodies of water in Europe do not meet its targets and will continue to have poor ecological status or potential (those that do are estimated at 53% in 2015)<sup>196</sup>.

In Europe, the abstraction of water for human use has declined since the 1990s, especially in eastern and western Europe, representing on average around 13% of all renewable and accessible freshwater from natural water bodies (including surface waters and groundwater)<sup>197</sup>. However, there has been little reduction in abstraction rates from many Mediterranean water basins and the percentage of total water used compared to the renewable resources available is over 20%. This situation worsens in

<sup>190</sup> Science for Environment Policy (2015) [Ecosystem Services and the Environment. In-depth Report 11](#). Produced for the European Commission, DG Environment by the Science Communication Unit, UWE, Bristol.

<sup>191</sup> WWAP (United Nations World Water Assessment Programme). 2015. [The United Nations World Water Development Report 2015: Water for a Sustainable World](#). Paris, UNESCO. 2015

<sup>192</sup> [A snapshot of Sanitation and Drinking Water in the Developed countries region](#), WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, 2015

<sup>193</sup> [People at risk of poverty or social exclusion](#), Eurostat. Figures for December 2015. [Consulted: 7/07/16].

<sup>194</sup> [A snapshot of Sanitation and Drinking Water in the Developed countries region](#), WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, 2015

<sup>195</sup> [Urban waste water treatment. Indicator Assessment. Data and maps](#). European Environmental Agency, figures updated September 2015. [Consulted: 7/07/16].

<sup>196</sup> 'Freshwater quality. European Briefings'. *The European Environment State and Outlook 2015. European briefings*. European Environmental Agency.

<sup>197</sup> 'Reducing water stress requires enhanced efficiency and water demand management'. *The European Environment State and Outlook 2015, Synthesis report*. European Environmental Agency.



summer, and it is estimated that more than half (53%) of the Mediterranean population is affected by water stress during the summer<sup>198</sup>.

The approach for water management established in the Water Framework Directive is based on natural river basins. All Member States except Cyprus and Malta contain sections of at least one international river basin district<sup>199</sup>, meaning that international cooperation is required.

In the EU, forests are estimated to have grown by 2.8% between 2000 and 2010, while the area with artificial land cover has increased by 0.35%. These changes happened at the cost of cropland (2.1%) and grassland (almost 1%). Rivers and lakes grew a little, by 0.04%, while wetlands shrank slightly, by 0.03%<sup>200</sup>. Protected areas (Natura 2000 and Emerald networks) grew in the same period and now cover 18% of Europe's land<sup>201</sup>.

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are therefore detailed below, structured in line with the 2030 Agenda targets.

### 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all.

WHO and UNICEF estimate that 100% of the population of Spain, and therefore Catalonia, has access to improved water sources<sup>202</sup>.

Nevertheless, as demonstrated in the Catalan Ombudsman's report<sup>203</sup>, in recent years the number of people having problems paying for basic utilities (electricity, water and gas) has increased, aggravated by the financial crisis, unemployment and rising prices. Since 2009 the price of water has increased by almost 26% in Spain's major cities, and by up to 65% in the Barcelona Metropolitan Area<sup>204</sup>. According to the Aigua és Vida (Water is Life) platform, in 2014 in Catalonia 120,000 people may have found themselves without water for economic reasons<sup>205</sup>. The water supply company Aigües

<sup>198</sup> [Is Europe freshwater use sustainable?](#) European Environmental Agency, 2016.

<sup>199</sup> Water Note 1 [Joining Forces for Europe's Shared Waters: Coordination in international river basin districts](#). Water Information System for Europe. European Commission, 2008.

<sup>200</sup> [Mapping and Assessment of Ecosystems and their Services: Trends in ecosystems and ecosystem services in the European Union between 2000 and 2010](#), Joint Research Centre, European Commission, 2015.

<sup>201</sup> [Biodiversity – protected Areas](#). *The European Environment State and Outlook 2015, Cross-country comparisons*. European Environment Agency.

<sup>202</sup> [Joint Monitoring Programme for water supply and sanitation](#). WHO and UNICEF, 2015. [Consulted: 7/07/16].

<sup>203</sup> [Informe sobre el dret als subministraments bàsics \(electricitat, aigua i gas\)](#), Catalan Ombudsman, December 2014

<sup>204</sup> [Com garantir l'assequibilitat del Dret Humà a l'aigua i al Sanejament mitjançant les tarifes](#), Enginyeria Sense Fronteres, 2016

<sup>205</sup> <http://www.aiguaesvida.org/mapa-aigua-a-catalunya/#talls>. [Consulted: 7/07/16].

de Barcelona estimates that 8.7%<sup>206</sup> of households in the Barcelona Metropolitan Area are water vulnerable<sup>207</sup>.

It is also clear that increases in the price of water supply services are closely linked to issues such as protecting the environment and public health. On the one hand, the Water Framework Directive states that water suppliers must be able to recover their costs (in most cases paid from public funds).

On the other, the requirements affecting both the quality of water for human consumption (drinking) and the treatment of water prior to discharging it into the receiving environment are getting higher all the time, while the levels of mineral, organic and synthetic substances generated by urban, commercial, industrial and agricultural activities are constantly increasing. These make treatment and drinking water purification processes ever more technical, complex and costly, pushing up supply and treatment costs.

It is therefore necessary to provide alternative means of providing financial support for people who cannot afford to pay the regulatory costs of supplying water for human consumption, which, due to the requirement for integrated management, include purification and treatment costs.

*Law 24/2015<sup>208</sup>, of 29 July, on urgent measures to tackle the housing emergency and energy poverty*, included the right of access to basic drinking water supply under its measures to prevent energy poverty.

According to the Catalan Water Agency, 15% of municipalities in Catalonia have drinking water supply issues due to the contamination of groundwater by nitrates<sup>209</sup>. There are other occasional supply problems due to contamination by, for example, arsenic or fluoride, or to water shortages. To tackle this situation, in May 2016 the Catalan Water Agency announced a series of grants to improve the quality of water in municipalities with supply problems<sup>210</sup>, earmarking 30 million euros to be spent over three years.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Ensure that all municipalities have quality water supplies for their inhabitants, specifically in cases where difficulties are still detected, such as municipalities

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<sup>206</sup> Todeschini, F., Casado, D., Sabes, R. I Sanz, J. [\*Avaluació del disseny i implementació del fons de solidaritat de l'aigua d'aigües de Barcelona\*](#). Ivàlua and Aigües de Barcelona, 2015.

<sup>207</sup> A household is considered to be water vulnerable if it has to spend more than 3% of its income in order to be able to consume a standard quantity of water (100 litres per person per day).

<sup>208</sup> Although this law is currently partially suspended ([31/05/2016](#)) for precautionary purposes, the articles referring to energy poverty remain in force as they were not subject to the appeal.

<sup>209</sup> Ministry of Territory and Sustainability press release:  
[http://premsa.gencat.cat/pres\\_fsyp/docs/2016/04/05/19/30/52f7ece1-dbe2-4f7e-bd31-6d23808f01e1.pdf](http://premsa.gencat.cat/pres_fsyp/docs/2016/04/05/19/30/52f7ece1-dbe2-4f7e-bd31-6d23808f01e1.pdf)

<sup>210</sup> RESOLUTION TES/1186/2016, of 3 may, announcing the call for applications for subsidies for local authorities to invest in measures to improve supplies, and that the Board of Directors of the Catalan Water Agency delegates powers to its director to approve said call for applications and grant the subsidies.

affected by the occasional contamination of their water supplies or by water shortages.

- ❖ Guarantee supplies of drinking water to all, and ensure nobody is left without access to this basic requirement for economic reason. This is not just in technical terms of ensuring there is a water supply, but also in terms of managing how the costs of the service are recovered.

**6.2** By 2030, achieve equitable access to adequate sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.

The target of achieving access to sanitation and hygiene has been achieved in Catalonia, according to United Nations figures. WHO and UNICEF estimate that 100% of the population of Spain, and therefore Catalonia, has access to sanitation facilities<sup>211</sup>.

Despite these figures, there are some villages and scattered communities (most of them with fewer than 2,000 inhabitants) that do not have a municipal sanitation system<sup>212213</sup>. In Report 3/2015 on the Catalan river basin district management plan, the CADS recommended seeking low-cost solutions with minimal environmental impact for these communities.

It is necessary to explore options such as discharging treated effluent into less sensitive receiving environments, such as agricultural irrigation rather than river systems from which the water was extracted for purification in the first place. Agricultural use allows nutrients to be reused and facilitates purification as contaminants remain in the soil, which contains microorganisms and has natural purifying properties. If the compounds are stable and harmful, all that can be done is to prevent them being discharged into waste water.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Install sanitation systems in villages and scattered communities that do not currently have them, using low-cost solutions with minimal environmental impact, to ensure that the entire population has access to municipal sanitation services. Managing this process correctly involves not only the treatment but also the disposal of the treated effluent, ensuring it is not discharged into rivers.

**6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

<sup>211</sup> [Joint Monitoring Programme for water supply and sanitation](#). WHO and UNICEF, 2015.

<sup>212</sup> [Pla de gestió de districte de conca fluvial de Catalunya \(Catalan river basin district management plan\) 2016-2021](#), ACA

<sup>213</sup> According to ACA reports, this situation affects 3% of the population of Catalonia.

According to figures from the Catalan Water Agency, only 33% of Catalonia's bodies of water have good ecological status. This indicator is 28% for rivers and 51% for underground bodies of water. Particular attention must be paid to wetlands as the available data points to the widespread degradation of these ecosystems, and only 22% of bodies of water have good ecological status<sup>214</sup>.

A more detailed examination of the figures shows that just 43% of the rivers analysed were classified as having good or very good ecological status. The lower stretches of the Llobregat, Besòs, Muga and Foix rivers contain bodies of water with poor or bad ecological status. However, 72% of the bodies of water for which data exists were classified as having good chemical status, with compounds with endocrine disrupting properties being responsible for most compliance failures.

With regard to underground bodies of water, 25 of the 26 found to be in poor condition, were so because of their poor chemical status, in 76% of cases due to nitrate contamination. The source of most of these nitrates is agriculture, produced by livestock effluent and mineral fertilisers. Contamination from industrial areas is also responsible for the poor chemical status of underground bodies of water (for example, volatile halocarbon compounds such as perchloroethylene and trichloroethylene) or seawater seepage due to the overexploitation of coastal aquifers leading to the presence of chlorides and sulphates<sup>215</sup>.

Seventy-eight per cent of the bodies of water in wetlands for which information is available have not achieved good ecological status. The main causes are poor water quality, hydromorphological alterations and the presence of invasive species, which not only displace native species but often affect the entire ecosystem. The best conserved wetlands are generally found in protected areas, in particular the Empordà marshes and the Ebro delta, while the worst are those in the Llobregat and Tordera deltas.

In general, the bodies of water in worst condition are those located in highly populated areas and industrial and agricultural areas. The study of the status of bodies of water presented in the 2016-2021 Catalan river basin district management plan highlighted the large number of bodies of water affected by contamination from urban sanitation<sup>216</sup>, even though 95% of the population of Catalonia is connected to urban wastewater treatment facilities.

This is because the treatment plants built in the past (and even some recently built plants) were designed to remove a range of compounds that did not include substances later used to assess the status of bodies of water or, if they did, the plants do not perform to the standards required to prevent clear damage to the quality of the receiving bodies of water. In other words, there are sanitation facilities, but these are not adequate or sufficient to protect the quality of the receiving bodies of water.

In report 3/2015 on the Catalan river basin district management plan, the CADS recommended improvements to the maintenance and operation of WWTP to prevent

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<sup>214</sup> Own figures based on ACA 2012 report (2007-2012 data).

<sup>215</sup> [ACA report 2012](#) (2007-2012 figures). [Consulted: 7/07/16].

<sup>216</sup> According to IMPRESS2013 figures, 18% of underground bodies of water, 26% of rivers and 30% of coastal waters.

urban sanitation contributing to the contamination of water. It also noted that businesses must assume their responsibilities with regard to their impact on water resources, applying the polluter pays principle. The report also recommended prioritising the recovery of riverbeds and riverbanks, implementing measures to restore them based on ecosystem management techniques.

New pollutants are also an issue, including a wide range of compounds that are not covered by legislation but which are often found in the environment, such as antibiotics and other pharmaceutical products, plastic additives, nitrosamines and illegal drugs. For example, sulphonamides (a group of antibiotics widely used in veterinary treatments) were found in all the underground waters analysed in La Plana de Vic and La Selva, in concentrations ranging from 0.01 ng/l to 3,460.57 ng/l<sup>217</sup>. Cocaine has also been detected at inflows into WWTP in Catalonia, at levels between 4 ng/l and 4,700 ng/l<sup>218</sup>. Although these compounds were found in very low concentrations in waters that have not yet been treated, they represent a grave problem. Further research is needed to understand how they metabolise and strengthen controls.

An almost universal observation in this respect is that many of these new substances are found in practically every body of water around the world, including the most remote.

It is therefore important to reduce people's use of these substances. At the same time, it is necessary to assess whether the concentrations found are significant based on their known and measured effects on people and the environment and, if this is the case, to improve treatment plants' capacity to effectively remove these substances from wastewater.

In 2014 the total volume of reused water was 25 hm<sup>3</sup>. The volume of reused water peaked in 2007 and 2008, coinciding with periods of severe drought, and has gradually declined since then. The main use (over 65%) is environmental<sup>219</sup>.

The reuse of reclaimed water is one of the sources with greatest potential that Catalonia needs to develop. It should also be borne in mind that this is sector for research, development and innovation where Catalonia could and ought to be a world leader [[see SDG #9](#)], especially in the context of climate change.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ [Improve the status of Catalonia's bodies of water. To achieve this, businesses \(agriculture, fisheries and industries\) must assume their responsibilities with regard to their impact on water resources, applying the polluter pays principle. It also requires improvements to the maintenance and operation of WWTP to prevent urban sanitation contributing to the contamination of water. It is also important to restore riverbeds and riverbanks, using ecosystem management techniques.](#)

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<sup>217</sup> García-Galán, M. J.; Garrido, T., Fraile J. Ginebreda, A., Díaz-Cruz M.S., Barceló, D. '[Simultaneous occurrence of nitrates and sulphonamide antibiotics in two ground water bodies of Catalonia \(Spain\)](#)'. *Journal of Hydrology*, 2010.

<sup>218</sup> Ventura, F., Galceran, M. T., Boleda, M. R., Huerta-Fontela, M. 'Drogues il·lícites al medi aquàtic' [Contaminants emergents](#). Col·lecció-Documents de Treball, Sèrie-Medi Ambient, 5. Barcelona Provincial Council, 2011.

<sup>219</sup> [Medi Ambient a Catalunya. Informe 2014](#). Catalonia Ministry of Territory and Sustainability.

- ❖ Develop awareness-raising programmes so that water users (the public as well as the operators of agricultural, livestock and industrial activities) understand and accept their responsibility with regard to water pollution and thus the need to assume the costs thereof.
- ❖ Increase the use of reclaimed water, a source with great potential in Catalonia, and to foster research, development and innovation of this technology.

**6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

Catalonia has a Mediterranean climate with irregular rainfall and hot, dry summers. Climate change, which will particularly affect the Mediterranean area, is therefore a significant issue. It is estimated that in Catalonia available water resources will shrink by 18% on average, and more so in coastal areas (up to 22%)<sup>220</sup>, and extreme weather events will occur more frequently.

Water consumption in Catalonia was 2,830 hm<sup>3</sup>, of which 22% was supplied to homes, 72% was used for irrigation, 1.5% for livestock and 4.3% for industrial uses<sup>221</sup>. Inland basins, accounting for the majority of the population of Catalonia, supply 38% of the water consumed (mainly for domestic use) while the Catalan part of the Ebro basin supplies 62% (mainly for agricultural uses)<sup>222</sup>.

With regard to the inland basins, the 2016-2021 Catalan River Basin District Management Plan (pending approval) indicates that the water exploitation index for the entire basin is 32%<sup>223</sup>, with withdrawal deficits affecting the Muga and Ter Llobregat systems. Complementary sources will therefore be needed, with the capacity to supply 0.25 m<sup>3</sup>/s and 2 m<sup>3</sup>/s, respectively (potentially rising to 1.0 m<sup>3</sup>/s and 6 m<sup>3</sup>/s, respectively, in the future).

Consumption has reduced thanks to savings and efficiency measures introduced in Catalonia following the 2005-2008 drought: water consumption in 2007<sup>224</sup> was 2,965 hm<sup>3</sup>, in 2014<sup>225</sup> the figure was 2,830 hm<sup>3</sup>. Consumption was reduced for all uses (except livestock farming where consumption increased slightly by 1 hm<sup>3</sup>). Water for domestic supply fell from 661 hm<sup>3</sup> to 628, for crop irrigation from 2,114 hm<sup>3</sup> to 2,038 hm<sup>3</sup> and for

<sup>220</sup> Mas-Pla, J., Batalla, R.J., Cabello, A. [et al.]. *Recursos hidrològics. Tercer informe sobre el canvi climàtic a Catalunya*. Government of Catalonia and Institute of Catalan Studies. Unpublished work expected to be published in September 2016.

<sup>221</sup> [Medi Ambient a Catalunya. 2014 Report](#). Catalonia Ministry of Territory and Sustainability.

<sup>222</sup> [Estimació i prognosi de la demanda d'aigua a Catalunya. Bases tècniques](#). Catalan Water Agency, 2010.

<sup>223</sup> Water exploitation index (WEI) = (abstractions - returns) / renewable water resources

<sup>224</sup> [Appendix XI. Estimació i prognosi de la demanda d'aigua del Pla de gestió del districte de conca fluvial de Catalunya 2009-2015](#). Catalan Water Agency.

<sup>225</sup> [Medi Ambient a Catalunya. Informe 2014](#). Catalonia Ministry of Territory and Sustainability



industrial use from 179 hm<sup>3</sup> to 121 hm<sup>3</sup>. It is notable that water consumption levels in Catalan cities are among the lowest in the world.

It is therefore necessary to reconsider how the entities responsible for supplying water recover their costs, as their revenues are determined in terms of water supplied. Bearing in mind that infrastructure and operating costs are highly inelastic (i.e. they are constant irrespective of volume supplied), reducing volumes should allow them to increase the unit cost of water services.

As the CADS noted in report 3/2015, progress must continue on implementing savings and efficiency measures in every sector and ensuring that Catalonia is ready to deal with new periods of drought, taking into account the specific contributions of non-conventional sources (reclaimed water and desalination) for guaranteeing adequate water resources. In fact, Catalonia already has some internationally renowned facilities, but measures to encourage greater public awareness and acceptance are needed to prevent public alarm and major financial losses.

Studies are required into how better to use rainwater during heavy storms. Such water could provide new reserves and help some locations, such as industrial estates, become self-sufficient for water. This necessarily requires the use of available reservoirs and tanks, as well as existing aquifers, or new water storage structures may need to be built.

In the aforementioned report, the CADS proposes fostering open and transparent debate on the existing options for ensuring water resources in Catalonia are sufficient.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Continue making progress on measures to save and use water efficiently in all sectors (domestic, industrial and agricultural, including both irrigation and livestock farming).
- ❖ To ensure that Catalonia is ready to face new periods of drought, taking into account the specific contributions of non-conventional water sources (reclaimed water, desalination). In fact, Catalonia already has some internationally renowned facilities, but measures to encourage greater public awareness and acceptance are needed to prevent public alarm and major financial losses.
- ❖ To explore how to make better use of rainwater. Such waters could provide new reserves and help some locations to become self-sufficient for water.
- ❖ To carry out an in-depth, open and transparent examination of the existing options for ensuring water resources in Catalonia are sufficient.

#### **6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.**

The Water Framework Directive is the main European policy instrument with regard to water. The approach for water management established in this legislation is based on natural river basins, with the aim of ensuring the good ecological status of all bodies of water.



Catalonia is divided into the Catalan River Basin District (CRBD or inland basins) and basins shared with other autonomous communities (affluents of the Ebro, Garonne and Sénia rivers) in the Ebro valley area. The Catalan Water Agency is responsible for the water management of the CRBD while the Ebro Hydrographic Confederation is responsible for the inter-community basins.

In compliance with the requirements of the Water Framework Directive, a specific, 6-year management plan must be drawn up for each basin. The 2016-2021 Catalan River Basin District Management Plan is currently in the public consultation phase pending approval. The 2015-2021 Ebro Hydrological Plan came into force on 20 January 2016.

Although the Water Framework Directive and the river basin management plans represent a step forward in European water policy, more needs to be done to further the integrated management of water resources<sup>226</sup> in accordance with the Implementation Plan adopted at the Johannesburg World Summit in 2002.

Notable measures in Catalonia include the creation of inter-municipal networks supplying water from various sources and the existence of user communities.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Continue implementing the principles of the integrated water resources management, taking into account all the agents and sectors involved, the different sources of water, and how ecosystems work, especially the services linked to the water they provide.

## **6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.**

Ecosystems perform a range of functions in relation to water: forests and mountains collect and regulate water, mitigate flooding and contribute to the water cycle via evapotranspiration. Continental aquatic ecosystems also make a positive contribution to water quality.

In Catalonia, as in the rest of Europe, forest area increased between 1993 and 2009 by 5.39% (from 1,218,572 hectares to 1,284,252 hectares). This is especially important for Mediterranean climates: if potential evapotranspiration is much higher than rainfall, large forestry masses can impact negatively on the water cycle and reduce runoff into rivers and reservoirs. Correct forestry management to reduce forestry biomass is extremely important for the better regulation of the water cycle, especially in the current context of climate change [see SDG #13]. Furthermore, dry forests or those with low humidity pose a high risk of forest fires, with the resulting environmental problems and erosion.

In contrast, riverine woodlands shrank by 81 hectares between 2005 and 2009 (from 24,333 to 24,252 hectares). Riverine woodlands help to mitigate flooding, stabilise riverbanks and improve water quality. Resources must therefore be dedicated to restoring and recovering the services provided by these ecosystems. This includes

<sup>226</sup> The Global Water Partnership network defines the integrated management of water resources as a process that fosters the development and management of water, land and related resources in order to maximise economic and social well-being fairly and without compromising the sustainability of vital environmental systems.

controlling invasive species such as ailanthus (*Ailanthus altissima*) and the black locust tree (*Robinia pseudoacacia*), which have to be tackled in the early stages of colonisation, when eradication requires less effort and is usually more successful.

The surface area of rivers, lakes, lagoons and reservoirs has also increased by 16% (from 15,775 to 18,316 hectares). The rate of increase in recent years<sup>227</sup> was 4.85%, mainly due to the construction of new reservoirs (8.25%)<sup>228</sup>. The key factor, however, is the good status of these ecosystems, i.e. good water quality (an issue addressed under target 6.3) and in sufficient quantity. It is therefore vital to ensure the environmental flows of Catalonia's rivers are maintained.

This target is closely linked to [SDG #15](#) *Protect, restore and promote sustainable use of terrestrial ecosystems and inland fresh water ecosystems and the services they provide*.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Appropriately manage forests to optimise forest biomass that can, via evapotranspiration, reduce runoff into rivers and reservoirs and, furthermore, dry forests or those with low humidity pose a high risk of forest fire. This is especially important in the current context of climate change.
- ❖ Ensure that riverine woodlands are maintained in good condition (they help to mitigate flooding, stabilise riverbanks and improve water quality) and thereby recover the ecosystem services they provide.
- ❖ Ensure the environmental flows of Catalonia's rivers are maintained to guarantee the good status of water bodies and the effective functioning of related ecosystems.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 6

The CADS considers that the main challenges facing Catalonia with respect to SDG 6 are to:

- ❖ Guarantee supplies of drinking water to all, and ensure nobody is left without access to this basic requirement for economic reasons. This is not just in technical terms of ensuring there is a water supply, but also in terms of managing how the costs of the service are recovered.
- ❖ Ensure the good status of the bodies of water in Catalonia through improving the operation of WWTP and ensuring that economic activities that may affect water quality take responsibility where needed to prevent harm.
- ❖ Ensure water supplies by fostering savings and efficiency measures across all sectors (though it is noted that water consumption levels in Catalan cities are among the lowest in the world) and increasing the specific contribution of sources of reclaimed water and rainwater collection, turning this necessity into an opportunity

<sup>227</sup> 2005-2009.

<sup>228</sup> 4a edició del Mapa de Cobertes del Sòl a Catalunya (Catalan land usage map, 4th edition), September 2013.



that makes Catalonia a world leader in the research, development and innovation of this technology.

- ❖ Ensure that Catalonia is ready to face new periods of drought, taking into account the specific contributions of non-conventional water sources (reclaimed water, desalination). In fact, Catalonia already has some internationally renowned facilities, but measures to encourage greater public awareness and acceptance are needed to prevent public alarm and major financial losses.
- ❖ Carry out an in-depth, open and transparent examination of the existing options for ensuring water resources in Catalonia are sufficient.
- ❖ Guarantee that ecosystems function properly with regard to the water cycle, ensuring the environmental flows of Catalonia's rivers are maintained and ensuring the requirements of ecosystems are fully considered in the management of water resources.





## **7 ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL**

### **UNITED NATIONS 2030 AGENDA GOALS**

- 7.1** By 2030, ensure universal access to affordable, reliable and modern energy services.
- 7.2** By 2030, increase substantially the share of renewable energy in the global energy mix.
- 7.3** By 2030, double the global rate of improvement in energy efficiency.

## INTERNATIONAL CONTEXT

Access to energy is a vital factor for sustainable development: energy is essential for practically every activity (housing, food production, transport, business, job creation, etc.). However, not everyone on the planet has access to modern forms of energy. In 2012, for example, 15% of the world's population<sup>229</sup> (more than 1 billion people)<sup>230</sup> did not have access to electricity.

Fossil fuels continue to be the source of most primary energy (80% in 2012)<sup>231</sup>. Oil prices are currently low compared to recent years (Brent crude was trading at 33 dollars a barrel on 22 February 2016) indicating that the market is oversupplied. This is likely to continue at least until 2017, while the 2015 World Energy Outlook published by the International Energy Agency suggests a scenario in which low prices could continue until the middle of the next decade.

Greenhouse gas emissions (GHG) from the burning of fossil fuels are the main cause of climate change [see SDG #13]. It is calculated that 60% of total GHG emissions are generated from the use of energy (power generation, industrial uses, transport, combustion). Climate change targets are therefore linked to energy use targets and involve making more use of renewable energies and increasing energy efficiency.

Renewable energies account for 18% of final energy consumption worldwide and generate 21% of global electricity consumption, a trend that is increasing<sup>232</sup>. Global investment in renewable energy (fuels and electricity excluding large hydroelectric projects) totalled 270.2 billion dollars in 2014, up 17% on the previous year.

In the future, access to electricity is likely to grow and the use of renewables will increase, as will the use of new fuels from biorefineries.

With respect to energy efficiency, the primary energy intensity indicator as a proportion of GDP has improved slightly in recent years, and is currently 5.8 MJ/per dollar of GDP<sup>233</sup>.

## EUROPEAN CONTEXT

In the European Union 100% of the population has access to electricity<sup>234</sup>, but not everyone can enjoy power supplies at an accessible price or keep their homes sufficiently warm. This is what is referred to as energy poverty. Based on the survey of living conditions in Europe it is estimated that 54 million people (11% of the population) is in this situation<sup>235</sup>.

<sup>229</sup> World Bank figures: <http://data.worldbank.org/indicator/EG.ELC.ACCS.ZS/countries?display=graph>

<sup>230</sup> The Secretary General of the United Nations, Ban Ki-Moon, launched a global initiative "Sustainable energy for all" <http://www.se4all.org/>

<sup>231</sup> According to the Key World Energy Statistics for 2015, International Energy Agency: [www.iea.org](http://www.iea.org)

<sup>232</sup> World Bank figures for 2012: <http://data.worldbank.org/indicator/EG.ELC.RNEW.ZS/countries/1W?display=graph>

<sup>233</sup> US dollar in 2011 with purchasing power parity.

<sup>234</sup> World Bank figures. Op. Cit.

<sup>235</sup> Pye, S.; Dobbins, A. (2015). *Energy poverty and vulnerable consumers in the energy sector across the EU: analysis of policies and measures*. INSIGHT\_E Policy report. May 2015.

The main source of energy is oil (30%), followed by natural gas (24%) and coal (18%). Nuclear energy accounts for 14% of primary energy, and renewables around 13%. The European Union has to import just over half the energy resources it consumes (53% in 2014). This external energy dependency is mainly with respect to oil (87% of the oil consumed is imported) and natural gas (67%)<sup>236</sup>.

Renewable sources account for 16% of final energy consumption in the EU<sup>237</sup>. This is increasing and it is expected that Europe will meet its target of 20% by 2020.

Renewable sources are used to generate electricity, for thermal purposes, and in the transport sector. Electricity generation accounts for the largest part of these three areas: in 2013 around 25% of the electricity consumed in the EU was generated from renewable sources, one third of this from wind and solar sources. For thermal uses (heating and cooling), renewable sources account for 16.5% of consumption in the EU. Renewable sources accounted for just 5.4% of the fuel used for transport in 2013, although the target set by the European Renewable Energy Directive is 10% by 2020.

The energy efficiency target for 2020 (reducing energy consumption by 20% from the baseline, corresponding to a 13% reduction from 2005) looks likely to be achieved. In 2013 primary energy consumption was 8.3% lower than in 2005 and was decreasing by 1% a year. This reduction is due to improved energy efficiency but is also a result of the economic recession.

The implementation of renewable energies and improvements in savings and efficiency have helped reduce climate change causing greenhouse gas (GHG) emissions. It is estimated that by 2013 emissions were 19.8% lower than in 1990, when the target for 2020 was 20%<sup>238</sup>.

The targets set by the EU for the decade from 2020 to 2030 include reducing greenhouse gas emissions by 40% compared with 1990 and increasing the proportion of energy generated from renewable sources to at least 27%. These targets prepare the way for the GHG emissions reductions called for in the EU's energy and climate change roadmaps (60% by 2040 and 80 to 95% by 2050). In practice, this means eliminating all carbon from power generation in the EU by the middle of the 21st century.

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are therefore detailed below, structured in line with the 2030 Agenda targets.

### 7.1 By 2030, ensure universal access to affordable, reliable and modern energy

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[https://ec.europa.eu/energy/sites/ener/files/documents/INSIGHT\\_E\\_Energy%20Poverty%20-%20Main%20Report\\_FINAL.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/INSIGHT_E_Energy%20Poverty%20-%20Main%20Report_FINAL.pdf)

<sup>236</sup> Eurostat figures:

<http://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tsdcc310>

<sup>237</sup> 2014 estimate. EEA, 2015

<sup>238</sup> EEA, 2015. *Trends and projections in Europe 2015. Tracking progress towards Europe's climate and energy targets.* <http://www.eea.europa.eu/publications/trends-and-projections-in-europe-2015>



## services.

Access to electricity and other clean fuels is practically universal in Catalan homes so, based on United Nations indicators for this target<sup>239</sup>, Catalonia can be said to be performing well. In recent years, however, a clear problem of energy poverty has emerged in a significant number of homes, a problem found throughout Europe. According to figures from IDESCAT, in 2014 there were 683,000 people in Catalonia who could not keep their homes sufficiently warm<sup>240</sup>, i.e. around 9% of the population.

It therefore makes more sense in Catalonia to redefine this target in terms of energy poverty, which is in full agreement with the concept of universal access.

The CADS therefore proposes that this target be interpreted as meaning to ensure that everyone has access to enough energy to meet their domestic needs, and that nobody is required to dedicate an excessive part of their income to paying for household energy bills<sup>241</sup>. The target date for achieving this target, however, must be much sooner than 2030.

The relevant indicator is the percentage of the population in a situation of energy poverty. It would be useful to have an official definition and statistical indicator to effectively monitor this issue.

Action has been taken at various levels by public authorities to tackle this situation<sup>242</sup>. There are also social initiatives and proposals for dealing with this issue<sup>243</sup>.

In *CADS report 3/2014 on the energy challenges facing Catalonia to 2030*, one of the challenges identified was 'To reduce energy poverty for a section of the population'. Three causes were noted: (1) high energy prices (electricity, gas, etc.); (2) the inadequate quality of housing; and (3) low incomes.

Report 3/2014 included recommendations on the measures to be taken, including the need for structural measures. In addition to measures to boost prosperity and deal with individual situations of energy poverty, the CADS recommends creating guidance programmes to help the people most at risk and providing better support for improving the energy quality of buildings, such as setting up specific financial mechanisms and improving training for workers in the sectors involved.

The main challenges facing Catalonia with regard to this Agenda target are to:

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<sup>239</sup> There are two United Nations indicators: 7.1.1 Percentage of the population with access to electricity; 7.1.2 Percentage of the population with access to clean fuels and technology (compared with traditional solid fuels used for cooking, such as coal and wood, that cause air pollution in the home). These indicators are not used in Catalonia.

<sup>240</sup> <http://www.idescat.cat/pub/?id=ecv&n=7660>

<sup>241</sup> Based on the definition of energy poverty in the report by TIRADO et al. (2014) *Pobreza energética en España. Análisis de tendencias*. Environmental Sciences Association, Madrid

<sup>242</sup> For example, *Law 24/2015, of 29 July, on urgent measures to tackle the housing emergency and energy poverty*.

<sup>243</sup> See, for example, the proposals put forward by the Round Table for the tertiary social sector in Catalonia (<http://www.tercersector.cat/categoria-tematica/pobresa-energetica>); or the Alliance against energy poverty (<http://pobresaenergetica.es/>).

- ❖ Reduce fuel poverty in Catalonia through structural measures with medium-term (2030) outcomes, increasing the population's energy resilience and reducing the need for social welfare support.

## 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix.

The use of sources of renewable energy in Catalonia has grown over recent decades, but remains on a small scale, far from the targets set and the levels of other autonomous communities in Spain and other European countries.

The benefits of increasing the use of renewable energies include reducing climate change-causing GHG emissions [see SDG #13], diversifying sources and reducing dependence on imports (currently 92%), reducing dependence on fossil fuel markets and creating opportunities for improving the competitiveness of the Catalan economy.

In 2009 renewable energies accounted for 5.5% of gross final energy consumption<sup>244</sup>, well below the average for Spain. It seems unlikely that the target established in the 2012-2020 Catalan Energy and Climate Change Plan of 20.1% by 2020 will be achieved. It is worth noting that the renewable energy targets set in this Plan were very ambitious, and in the current situation it is likely that they will not be achieved (the targets set were 5,000 MW for wind power and 1,000 W for solar, 4 times current levels in the latter case).

With regard to the three areas where renewable energy may be used (electricity, thermal uses and transport), most progress has been made in the area of electricity, with power generated from renewable sources reaching 21.5% of the total in Catalonia in 2014<sup>245</sup>. Of this, 12.8% was hydroelectric and 6.7% wind power. Other renewables (solar, thermoelectric, biogas, etc.) accounted for 2%.

Renewables currently account for around 40% of power generation in Spain<sup>246</sup>, with installed wind capacity of 23,000 MW (of which one quarter is in Castile and León and only 1,262 MW in Catalonia, which ranks sixth for installed wind capacity). Much of the expansion of renewables took place between 2005 and 2012, driven by a favourable remuneration regime. From 2012 a change in this regime brought the installation of renewable capacity to a halt.

The two main sources of renewables for thermal uses are thermal solar energy and forestry biomass. In 2014 the Government of Catalonia approved a strategy for promoting the use of forestry and agricultural biomass in energy production with a target

<sup>244</sup> Latest energy figures for Catalonia, published by the ICAEN.

<sup>245</sup> This percentage refers to output, not consumption. Up-to-date figures are not available. However, it should be noted that power consumption in Catalonia normally exceeds production.

<sup>246</sup> 37.5% in 2015, while in 2014 the proportion was 42.8%, thanks to higher hydro production. REE figures (2016) *El sistema eléctrico español. Avance 2015*. Report on Spanish electricity system available from [http://www.ree.es/sites/default/files/downloadable/avance\\_informe\\_sistema\\_electrico\\_2015\\_v2.pdf](http://www.ree.es/sites/default/files/downloadable/avance_informe_sistema_electrico_2015_v2.pdf).

of increasing output 2.5 times to 172,800 toe by 2020. In Spain as a whole, renewables represent 15% of energy consumption for thermal uses<sup>247</sup>.

Geothermal energy has great potential which has not been largely developed in Catalonia. The most widespread use is the use of heat pumps to exploit very low temperature geothermal resources for heating buildings. According to figures quoted in the Catalan Energy and Climate Change Plan, installed thermal capacity in Catalonia is 10,700 kW, two thirds of this in Barcelona province.

Oil-based fuels continue to completely dominate the transport sector, and accounted for 95% of consumption in 2009. Only 3.2% of consumption corresponded to biofuels (biodiesel and bioethanol). This percentage may have increased slightly, but it is unlikely that the European target of 10% of renewables by 2020 will be achieved (biofuels that meet the EU's sustainability criteria and electricity from renewable sources).

The CADS proposes establishing a specific quantitative target in respect of target 7.2, to *substantially increase* the contribution of renewable energies to the Catalan energy system, based on the framework established by the EU and as set out in previous CADS reports<sup>248</sup>. Two additional targets are recommended<sup>249</sup>:

- a) *Renewable energy to account for 27% of final consumption by 2030.*
- b) *Renewable sources to provide at least 50% of the electricity consumed in Catalonia by 2030.*

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Speed up the development of renewable energy, with renewable energy accounting for 27% of final consumption and 50% of the electricity consumed in Catalonia.
- ❖ Facilitate and promote independent domestic production and consumption of energy from renewable sources (the current Spanish regulatory framework makes this extremely difficult).
- ❖ Adopt the structural measures needed to ensure the growth of renewable energies, including improving the distribution network (more linked up and with more connection nodes) and developing power storage systems (with a specific storage target such as other countries in the world have established)<sup>250</sup>.

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<sup>247</sup> EEA, 2015.

<sup>248</sup> CADS Report 4/2015 Informe sobre el pacte nacional per a la transició energètica.

<sup>249</sup> These two targets are complementary and compatible. The first refers to gross final energy consumption (EU target: 20% by 2020 and 27% by 2030). Electricity represented 27% of final energy consumption in 2009, and its share of energy services is growing.

<sup>250</sup> California has set a target for storing power in the network of 1,325 MW by 2020. <http://energy.gov/sites/prod/files/2014/06/t17/EACJune2014-3Charles.pdf>

- ❖ Foster ongoing R&D&I in the field of renewable energy as a mechanism for improving efficiency and as an area for smart specialisation in Catalonia and the creation of know-how and qualified employment.

### 7.3 By 2030, double the global rate of improvement in energy efficiency.

Energy savings and efficiency are the best means of ensuring a more sustainable energy system. The term 'negawatts' is used to refer to energy consumption saved thanks to an improvement in energy efficiency or a savings measure, with consequent economic, social and environmental savings.

Energy consumption is closely linked to the socioeconomic situation, as has been made clear by the reduction in energy consumption in recent years, especially since 2007. This reduction was due to the combined effects of improved efficiency, structural changes to the economy, population and the energy system and to declining economic activity.

The indicator proposed by the United Nations is that of primary energy intensity, linking the consumption of primary energy to GDP<sup>251</sup>. According to energy statistics from the ICAEN, in 2009 Catalonia's primary energy intensity was 170 toe/million euros<sup>252</sup>. This figure has been declining since before the economic recession, from a peak in 2003. The same indicator expressed in energy terms displays the same trends, and stood at a little over 100 toe/million euros in 2009, below the Spanish and European averages<sup>253</sup>. The energy intensity improvement target established in the Catalan Energy and Climate Change, in terms of final energy, is 1.47% per annum for 2007-2020, a cumulative improvement of 17.5%.

The reduction in energy intensity is due to the considerable effect of the economic recession on energy intensive activities such as construction and transport. Efficiency gains in some sectors have also made a contribution.

The reduction in energy consumption since 2007 can be seen clearly across economic sectors, especially industry and transport<sup>254</sup>:

- In **industry**, billed electricity consumption fell dramatically during the recession, dropping in early 2014 to 17% lower than in January 2007. Since then it has

<sup>251</sup> Reducing the primary energy intensity of GDP can mainly be achieved through structural changes to the economy towards less energy intensive sectors, allowing GDP to remain stable or increase with lower consumption; replacing energy sources that transform primary energy more efficiently into final energy (such as renewables); and implementing savings and efficiency measures that allow activity levels to remain stable or increase with lower energy consumption.

<sup>252</sup> GDP expressed in euros for year 2000. toe = tonne of oil equivalent Figures from the 2012-2020 *Catalan Energy and Climate Change Plan*, available from the ICAEN website.

<sup>253</sup> In comparison with Eurostat figures for 2009 (energy intensity of the economy) <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tsdec360>

<sup>254</sup> The following figures are taken from a report on the main energy indicators in Catalonia published by the ICAEN in May 2016 (latest figures March 2016): [http://icaen.gencat.cat/ca/pice\\_serveis/pice\\_estadistiques\\_energetiques/pice\\_resultats/pice\\_estadistiques\\_energetiques\\_conjuntura\\_de\\_cat/pice\\_indicadors\\_energetics/](http://icaen.gencat.cat/ca/pice_serveis/pice_estadistiques_energetiques/pice_resultats/pice_estadistiques_energetiques_conjuntura_de_cat/pice_indicadors_energetics/)

recovered slightly and is currently 12% below its initial level. The greatest reductions were in the glass-making, cement lime and gypsum industries.

- In the **transport sector** energy consumption between 2008 and 2013 fell by 23% mainly due to reduced transit levels, recovering slightly after 2014.
- Energy consumption in the **domestic sector** was not influenced by the recession to the same extent. Households have some potential for savings and efficiency using measures now available on the market such as lights, better insulation, efficient appliances, etc., but the greatest potential for improving efficiency is in the **construction** stage of buildings (materials, construction techniques, insulation, etc.).

The European directives on energy efficiency and the energy performance of buildings<sup>255</sup> have established measures such as the energy rating of buildings, requiring all new buildings after 2021 to be ‘nearly zero-energy buildings’ (public buildings from 2019), and obliging central governments to renovate each year at least 3% of the total floor area of the buildings they own or occupy. In other reports, the CADS has proposed that the Government of Catalonia also assumes these obligations<sup>256</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Achieve decisive advances in improving the energy efficiency of buildings (residential and commercial), encouraging the renovation of existing buildings and establishing highly ambitious targets for new buildings, and ensuring the effective application of the measures proposed in the Energy Efficiency Directive and the Energy Performance of Buildings Directive.
- ❖ Encourage public authorities to set an example and to promote energy efficiency, making progress on the renovation of their buildings and fostering public procurement of products and services that are energy efficient throughout their life cycle.
- ❖ Improve the energy efficiency of companies in the industrial sectors with the most intensive energy use.
- ❖ Establish annual energy savings targets for electricity supply companies.

## MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 7

The CADS considers that the main challenges facing Catalonia with respect to SDG 7 are to:

- ❖ Achieve effective universal access to energy services eliminating energy poverty well before 2030.
- ❖ Ensure renewable energy accounts for 27% of final consumption and 50% of the electricity consumed in Catalonia by 2030.

<sup>255</sup> See the website of the European Commission for further information: <https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings>.

<sup>256</sup> CADS report 3/2014. Els reptes energètics de Catalunya en l'horitzó 2030.

- ❖ Make significant progress towards independent domestic production and consumption of energy from renewable sources.
- ❖ Improve the distribution network and developing power storage systems to boost the development of renewable energy sources.
- ❖ Improve efficiency in all sectors, especially the most energy-intensive industries and in buildings in Catalonia.

#### OTHER KEY ISSUES

The CADS would like to reiterate the importance of having access to up-to-date energy statistics for Catalonia for the purposes of monitoring targets, comparison with other countries and communication concerning energy.

In July 2014 the CADS issued a report on the energy challenges facing Catalonia for the period to 2030 (Report 3/2014). In September 2015 it issued a report on the National Agreement on energy transition (Report 4/2015).

The content of both reports can be consulted via the following link:  
<http://cads.gencat.cat/ca/informes/informes-per-ambits-tematics/energia/>.





## **8 PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL**

### **UNITED NATIONS 2030 AGENDA GOALS**

- 8.1** Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7% gross domestic product growth per annum in the least developed countries.
- 8.2** Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.
- 8.3** Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.
- 8.4** Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead.
- 8.5** By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.
- 8.6** By 2020, substantially reduce the proportion of youth not in employment, education or training.
- 8.7** Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms.
- 8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.
- 8.9** By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.
- 8.10** Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all.

## INTERNATIONAL CONTEXT

The analysis of macroeconomic data suggests that world economic growth remains at low levels compared with growth rates before the economic and financial crisis of recent years. In 2015 world GDP grew by 3.1%<sup>257</sup>, a figure expected to fall to 2.5% in 2016 according to the UN forecast for economic growth<sup>258</sup>.

In less-developed countries it is estimated that growth in GDP for the year will be 4.8%, a figure well below the objective of 7% specified in Target 8.1 of this SDG. Moreover, GDP in countries such as Russia and Brazil is forecast to decrease in 2016.

This weakening of the economy has led to an increase in unemployment, which has reached 197 million worldwide, an increase of 27 million since before the economic crisis. It should also be borne in mind that 46% of employment is precarious or vulnerable (the level has remained stable). UNDESA forecasts indicate that unemployment will continue to grow and that in the next two years the number of unemployed people in the world will rise by 3 million<sup>259</sup>.

Unemployment among young people (aged 15 to 24) is around 13%, approximately 73 million people in absolute terms. Although a positive trend has been discernible since 2009, the situation varies considerably from one country to another. Certain serious problems are widespread, such as the poverty in which a third of young people in developing countries live. Although they work (90% in the informal economy)<sup>260</sup>, they live on less than 2 dollars a day. Moreover, the number of children aged under 15 who worked was 215 million in 2010, only 20% of whom received some kind of payment<sup>261</sup>.

A particularly complex problem is posed by the continued existence of different forms of forced work and slavery in the world: it is estimated that around 21 million people have been forced or deceived into doing work they cannot leave and that 7% of them (1.5 million) live in member states of the EU and other developed countries<sup>262</sup>. Migrants, indigenous peoples and children are especially vulnerable. It is estimated, for example, that 26% of those doing forced labour are children and young people aged under 18.

In this context, taken as a whole, it seems a new paradigm is emerging: that of the green economy, where economic competitiveness is compatible with decent professional development and respect for the environment. The United Nations Environment Program (UNEP) defines the green economy as an economy that improves the well-being of human beings and social equality while significantly reducing environmental risks and ecological shortages. It can lead to greater growth in GDP, allow poverty to be eradicated and create more jobs<sup>263</sup>.

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<sup>257</sup> [General Council of the Chambers of Commerce of Catalonia. Memòria econòmica de Catalunya 2015. Barcelona, 2016.](#)

<sup>258</sup> UNDESA. *World Economic Situation and Prospects as of mid-2016*. New York. 2016.

<sup>259</sup> ILO. *World Employment and Social Outlook*. Geneva. 2015.

<sup>260</sup> ILO. *Global Employment Trends for Youth 2015*. Geneva. 2015.

<sup>261</sup> ILO. *Accelerating action against child labour*. Geneva. 2010.

<sup>262</sup> ILO. Statistics and indicators on forced labour and trafficking.  
<http://www.ilo.org/global/topics/forced-labour/policy-areas/statistics/lang--en/index.htm>

<sup>263</sup> UNEP. *Green Economy Report*. 2010. Nairobi.

Finally, following the targets of this SDG in order, it should be pointed out that tourism is of special importance due to its global impact. The number of tourists has doubled in the last 20 years and the sector has hardly noticed the recession worldwide (there was only a slight dip in the number of tourists in 2009).

## EUROPEAN CONTEXT

European macroeconomic forecasts are moderately positive. Annual variations in GDP are positive but below 2% (1.6% for the Eurozone and 1.8% for the EU) and similar levels are forecast for the next two years<sup>264</sup>. However, there are significant differences between the economic data for individual EU member states.

The same applies to unemployment, which stood at 9% in the European Union in December 2015, an improvement on the previous year. However, levels of unemployment vary greatly between countries and regions, from 2.5% in some regions of Germany to 34.0% in some eastern European countries.

Among young people aged 15 to 24, 4.6 million (20.3%) are unemployed, while 6.6 million (12%) do not work, study or attend training courses. The NEET phenomenon (not in education, employment or training) is especially acute in Italy, affecting 1.2 million people (21.4%)<sup>265</sup>.

Figures for child labour also vary widely. Although only limited data are available, in some European countries the proportion of children aged under 16 who work ranges from 5% to 29%<sup>266</sup>.

Forced labour is not unknown in Europe either, where it is calculated that in 2010 there were 800,000 people trapped by deceit or coercion<sup>267</sup>. According to a report published in 2015 by the European Union Agency for Fundamental Rights (FRA), severe labour exploitation is common in the EU in sectors such as agriculture, building, hospitality and catering, domestic work and manufacturing. Those responsible for this illegal activity continue to act with impunity.<sup>268</sup>

As indicated in the report, differences in the definition of criminal labour exploitation in the different member states of the EU imply that there are also differences in what is considered criminal behaviour. In nearly all the member states of the EU workers from non-EU countries whose presence in the EU is irregular are protected from severe labour exploitation by certain provisions in criminal law. However, only four countries (Belgium, France, Germany and the Netherlands) protect their own citizens, whose right to residence is fully legal, from abuse of this kind.

The EU holds a very significant position with regard to world tourism, receiving approximately 50% of all tourists (about 584 million in 2014) and generating the world's

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<sup>264</sup> Spring 2016 Economic Forecast: Staying the course amid high risks. EC.  
[http://ec.europa.eu/economy\\_finance/eu/forecasts/2016\\_spring\\_forecast\\_en.htm](http://ec.europa.eu/economy_finance/eu/forecasts/2016_spring_forecast_en.htm)

<sup>265</sup> Eurofond (2016). *Exploring the diversity of NEET's*. EU

<sup>266</sup> EU Youth Report 2015 [http://ec.europa.eu/youth/policy/implementation/report\\_en.htm](http://ec.europa.eu/youth/policy/implementation/report_en.htm)

<sup>267</sup> ILO. *Global Estimate of Forced Labour*. 2012. Geneva

<sup>268</sup> [http://fra.europa.eu/sites/default/files/fra-media-memo-severe-labour-exploitation\\_es.pdf](http://fra.europa.eu/sites/default/files/fra-media-memo-severe-labour-exploitation_es.pdf)

largest volume of income from this activity.

Finally, the EU's efforts to develop mechanisms to reduce the environmental and social impact of economic activity should be mentioned. In this regard, at the end of 2015 the European Commission adopted a new legal package to move its economic model towards a circular economy<sup>269</sup>.

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are detailed below, based on the 2030 Agenda targets.

**8.1** Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7% gross domestic product growth per annum in the least developed countries.

In Catalonia **Gross Domestic Product (GDP)** shrank each year in the period 2009-2013 (except 2010 when an increase of 0.6% was recorded), with a particularly severe drop in 2009 (4.2%). Since 2014 GDP has grown, by 2% in that year and 3.4% in 2015<sup>270</sup>, higher than the EU average (1.4% and 1.9% respectively).

According to IDESCAT figures<sup>271</sup> Catalan GDP shows a 3.4% inter-annual increase in the second quarter of 2016, the fifth consecutive quarter with growth greater than 3%. Although the increase is less than that for the first quarter of the year (3.6%), it is above the Spanish average (3.2%) and nearly double the average for the EU-28 countries (1.8%).

The growth of the Catalan economy as a whole is driven by positive trends in internal demand, with a 3.2% year-on-year increase, together with an improvement in foreign trade, although this is more modest (0.5%). By sector, the performance of industry has been especially dynamic, closing the second quarter with a year-on-year increase of 3.6%, the highest figure since 2010. The contribution of building and services to GDP has decreased, however<sup>272</sup>.

Per capita GDP suffered a considerable decrease in the period 2008-2013, falling from 29,500 to 27,257 euros. A slight recovery can be seen after 2013 with GDP per capita for 2015 reaching 28,929 euros<sup>273</sup>. Nevertheless, these figures hide a drop in people's purchasing power<sup>274</sup>, which was 23% higher than the EU average in 2008 and only 14% higher in 2015<sup>275</sup>.

<sup>269</sup> [http://ec.europa.eu/environment/circular-economy/index\\_en.htm](http://ec.europa.eu/environment/circular-economy/index_en.htm)

<sup>270</sup> <http://www.idescat.cat/economia/inec?tc=3&id=8150&dt=201500&x=6&y=5>

<sup>271</sup> <http://www.idescat.cat/novetats/?id=2429>

<sup>272</sup> <http://www.idescat.cat/novetats/?id=2429>

<sup>273</sup> <http://www.idescat.cat/economia/inec?tc=3&id=8151&dt=201000&x=3&y=10>

<sup>274</sup> To compare the standard of living of people living in different countries, the GDP per inhabitant in terms of Purchasing Power Parity is used, as this eliminates differences in price levels in different countries.

<sup>275</sup> <http://www.idescat.cat/economia/inec?tc=7&id=8151&dt=201000>

In Catalonia the improvement in the general economic climate and the accumulation of wealth in the hands of a few have once again raised the issue of what can or should be done to reduce growing inequality<sup>276</sup>. According to a report on social inequality in Catalonia<sup>277</sup>, it is one of the places in Europe where inequality has increased most, with a concentration of income in the richest part of the population. Although levels of inequality in Catalonia were lower than the European average in the years before the recession, they are now above it [see SDG #5].

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Adopt structural measures in the Catalan economy which will allow the positive trend in interannual GDP to be maintained.
- ❖ Take measures to ensure a positive trend in per capita GDP in Catalonia.
- ❖ Increase the population's purchasing power, expressed as GDP per inhabitant in terms of Purchasing Power Parity.
- ❖ Reverse the present growth in income inequality between the richest and poorest segments of Catalan society via the adoption of policies to redistribute income and wealth.

## **8.2** Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.

The importance of different sectors in the economy is reflected in their contribution to gross value added (GVA)<sup>278</sup> analysed by sector<sup>279</sup>. In 2015 the service sector accounted for 74.8% of GVA, followed by industry with 19.6%, construction with 4.7% and agriculture with 1%. In the period 2000-2015 the service sector is the only one that has increased its percentage of GVA, which has risen from 62% to 74.8%. Industry reached a peak of 26.6% in 2001, falling to 18.5% in 2009 and stabilising in the last 6 years at 19.6-19.8%. Construction rose from 9.4% in 2000 to 11.9% in 2006, after which it declined, reaching 4.7% in the period 2014-2015. Agriculture has remained at 1% over the last decade.

It is important to analyse the productivity of sectors as well as their contribution to GVA. To quantify this, Apparent Productivity is used as an indicator, calculated as the GVA of the sector divided by the equivalent number of persons employed. According to the 2011 Input-Output Framework for Catalonia (MIOC 2011) drawn up by IDESCAT<sup>280</sup>, the real estate sector has the highest level of apparent productivity followed by financial services and insurance, information and communications services and industrial and

<sup>276</sup> <http://www.elperiodico.cat/ca/noticias/opinio/generacio-perduda-4683786>

<sup>277</sup> CERES (2014): *Informe sobre l'evolució de les desigualtats socials a Catalunya*. Número 53. *Documents sindicals*. Secretariat for communication and social networks. Centre for Trade Union Studies and Research (CERES). Comisiones Obreras Trade Union in Catalonia. May 2014.

<sup>278</sup> Net production valued at basic prices less intermediate consumption valued at cost.

<sup>279</sup> <http://www.idescat.cat/economia/inec?tc=7&id=8152>

<sup>280</sup> <http://www.idescat.cat/dades/mioc/2011/>

sanitation products, as shown in table 1:

**Table 1. Apparent productivity of economic sectors in Catalonia (2011)**

<b>Products (CPA)</b>	<b>Apparent productivity (Cat=100%)</b>
<i>Agricultural and fishing products</i>	48.8
<i>Industrial and sanitation products</i>	112.6
<i>Construction work</i>	104.5
<i>Trade, transport and catering services</i>	88.4
<i>Information and communication services</i>	135
<i>Financial services and insurance</i>	195.7
<i>Real estate services</i>	832.7
<i>Professional, scientific, administrative and auxiliary services</i>	72.8
<i>Public Administration, education and health services</i>	80.1
<i>Artistic, entertainment and other services</i>	49.6
<i>Total</i>	100

Source: Idescat, 2011.

Another important characteristic when analysing sectors is the total number of full-time equivalent jobs. In this case the smallest contribution is from the real estate sector, with 1.4% of the total, while trade, transport and hospitality account for most, with 29.2%. Industrial and sanitation products account for 17.6% of total jobs, a similar number to government, education and healthcare services (17.7%).

A substantial change occurred in the years 2013-2014 when GDP and employment rose but productivity per employee fell. This type of recovery will not improve people's standard of living. To achieve this it is indispensable to increase the productivity of work, understood as an increase in the volume of goods and services generated per person employed or per hour worked.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Increase the productivity of work.
- ❖ Increase the productivity of productive sectors via a transition towards a circular economy.



**8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small and medium-sized enterprises, including through access to financial services.**

Catalonia is a country with a long industrial history (the exact figures are shown in [SDG #9](#)) but one that has been severely affected by the recession. Nevertheless, in the last three years (2013-2015) industry has been recovering jobs and in 2015 it overtook services in job creation: the number of people employed in industry rose by 4.6% compared with 2014, while the number employed in building and services rose by only 0.7%<sup>281</sup>.

The renewed growth in job creation in industry slowed in the first half of 2016, when the service sector accounted for 8 of every 10 jobs created<sup>282</sup>. Industrial GDP also rose steadily in 2015 and the first half of 2016, with increases of 2.2% and 3.6% respectively<sup>283</sup>.

Catalonia favours a new economic model based on promoting reindustrialisation. The Pacte + Indústria (Industrial Agreement), which ten Catalan institutions (CCOO, UGT, Foment del Treball, Pimec, UB, UAB, UPC, Col·legi d'Economistes, Col·legi d'Enginyers industrials and Col·legi de Tècnics Industrials) have been promoting since December 2012, achieved one of its founding aims when it persuaded the Catalan Parliament and the Government of Catalonia to support the development of a major [National Agreement for Industry](#).

In the definition of the Agreement there is a more macroeconomic approach to pursuing a new inclusive growth model, rather than the microeconomic view taken by conventional industrial policy or the correction of marketing failures. It aims to go beyond industrial policy to tackle issues such as training, finance and infrastructures, taking a long-term view over several legislatures<sup>284</sup>. To draw up the National Plan six working groups were set up: Business competitiveness, Business dimensions and funding, Industry 4.0 and digitalisation, Training, Infrastructures and energy, and Sustainability and the circular economy<sup>285</sup>.

The Col·legi d'Enginyers Industrials has made 2016 the year of Industry 4.0<sup>286</sup>, considered the fourth industrial revolution, where the application of the Internet of Things (IoT) is moving towards the concept of intelligent manufacturing with software focusing on computerised production and all its processes interconnected by the Industrial Internet of Things, allowing production plants to be fully computerised.

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<sup>281</sup> General Council of the Chambers of Commerce of Catalonia. *Anuari d'Economia de Catalunya* 2015. 2016. Barcelona.

<sup>282</sup> [Ombres de la recuperació i de l'ocupació i la contractació a Catalunya](#). UGT August 2016

<sup>283</sup> <http://www.idescat.cat/novetats/?id=2429>

<sup>284</sup> [http://www.coleconomistes.cat/ASP/RESUMSPREMSA/El\\_Periodico\\_de\\_Catalunya13092016\\_1.pdf](http://www.coleconomistes.cat/ASP/RESUMSPREMSA/El_Periodico_de_Catalunya13092016_1.pdf)

<sup>285</sup> [http://www.govern.cat/pres\\_gov/AppJava/govern/notespremsa/295310/govern-fa-constitucio-pacte-nacional-industria-creacio-taula-grups-treball.html](http://www.govern.cat/pres_gov/AppJava/govern/notespremsa/295310/govern-fa-constitucio-pacte-nacional-industria-creacio-taula-grups-treball.html)

<sup>286</sup> <https://www.enginyersbcn.cat/collegi/any-industria-40/>



Industry 4.0 will be a decisive factor in improving productivity based on the optimisation of manufacturing processes, thanks to the interconnection of all the elements involved. However, according to the World Economic Forum, Industry 4.0 will have destroyed five million jobs by 2020.

The Catalan business community consists mainly of small and medium-sized businesses (slightly over 1% of businesses have more than 50 employees)<sup>287</sup>, with different legal formats in a wide range of sectors. The Catalan economy is very dynamic, with a high level of business creativity and has programmes for business creation and promotion. However, measures for the consolidation of new businesses are still pending. In this respect funding, ongoing training, internationalisation and the creation of stronger companies and groups which are able to compete in a global market could be key to strengthening businesses.

The Catalan entrepreneurial ecosystem is one of the main poles attracting employment, talent and investment in technology-based start-ups. In figures, Catalonia ended 2015 with 502 operations and investment of 371 million euros, 32.9% and 56.3% respectively of the total for Spain, according to the Spanish Venture Capital & Private Equity Association (ASCRI) figures which are ratified by the BBVA<sup>288</sup> centre for innovation.

Barcelona is the best European hub for start-ups and has the best rating according to the MOIC (Multiple on Invested Capital) indicator, which measures return on capital in relation to capital invested. According to data from PitchBook, Catalan venture capital generates the highest return in Europe. 30.8% of start-ups in Barcelona return 10 times the capital invested in them<sup>289</sup>.

According to Xarxa Emprèn<sup>290</sup> the typical Catalan entrepreneur is a woman (50.21%) aged 25 to 45 (60.28%), self-employed (78.34%) and resident in Barcelona (60.05%)<sup>291</sup>. In the case of Spain, typical entrepreneurs are men (83%), aged 25 to 44 (75%) with university studies (97%) a significant proportion being engineers (47%), with 51% having already created more than one start-up<sup>292</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Approve the National Agreement for Industry in Catalonia with a clear goal of leading the transformation to Industry 4.0 based on the circular economy.
- ❖ Strengthen measures to support entrepreneurship.
- ❖ Guarantee access to finance for start-ups.

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<sup>287</sup> <http://www.idescat.cat/economia/inec?tc=3&id=6004>

<sup>288</sup> [http://www.elnacional.cat/ca/economia/catalunya-startups\\_109939\\_102.html](http://www.elnacional.cat/ca/economia/catalunya-startups_109939_102.html)

<sup>289</sup> <https://pitchbook.com/news/articles/which-european-cities-generate-the-biggest-vc-returns>

<sup>290</sup> <http://catalunyaempren.gencat.cat/inicia/cat/que-es-xarxa-empren/index.jsp>

<sup>291</sup> [Memòria Xarxa emprèn 2015.  
http://catalunyaempren.gencat.cat/inicia/images/cat/memoriaXarxaEmpren2015\\_tcm124-119129.pdf](http://catalunyaempren.gencat.cat/inicia/images/cat/memoriaXarxaEmpren2015_tcm124-119129.pdf)

<sup>292</sup> [https://s3-eu-west-1.amazonaws.com/ssassetspro/docs/press/Mapa\\_Emprendimiento\\_2016\\_EN.pdf?timestamp=1473424241](https://s3-eu-west-1.amazonaws.com/ssassetspro/docs/press/Mapa_Emprendimiento_2016_EN.pdf?timestamp=1473424241)

- ❖ Provide educational opportunities in line with labour market requirements [see SDG #4 on education].

**8.4** Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead.

The current **linear model** for the economy has proved unsustainable in economic (rising prices for raw materials with cases of great volatility), environmental (unsustainable consumption of natural resources) and social (serious inequality) terms. The transition to a **circular economy** is a priority for those responsible for both the public and private sectors.

The application of the circular economy is characterised by a model in which the value of products, materials and resources is kept within the economy as far as possible and the generation of waste is minimised. Innovation plays a key role in the change from a linear to a circular model, which requires us to rethink the way in which we produce and consume and to transform waste into a resource.

This change calls for new technologies, new processes and business models that will determine the future of our economy and our society. A workforce qualified in specific skills (many of them new) will be needed, creating a niche for new jobs.

The circular model also includes the service sector, within which the **collaborative economy** already accounts for a significant proportion of the economic activity led by Millennials, the generation born between 1980 and 2000, who have ceased to be consumers of products and become service users. This fact explains much of the growth of the collaborative economy, which generally develops around a digital platform connecting service providers and users.

The projections made in studies carried out in Europe suggest that it could come to generate a business volume of 570 million euros by 2025. One controversial issue is the 'uberisation' or precarious situation of the employees operating these platforms. Work is in progress in Europe and in Catalonia to legalise this sector and ensure it contributes to economic development.

The Catalan initiative to improve efficiency in production and consumption and detach economic growth from the use of natural resources centres on the Catalan ecodesign strategy<sup>293</sup>, the strategy to promote the green economy and the circular economy<sup>294</sup> and the General Programme for the Prevention and Management of Waste and the

<sup>293</sup> [http://mediambient.gencat.cat/ca/05\\_ambits\\_dactuacio/empresa\\_i\\_produccio\\_sostenible/estrategia\\_ecodisseny/](http://mediambient.gencat.cat/ca/05_ambits_dactuacio/empresa_i_produccio_sostenible/estrategia_ecodisseny/)

<sup>294</sup> [http://mediambient.gencat.cat/ca/05\\_ambits\\_dactuacio/empresa\\_i\\_produccio\\_sostenible/economia\\_verda/impuls\\_economia\\_verda/](http://mediambient.gencat.cat/ca/05_ambits_dactuacio/empresa_i_produccio_sostenible/economia_verda/impuls_economia_verda/)

Management of Resources in Catalonia 2013-2020<sup>295</sup> (see [SDG 12 on sustainable production and consumption](#)).

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Facilitate the transition to a circular economy, promoting the use of an analysis of life cycles in decision-making, ecodesign, and other policies to reduce the consumption of resources and the generation of waste.
- ❖ Encourage research and innovation in the circular economy, as a means to increase the competitiveness of Catalan businesses.
- ❖ Recognise the importance of the collaborative economy and incorporate it in the economic system.

**8.5** By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.

The working population grew by 1.5% in 2015, with 45 thousand more people in work than in 2014. This increase brought the total workforce to 3,051,000 in 2015, still far short of the 3,559,000 recorded in 2008 (507,000 fewer)<sup>296</sup>.

The importance of demographic change and the labour market was analysed by the CADS in its report on the medium- and long-term demographic challenges in Catalonia: the labour market and the ageing population<sup>297</sup>. Since 2008 the working age population has fallen by 250,000, from 68% to 65% today.

In 2015 the increase in the workforce was 1.5%, less than in 2014, when it was 2.1%, indicating a slight slowing in the creation of jobs. The employment rate for the year was 64.2%, 1.3% more than 2014 but still 8.3% below the level for 2007.

In 2015 there was an increase in the number of people working in all sectors, with increases over 2014 figures of 4.6% in industry, 7% in agriculture and 0.7% in building and services. In 2015, of people aged 16 to 64 in employment, 73.5% were in the service sector, 19% were in industry, 6% in building and 1.5% in agriculture.

Despite the positive trend in employment in Catalonia in 2015, the level of employment is still well below that in 2008. Comparing the number of people in employment in 2015 with figures for each sector in 2008, we see a drop of 55.1% in building, 24.1% in industry, 22.8% in agriculture and 3.7% in services.

Figures for the labour market in 2016 indicate a shift to the tertiary sector and a concentration of employment in services but working conditions have become more precarious. In connection with this last point, the latest data for salaries<sup>298</sup> shows that the

<sup>295</sup> [http://mediambient.gencat.cat/ca/05\\_ambits\\_dactuacio/empresa\\_i\\_produccio\\_sostenible/](http://mediambient.gencat.cat/ca/05_ambits_dactuacio/empresa_i_produccio_sostenible/)

<sup>296</sup> General Council of the Chambers of Commerce of Catalonia. *Memòria Econòmica de Catalunya 2015*. 2016. Barcelona.

<sup>297</sup> [CADS report 5/2015](#)

<sup>298</sup> Enquesta d'estructura salarial (Survey of salary structure), National Statistics Institute, 2013.

average gross salary per worker was 24,253.73 euros. Salaries in industry and building were above the average at 28,897.03 euros and 25,864.15 euros respectively. However, salaries in the service sector were below the average, at 23,056.21 euros.

Lastly, in recent years we have seen the emergence of the poor worker, a person who, despite having paid employment, cannot meet basic living costs. The rate for the risk of poverty in employment is an indicator that shows the proportion of people who worked for at least seven months in the year in question and whose equivalent disposable income is below the threshold for risk of poverty.

In Catalonia between 2008 (start of the recession) and 2015 (latest figures available) the rate has risen from 8.6% to 11.2%. This is higher than the figure for poor workers in the European Union (9.6% in 2014)<sup>299</sup>.

Unemployment in Catalonia remains substantially above the level in Europe: 8.6% in the EU-28 (July 2016)<sup>300</sup> compared with 15.95% in Catalonia (second quarter of 2016). Youth unemployment (16-24 years old) is much higher than that of the population as a whole, at 8.9% in the EU-28 and 39.03% in Catalonia (fourth quarter 2015)<sup>301</sup>.

In the years 2008-2015<sup>302</sup> the active population (the number of those who are working or actively seeking employment, divided by the number of all those aged 16 and over) fell from 64.14% to 62.04%. In 2015 the rate was 67.6% for men and 56.80% for women<sup>303</sup>.

The pay gap between men and women in Catalonia in 2011 to 2013 (pay per hour) was around 20%<sup>304</sup> (higher than the European average of 16.4%<sup>305</sup>). [See SDG #5 on gender inequality]

Efforts to incorporate the disabled in the workforce have suffered a serious setback, many jobs having been lost and others becoming precarious<sup>306</sup>.

Employment depends on many factors but reducing the high level of unemployment in Catalonia involves a number of well known challenges whose solutions are complex: lack of training, an entrepreneurial structure which is too fragmented, among others. New approaches based on experiences which have been successful in Catalonia and other European countries, especially those that have a similar socio-economic profile, thus need to be tried.

During the recession 3.8 million jobs have been lost in Spain (600,000 in Catalonia), concentrated in that part of the population with a low or very low level of education: 75% of those who have lost their jobs belong to this group, while employment among those

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<sup>299</sup> <http://www.idescat.cat/economia/inec?tc=3&id=8515&dt=201400&x=8&y=6>

<sup>300</sup> [http://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment_statistics)

<sup>301</sup> <http://www.idescat.cat/treball/epa?tc=4&id=ic4001>

<sup>302</sup> The figures compared are always those for the fourth quarter of the year.

<sup>303</sup> <http://www.idescat.cat/economia/inec?tc=3&id=0608&dt=201204&cp=00>

<sup>304</sup> [Bretxa salarial entre homes i dones \(Wage gap between men and women\) 2013. IDESCAT](#)

<sup>305</sup> [Eurostat, 2013](#)

<sup>306</sup> Catalan Physical Disability Observatory (ODF). [L'ocupació de les persones amb discapacitat](#). Barcelona, 2015.

with higher studies has increased by 2%. Of the 2.2 million long-term unemployed (already unemployed before the recession), 70-75% have only primary schooling.

By age, young people (15 to 24 years old) have the highest rate of unemployment. In the second quarter of 2016 the rate of youth unemployment was 35.26%, substantially lower than the figure of 51.37% recorded in the second quarter of 2012. In the second quarter of 2008 youth unemployment stood at 16.19%<sup>307</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Prioritise the fight against youth unemployment and long-term unemployment.
- ❖ Support training for the unemployed.
- ❖ Support ongoing training for workers.
- ❖ Promote the employment and increased employability of those with physical and mental disabilities.
- ❖ Reduce the precariousness of employment.
- ❖ Reduce the risk of poverty in employment.

#### **8.6** By 2020, substantially reduce the proportion of youth not in employment, education or training.

The proportion of dropouts from education in 2015 was 18.9% (15.8% of women and 21.8% of men), very high figures compared with the EU as a whole, where the rate was 10.9% (12.3% for men and 9.5% for women). Although the figure for Catalonia is very high, it is considerably lower than that for 2008, when it was 32.9% (39.8% for men and 25.7% for women). It should be borne in mind that in the peak years of building activity, the payment of relatively high wages in the sector was a disincentive for youth training.

In the context of the recession, especially the crisis in real estate, this left thousands of young people without work or employment prospects. Youth unemployment (see Target 8.5) reached its lowest levels in 2008 when education dropout rates were at their highest. Catalonia has the third-highest proportion in Europe of young people who neither work nor study (21% of those aged 15 to 24 in 2012)<sup>308</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Reduce the proportion of NEETs.
- ❖ Reduce the proportion of dropouts in education.

#### **8.7** Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and

<sup>307</sup> <http://www.idescat.cat/economia/inec?tc=3&id=0608&lang=es&dt=201602&x=7&y=6>

<sup>308</sup> Ivàlua. *Joves vulnerables, Joves Ni-Ni: Quin és l'abast del problema i com s'està afrontant?* Barcelona, 2013.

elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms.

The European Union Agency for Fundamental Rights defines severe work exploitation as any form of exploitation in work which is against the law in the member state in question. Although Community criminal legislation only covers certain forms of exploitation in work, Article 5 of the EU Charter of Fundamental Rights prohibits slavery and forced labour, while Article 31 stipulates that all workers have a right to 'fair and just working conditions'.

According to the definition given by this agency, examples of severe exploitation in employment include working every day of the week for no pay or for an irregular salary, living in deficient or overcrowded conditions, separated from the rest of the community, or working without a contract and subject to constant threats of deportation.

At the time of writing we do not have reliable data that would enable us to determine the scope and nature of the situation regarding clandestine employment and labour exploitation in Catalonia.

Regarding child labour, the Directorate-General for Attention to Children and Adolescents<sup>309</sup> reports that each year 20 to 25 cases of child abuse are recorded related to crime, work or sexual exploitation. The prevalence of this type of situation calls for better mechanisms for early detection and quick action.

The main challenges facing Catalonia with regard to this Agenda target are:

- ❖ To reduce situations of clandestine employment and labour exploitation.
- ❖ To improve perception of the problem by gathering and publishing data.

**8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.**

Regulations on a safe working environment have been extensively developed in recent decades in Catalonia and Spain and must also comply with European legislation in this respect. The regulations deal with a wide range of cases and provide a response to current needs.

The rate of workplace accidents, expressed as the occurrence of accidents in working hours requiring absence from work per 100,000 workers exposed to risk, has fallen considerably, from over 8,000 in 2000 to nearly 3,000 in 2012, rising after that year to 3,195.07 in 2015<sup>310</sup>.

The main challenge facing Catalonia with regard to this Agenda target is to:

<sup>309</sup> [http://treballiaferssocials.gencat.cat/ca/ambits\\_tematics/infancia\\_i\\_adolescencia/dades-de-maltractament-infantil/](http://treballiaferssocials.gencat.cat/ca/ambits_tematics/infancia_i_adolescencia/dades-de-maltractament-infantil/)

<sup>310</sup> [http://www.govern.cat/pres\\_gov/AppJava/govern/notespremsa/180989/index-sinistralitat-laboral-catalunya-baixa-17-2-2012.html](http://www.govern.cat/pres_gov/AppJava/govern/notespremsa/180989/index-sinistralitat-laboral-catalunya-baixa-17-2-2012.html)



❖ Further reduce the rate of workplace accidents.

**8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.**

Tourism is one of the country's most important economic sectors and one of Catalonia's main sources of income. In 2012 it contributed 12% to the country's GDP<sup>311</sup>.

In 2015, tourist accommodation received 22.2 million travellers and accounted for 75.3 million overnight stays, an increase on the figures for 2014. In 2015 Catalonia was visited by 17.4 million tourists from abroad, who generated total spending of 15,735.5 million euros. The number of arrivals increased by 3.9% and spending by 4.1% compared with the previous year<sup>312</sup>, accounting for 25.6% of arrivals and 23.4% of expenditure in Spain as a whole. In the period 2010-2015 the number of visitors grew by 32% and total expenditure by 49%.

Of the 17.4 million international travellers visiting Catalonia in 2015, 15.7 million arrived via Catalan airports (4.6% more than in 2014), 64.7% of them travelling with low-cost airlines and the remaining 35.3% using traditional airlines.

At the end of 2015 there were 51,124 establishments offering tourist accommodation, with a total capacity of 834,901. Hotels provided accommodation for 79.6% of all travellers (17.6 million) and accounted for 69% of total overnight stays (52 million). Other types of accommodation accounted for the remaining 20.4% of travellers (4.5 million) and 31% of overnight stays (23.4 million).

At 31 December 2015 there were 369,733 employees in the sector affiliated to Social Security, 4.9% more than the previous year. However, a high proportion of jobs were temporary (26.9% in 2015), 5.6 percentage points higher than the figure for Catalonia as a whole (20.3%).

As pointed out in the 2013-2016 Strategic Tourism Plan for Catalonia and 2020 National Tourism Directives, the main challenge for Catalonia as a tourist destination is [to find a balance between quantity and quality, attracting tourism with greater value added to ensure the sector's economic, social and environmental sustainability in the future](#).

As detailed in this document, Catalonia has many strengths in the field of tourism, including the great wealth and diversity of tourism resources within an easily accessible area, its established reputation in Europe for sun and sand tourism, its strategic geographical location and good transport links with European markets, plentiful accommodation concentrated in a few locations, a mature tourist industry well established in Catalonia, infrastructures and public services that offer convenience and security to tourists, and the increased availability of and demand for quality services (linked to the growing internal demand for tourism, with and without overnight stays).

The main challenges facing Catalonia with regard to this Agenda target are to:

<sup>311</sup> [http://empresaiocupacio.gencat.cat/web/.content/20\\_-\\_turisme/coneixement\\_i\\_planificacio/recerca\\_i\\_estudis/documents/arxius/pla.pdf](http://empresaiocupacio.gencat.cat/web/.content/20_-_turisme/coneixement_i_planificacio/recerca_i_estudis/documents/arxius/pla.pdf)

<sup>312</sup> [http://observatoriempresaiocupacio.gencat.cat/web/.content/02\\_-\\_ambits\\_tematicos/turisme/03\\_-\\_balancos\\_activitat/01\\_-\\_anual/arxius/Balanc\\_turisme\\_anual-2015.pdf](http://observatoriempresaiocupacio.gencat.cat/web/.content/02_-_ambits_tematicos/turisme/03_-_balancos_activitat/01_-_anual/arxius/Balanc_turisme_anual-2015.pdf)



- ❖ Deal with increasing competition from other tourist destinations all over the world, both in value added and low cost products.
- ❖ Move further towards a model of tourism that focuses on levels of supply and demand rather than on quality, especially on the coast, seeking a balance in the availability of accommodation in areas where demand is excessive, ensuring the accommodation available is not obsolescent and improving the quality of the landscape (the basic resource for tourism).
- ❖ Adapt the tourism sector to the potential effects of climate change on tourism at beaches, which is especially vulnerable to changes affecting the coast, mountain tourism, where there is a high risk that there will be less snow, and rural tourism, which is particularly sensitive to changes in the landscape occurring as a result of climate change and the potentially greater risk of forest fires.
- ❖ Promote the deseasonalisation of tourism, increase levels of professionalism in tourism services and reduce the amount of temporary employment.
- ❖ Increase the availability of basic infrastructures to pursue excellence in tourism, including information services, the reliability of energy supplies and telecommunications networks, water supplies, wastewater treatment and waste management.
- ❖ Improve funding for municipalities that attract tourists (to also achieve the goals in the previous point) and increase coordination between the public and private sectors, both regarding the importance of sustainable tourism and in decisions on priority measures.

#### **8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all.**

The economic crisis had a profound effect on the banking and finance sector in Catalonia. The disappearance of most of the savings banks as a result of closures, mergers or incorporation into banks has led to a new scenario which is still changing. Generally speaking, the medium-sized institutions have disappeared, leaving large banks and some very small entities. It may be assumed that the process has not concluded and the modifications being made in response to European regulations will lead to further changes in the sector.

Throughout the recession there has been a serious lack of credit for businesses and consumers. This situation should have been resolved with the contributions of the European Central Bank but they have only led to limited access to credit.

As pointed out in [Target 9.3 regarding access to financial services](#), Catalan businesses are heavily dependent on financing by banks and make little use of other sources of funding (venture capital, the securities market, etc.). In Spain only 22% of businesses make use of alternative financing, while 70% of businesses do so in the United States,

55% in France and 45% in Germany<sup>313</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Take advantage of the mechanisms offered by the European Union to facilitate access to credit, paying special attention to supporting small and medium-sized enterprises, which account for a substantial proportion of our businesses.
- ❖ Consolidate instruments for alternative forms of financing, with a view to facilitating increased use of such alternatives among businesses.
- ❖ To consolidate instruments for alternative forms of financing, with a view to facilitating increased use of such alternatives among businesses.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 8

The CADS considers that the main challenges facing Catalonia with respect to SDG 8 are to:

- ❖ Bring about Catalonia's economic recovery, reducing economic inequality.
- ❖ Increase the productivity of work.
- ❖ Approve the National Agreement for Industry in Catalonia with a clear goal of leading the transformation to Industry 4.0 based on the circular economy.
- ❖ Promote the circular economy and recognise the collaborative economy in the present economic system.
- ❖ Prioritise the fight against youth unemployment and long-term unemployment.
- ❖ Reduce the risk of poverty in employment and levels of precarious employment.
- ❖ Reduce dropout rates in education and the number of young people who are not in education, employment or training.
- ❖ Guarantee financing for Catalan businesses and entrepreneurs.

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<sup>313</sup> <http://www.joanbcasas.cat/2015/06/01/el-mercat-del-credit-i-de-les-pimes/>

## **9 BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION**

### **UNITED NATIONS 2030 AGENDA GOALS**

- 9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
- 9.2** Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.
- 9.3** Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets.
- 9.4** By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.
- 9.5** Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.

## INTERNATIONAL CONTEXT

As the United Nations Industrial Development Organization (UNIDO) explains, basic infrastructures such as roads, water and power supplies, drainage, information and communication technologies, among others, make it possible to ensure income for the disadvantaged and achieve improvements in health and education. They are also indispensable for economic activity: they facilitate access to markets, places of employment, information and training, acting as a catalyst for business in general.

Today, 1,100 million people in the world live without access to electricity, 800 million do not have drinking water readily available and 2,500 million do not have access to a drainage system for waste water. Moreover, 3,000 million cook with fuels such as kerosene, wood or dung<sup>314</sup>. Overcoming the digital divide is key to ensuring equitable access to information and knowledge, and promoting innovation and entrepreneurship, but currently there are 4,000 million people (90% of them in developing countries) who do not have access to the Internet.

Industry continues to be a driving force in the world economy and in 2014 value added for world manufacturing reached a record 9.2 billion dollars<sup>315</sup>. However, there are major differences between value added per capita for manufacturing in developed countries (USD 4,926 in 2015) and less developed countries (less than USD 100)<sup>316</sup>. The ratio of this value added in manufacturing to GDP fell from 21.4% to 14.7% worldwide between 1990 and 2014<sup>317</sup>. In emerging and developing industrial economies the ratio between the value added for industrial products and GDP rose from 16.2% in 1990 to 20.5% in 2014, but in industrialised countries the ratio fell from 15.4% in 1990 to 14.5% in 2014<sup>318</sup>.

World exports grew by 7.7% between 2005 and 2013, and in 2013 world trade was in excess of 18 billion dollars, industrial products accounting for 84% of the total<sup>319</sup>.

Industry also has a very significant impact in terms of job creation: in 2009 it generated 470 million jobs worldwide (around 16% of the total), a figure which had risen to 500 million by 2013. Moreover, industrial employment has a positive multiplier effect, as each job in industry creates 2.2 jobs in other sectors of the economy<sup>320</sup>. The creation of jobs in industry and related services also leads to increased income for many families.

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<sup>314</sup> The World Bank (2015): [\*Progress towards Sustainable Energy. Global Tracking Framework 2015\*](#). New York, The World Bank.

<sup>315</sup> United Nations Industrial Development Organization, 2015. [\*Industrial Development Report 2016. The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development\*](#). Vienna.

<sup>316</sup> United Nations figures: <http://unstats.un.org/sdgs/report/2016/goal-09/>

<sup>317</sup> [\*Manufacturing, value added \(% of GDP\)\*](#). World Bank figures.

<sup>318</sup> United Nations Industrial Development Organization, 2015. [\*Industrial Development Report 2016. The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development\*](#). Vienna.

<sup>319</sup> United Nations Industrial Development Organization, 2015. [\*Industrial Development Report 2016. The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development\*](#). Vienna.

<sup>320</sup> United Nations website: <http://www.un.org/sustainabledevelopment/infrastructure-industrialization/>

Small and medium-sized enterprises engaged in industrial manufacturing and processing are the most important in the initial stages of industrialisation and they are generally the main creators of employment. Currently they account for 90% of the world's businesses and provide 50% to 60% of jobs<sup>321</sup>.

As many countries are tending to develop less energy-intensive industries, which are cleaner and more efficient, in many parts of the world the level of emissions in relation to GDP is falling<sup>322</sup>, the average decreasing from 0.38 to 0.33 between 2000 and 2013. In developed countries the reduction in this indicator was 0.37 to 0.29 and in developing countries from 0.36 to 0.34<sup>323</sup>.

The ratio of spending on research and development to GDP grew worldwide from 1.99% in 1996 to 2.17% in 2012. The OECD countries recorded good figures for this indicator, with investment increasing from 2.14% to 2.47%, while in North America it rose from 2.38% to 2.69%<sup>324</sup>.

At the same time there has been an increase in the number of those working in research and development. In 2000 there were 1,083 researchers per million inhabitants, while in 2010 there were 1,268. The figures for OECD countries were also good in this aspect, with 3,332 researchers per million inhabitants in 2010, North America having 3,944<sup>325</sup>.

## EUROPEAN CONTEXT

Having an efficient transport system is essential for the European economy. According to the European Commission, goods transport will grow 80% and passenger transport 50% by 2050<sup>326</sup>.

Passenger transport by land grew between 2003 and 2013 but 6.4% below growth in GDP at constant prices. Cars are the most frequently used form of transport (83.2% of passenger-kilometres), followed by buses (9.2%) and trains (7.2%). While the use of cars has remained stable in recent years, that of buses has decreased and that of trains has increased. Air travel is also an important form of transport, with 880 million passengers in 2014, while maritime transport accounted for 400 million passengers in 2013<sup>327</sup>.

In the EU-27 countries goods transport also increased less than GDP at constant prices in the period 2003-2013. It has been estimated that in 2013 land transport moved 2.2 billion tonne-kilometres: 74.9% by road, 18.2% by rail and 6.9% by navigable inland waters. Compared with 2008 figures, road transport had fallen 0.6% by 2013, the same amount by which transport by navigable inland waters had risen. The figures for rail transport in this period remained stable. National and international air transport in the

<sup>321</sup> United Nations website: <http://www.un.org/sustainabledevelopment/infrastructure-industrialization/>

<sup>322</sup> kg of CO<sub>2</sub> per US dollar at 2010 constant values.

<sup>323</sup> United Nations figures: <http://unstats.un.org/sdgs/report/2016/goal-09/>

<sup>324</sup> World Bank figures: <http://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS>

<sup>325</sup> World Bank figures: <http://data.worldbank.org/indicator/SP.POP.SCIE.RD.P6?view=chart>

<sup>326</sup> European Commission: [http://europa.eu/rapid/press-release\\_MEMO-14-525\\_en.htm](http://europa.eu/rapid/press-release_MEMO-14-525_en.htm)

<sup>327</sup> [Passenger transport statistics](#), Eurostat 2016

EU-28 countries was 14.4 million tonnes in 2014, while maritime transport accounted for 3,800 million tonnes<sup>328</sup>.

Industry is the backbone of the European economy, accounting for 80% of European exports and generating highly qualified jobs. However, as a result of the recent economic crisis, industry came to account for only 15% of GDP<sup>329</sup>.

About one in every ten (9.4%) non-financial businesses in the European Union are engaged in manufacturing, i.e. a total of 2.1 million businesses, which generated 1.62 billion euros of added value in 2012, this sector being the largest contributor to added value in the non-financial economy (26.2%)<sup>330</sup>. Nevertheless, the ratio of added value in manufacturing to GDP in the EU fell from 21.24% in 1992 to 15.40% in 2015 (after recovering from a fall to 14.82% in 2009)<sup>331</sup>.

In 2012 the manufacturing sector employed 30 million people and was the second-largest non-financial sector in terms of contributing to employment (22.4%)<sup>332</sup>.

In the EU-28 small and medium-sized enterprises<sup>333</sup> (SME) account for 99.8% of non-financial businesses (22.3 million businesses), employ two-thirds of workers (67.1%) and provide 57.3% of value added<sup>334</sup>. 92.7% of businesses in the non-financial commercial economy are micro-businesses<sup>335</sup>, which account for 29.1% of employment and 21% of the value added for this group.

In 2011, the European Commission approved a revision of<sup>336</sup> The Small Business Act for Europe as part of the Europe 2020 Strategy, with a view to overcoming obstacles to the growth of small and medium-sized enterprises and their job-creation potential. These include financing (it should be borne in mind that since 2007 the level of investment in the European Union has fallen by more than 400 billion euros). Consequently, in November 2014 the Commission announced an Investment Plan for Europe. In its first year of application it allocated 12.8 billion euros to financing different projects and businesses, which is expected to benefit over 140,000 SMEs all over Europe<sup>337</sup>. In September 2016 the Commission announced a further 315 billion euros of investment.

In 2014 the European Union had reduced greenhouse gas emissions by 22.9% compared with 1990 levels, thus achieving the 2020 target<sup>338</sup> of a 20% reduction in emissions of these gases. The intensity of emissions with respect to GDP was also

<sup>328</sup> [Freight transport statistics](#). Eurostat.

<sup>329</sup> [http://ec.europa.eu/growth/industry/index\\_en.htm](http://ec.europa.eu/growth/industry/index_en.htm)

<sup>330</sup> [Manufacturing statistics - NACE Rev. 2](#). Eurostat, 2015.

<sup>331</sup> World Bank figures: <http://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=EU>

<sup>332</sup> [Manufacturing statistics - NACE Rev. 2](#). Eurostat, 2015.

<sup>333</sup> These businesses employ fewer than 250 workers.

<sup>334</sup> [Business economy - size class analysis](#). Eurostat. Figures for 2012:

<sup>335</sup> These businesses employ fewer than 10 workers.

<sup>336</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0078&from=EN>

<sup>337</sup> [Èxit del pla d'inversions per a Europa en el seu primer any](#). European Commission.

<sup>338</sup> [Greenhouse gas emission statistics](#). Eurostat.

reduced, the index falling from 0.355 in 2000 to 0.205 in 2011<sup>339</sup>.

The European Commission has set itself three main objectives regarding sustainability and industry: achieving a competitive low-carbon economy, making more efficient use of resources by means of the circular economy, and legislating on ecodesign and energy labelling<sup>340</sup>.

The Europe 2020 strategy establishes the goal of improving conditions for innovation, research and development (R&D) to raise spending on public and private research to 3% of GDP by 2020. In fact, this objective was already included in the Lisbon Strategy for 2010. However, between 2002 and 2007, spending on R&D remained stable at 1.8%, reaching 2.03% in 2014<sup>341</sup>. The number of researchers per million inhabitants grew from 2,030 in 1996 to 3,430 in 2013<sup>342</sup>, but with an uneven distribution, being concentrated in a small number of groups in those regions where there is more R&D, generally in the capitals of those regions<sup>343</sup>.

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are detailed below, structured in line with the 2030 Agenda targets.

**9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

Infrastructures are fundamental for the organisation and regional balance of a country. There are many types of infrastructure: transport, power supplies, waste management, healthcare (hospitals, primary healthcare centres), education (primary schools, secondary schools, universities), cultural facilities (libraries, theatres), etc. and all of them reflect a certain model of organisation in a country.

As analysing each of Catalonia's infrastructures is not the object of this report and would fall outside its scope, in this document CADS presents a more detailed examination of transport, energy and telecommunications infrastructures, highlighting challenges which are applicable on a wider scale.

Passenger and goods **transport** should facilitate economic and social development and this should be sustainable. Private cars are the predominant form of passenger transport in Catalonia<sup>344</sup> (in 2013 they accounted for 75.1% of total passenger transport in the

<sup>339</sup> [CO2 emissions \(kg per PPP \\$ of GDP\)](#). World Bank figures.

<sup>340</sup> [http://ec.europa.eu/growth/industry/sustainability/index\\_en.htm](http://ec.europa.eu/growth/industry/sustainability/index_en.htm)

<sup>341</sup> [Europe 2020 indicators - research and development](#). Eurostat. Figures for March 2016.

<sup>342</sup> [Researchers in R&D \(per million people\)](#). World Bank figures.

<sup>343</sup> [Research and innovation statistics at regional level](#). Eurostat. Figures for March and May 2015.

<sup>344</sup> For Spain as a whole the figure was 80.7% and for the European Union 83.2%. [Transport de passatgers en turismes respecte al transport interior total \(Share of inland passenger car transport\)](#). IDESCAT figures.



country). Of passengers travelling by rail 88.8% use the local rail network (4.7% use regional trains and 5.3% use long distance services<sup>345</sup><sup>346</sup>).

Passenger travel by air has doubled since 2000 (from 20.7 million passengers to 42.2 million in 2015) and the number of passengers travelling through the ports of Barcelona and Tarragona has risen from 1.43 million to 3.7 million<sup>347</sup> (nearly all in Barcelona).

In the case of goods, a very high percentage is carried by road, 97.2 of total tonne-kilometres in 2013. This figure has remained virtually stable since 2000 (when it was 97.4%) and is slightly higher than the figure for Spain as a whole (95.4%) and considerably above that for the EU (75.5%)<sup>348</sup>. On the other hand, goods transported by rail in Europe in 2013 accounted for 24.5% of total tonne-kilometres, while the figure for Catalonia was only 2.8%<sup>349</sup>.

As in the case of passengers, the transport of goods by air grew between 2000 and 2015, rising from 87,705<sup>350</sup><sup>351</sup> tonnes to 117,315 tonnes, while the transport of goods by sea increased from 18.85 million tonnes to 32.13 million.

We can thus see that both passenger and goods transport in Catalonia are mainly by road and heavily dependent on fossil fuels.

With regard to passenger transport, as pointed out by CADS in its Report 2/2016 on the 2020 passenger transport plan for Catalonia, it is important to encourage a change in the choice of mode of transport and reduce the use of private transport, which calls for the design of infrastructures to facilitate this (networks of car parks for private vehicles at the main public transport nodes, spaces reserved for bicycles and pedestrians, etc.) and improvements to the public inter-urban and inter-regional transport network. To achieve this, investments which provide the greatest economic, social and environmental benefits must be prioritised, government bodies must apply uniform, transparent criteria to establish priorities and budgets need to be planned and used effectively in accordance with the objectives they specify.

It is also important to promote the wider use of efficient, low-emissions vehicles, especially electric vehicles, with a network of recharging points available all over the country. In June 2016 the Government of Catalonia approved a plan of action for the implementation of an infrastructure for electric vehicles, which envisages the installation of over 21,000 new charging points (in addition to the 4,000 which already exist) by 2019.

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<sup>345</sup> Includes passengers using conventional long-distance, high-speed and international services.

<sup>346</sup> [Ferrocarri. Transport de viatgers i mercaderies \(Railways. Passenger and goods transport\)](#). IDESCAT figures.

<sup>347</sup> [Ports de Barcelona i Tarragona. Moviment de vaixells i mercaderies \(Ports of Catalonia. Movements of vessels and goods\)](#). IDESCAT figures.

<sup>348</sup> [Transport interior de mercaderies \(Share of inland freight transport\)](#). IDESCAT figures.

<sup>349</sup> [Transport interior de mercaderies \(Share of inland freight transport\)](#). IDESCAT figures.

<sup>350</sup> [Transport aeri. Moviment d'aeronaus, passatgers i mercaderies \(Air transport. Movement of aircraft, passengers and goods\)](#). IDESCAT figures.

<sup>351</sup> [Ports de Catalunya. Moviment de vaixells i mercaderies \(Ports of Catalonia. Movements of vessels and goods\)](#). IDESCAT figures.

Regarding road infrastructures, as pointed out by CAREC in its report on Catalonia's economic future and goals<sup>352</sup>, published in 2012, the challenge lies not so much in the provision of roads as in ensuring that their management, use and maintenance are efficient and competitive, with a model that internalises costs and incorporates the user pays and polluter pays principles. In this respect it is important to avoid duplicated or oversized infrastructures. It is also essential to invest in the conservation and maintenance of existing roads, both to maximise the economic, social and environmental returns from the current network and to ensure the coherence of road safety policies based on the 'zero victims' goal.

In connection with goods transport, a key element is strengthening the role played by the railways. To this end the construction of the Mediterranean Corridor is indispensable, with good connections to Catalonia's two main ports (Barcelona and Tarragona). As well as the investment necessary to provide sufficient capacity, the Mediterranean Rail Corridor needs support from management measures related to intermodality and interoperability to make freight transport by rail competitive in terms of cost, time and reliability.

In the light of the substantial growth in passenger and freight traffic by air, it is important for Catalonia to be able to define the model for the country's airports. Barcelona airport should become a long distance or inter-continental hub.

The consumption of **primary energy** in Catalonia in 2009 was 24,297.2 ktoe, of which 47.2% came from oil, 24.6% from natural gas, 20.1% from nuclear power and 4.1% from renewable sources<sup>353</sup>. The problems related to this heavy dependence on fossil fuels are very familiar: excessive dependence on imports, climate change, atmospheric pollution. As explained in report 3/2014 on the challenges for Catalonia for 2030, CADS considers it indispensable to promote the transition to a new energy model [see **SDG #7 Energy**]. This new model will have to guarantee reliable, efficient and affordable energy supplies, meeting people's energy requirements and ensuring Catalonia's competitiveness, reducing greenhouse gas emissions and incorporating environmental and social externalities within the context of an efficient, transparent market.

However, to make this transition the necessary infrastructures must be in place and we must be able to design and implement an energy policy that allows the potential of renewable energy sources to be developed to the full, a varied energy mix to be established which is less centralised and interconnected by means of smart networks, and with adequate storage capacity. A model of governance also needs to be established to allow the whole of society to carry out this transition jointly and by common agreement.

The three nuclear power stations in Catalonia, which currently provide approximately 50% of the electricity generated in this country, will reach the end of their 40-year working life in the 2020s and plans must be made for this contingency. For this reason the CADS report recommended that a debate should be initiated on the future of nuclear power. This is an urgent matter which should be approached rigorously and fearlessly.

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<sup>352</sup> [Catalunya: visió i objectius econòmics de futur](#). CAREC, 2012.

<sup>353</sup> Figures from the ICAEN website:  
[http://icaen.gencat.cat/ca/pice\\_serveis/pice\\_estadistiques\\_energetiques/pice\\_resultats/pice\\_estadistiques\\_energetiques\\_anuals\\_de\\_catalunya/pice\\_balanc\\_energetic/](http://icaen.gencat.cat/ca/pice_serveis/pice_estadistiques_energetiques/pice_resultats/pice_estadistiques_energetiques_anuals_de_catalunya/pice_balanc_energetic/)

**Information and telecommunications technologies** have become indispensable to our society, both in business and for domestic users.

In 2010 the European Commission published its Digital Agenda as part of the 2020 Europe Strategy, with the aim of developing sustainable social and economic benefits from a digital single market, based on the Internet and fast and ultra-fast interoperative applications. In 2013 the Government of Catalonia approved a digital strategy for Catalonia in 2020<sup>354</sup>, one of whose aims is to provide 100% broadband coverage throughout Catalonia.

According to the data from the latest survey of the availability and use of ICT in Catalan homes, 79.5% have broadband Internet service. However, although 99.5% of homes with net monthly income over 2,500 euros have broadband Internet, only 51.5% of homes with income below 900 euros have this service. Differences can also be seen according to the size of the municipality: in municipalities with more than 100,000 inhabitants and provincial capitals 82.5% of homes have broadband Internet service, whereas the figure for municipalities with fewer than 10,000 inhabitants is only 74.8%. These differences are even more pronounced in the case of cable access to the Internet, with 38.1% in the first case and 7.6% in the second<sup>355</sup>.

In a digital society like ours it is essential for access to good broadband connections to be available for everyone throughout the country. The issue is therefore also related to **SDG #1 Poverty**.

On a more general level the CADS also highlighted two issues related to the resilience of infrastructures: climate change and the speed with which technological and social changes occur.

The possible effects of **climate change** on infrastructures need to be taken into account, especially those related to extreme weather phenomena. According to a study by the European Commission, it has been calculated that losses caused by extreme weather conditions and affecting energy, transport, industrial and social infrastructures, which are currently 3,400 million euros a year, could triple by 2020, increase sixfold by mid century and be ten times greater by the end of the century. According to the same study, southern European regions (including Catalonia) are the most vulnerable and will suffer the effects of climate change more severely<sup>356</sup>.

The *Third report on climate change in Catalonia* also mentions that studies point to an increase in extreme temperatures, heat waves, tropical conditions at night, hot nights and days and long periods of hot weather, especially in mountain areas in summer. Although these scenarios are not guaranteed, the possible increase in torrential rainfall would imply an increase in the risk of flooding and, at the same time, there are indications that droughts could be increasing in frequency and duration. Future scenarios also point to growth in the number of fires if new fire control measures are not

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<sup>354</sup> [digital, the Government of Catalonia's digital strategy](#).

<sup>355</sup> [Enquesta sobre equipament i ús de TIC a les llars \(survey on ICT equipment and use in homes\) 2015](#). IDESCAT figures.

<sup>356</sup> Forzieri, G., Bianchi, A., Marin Herrera, M.A., Batista e Silva, F., Feyen, L. and Lavalle, C., 2015. [Resilience of large investments and critical infrastructures in Europe to climate change](#). EUR 27598 EN. Luxembourg (Luxembourg): Publications Office of the European Union.

introduced<sup>357</sup>, while increases in sea level and the number of storms with tidal surges on the Catalan coast also need to be taken into account<sup>358</sup>.

For this reason, it is important to incorporate measures to ensure the resilience of infrastructures in new projects and the modernisation of existing projects in the face of climate change and to develop programmes for specific measures to deal with emergency situations in the event of extreme weather phenomena.

Another point to be borne in mind is that social and technological changes occur quickly and in some cases more quickly than the working life of large infrastructures or the period over which they can be amortised. These infrastructures are indispensable for development but it is important for them to be sufficiently flexible to be adapted to changes. The objective is twofold: on the one hand infrastructures that are no longer useful should not constitute a financial liability and on the other they should not hinder social and technological advances.

Finally, the CADS emphasises the important role of infrastructures in guaranteeing regional balance, so that different parts of the country are adequately connected and can participate in its development on an equal footing. Proper policy integration is also essential when planning the different infrastructures on which policies are based.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Design urban and inter-urban infrastructures that will facilitate a change in modes of transport, reducing the use of private transport.
- ❖ Ensure that there is a network of charging points for electric vehicles throughout the country.
- ❖ Manage, use and maintain road infrastructures efficiently and competitively (avoiding duplicated or oversized infrastructures), internalising costs and incorporating the user pays and polluter pays principles.
- ❖ Strengthen the role of the railways in freight transport. To this end the construction of the Mediterranean Corridor is indispensable, which must offer adequate capacity in its connections to Catalonia's two main ports (Barcelona and Tarragona), measures being taken to guarantee its intermodality and interoperability.
- ❖ To be able to define a model for the country's airports and make Barcelona a long-distance and intercontinental hub.
- ❖ Provide quality broadband coverage throughout Catalonia and ensure that it is available to all. This issue is also related to SDG #1 Poverty.
- ❖ Provide the energy infrastructures necessary to develop the full potential of renewable energy sources, establishing a varied energy mix which is less

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<sup>357</sup> Llasat, M.C., Corominas, J., García, C. [et al.]. *Riscos d'origen climàtic. Tercer informe sobre el canvi climàtic a Catalunya*. Government of Catalonia and Institute of Catalan Studies. Unpublished work expected to be published in September 2016.

<sup>358</sup> For more information see Sánchez-Arcilla, A., Gracia, V., Sierra, J.P. [et al.]. *Sistemes costaners i dinàmica litoral. Tercer informe sobre el canvi climàtic a Catalunya*. Government of Catalonia and Institute of Catalan Studies. Unpublished.

centralised, interconnected via smart networks and with adequate storage capacity, ensuring that the system is competitive.

- ❖ A debate should be initiated on the future of nuclear power. This is an urgent matter which should be approached rigorously and fearlessly.
- ❖ Incorporate measures to ensure the resilience of infrastructures in new projects and the modernisation of existing projects to cope with climate change and to develop programmes for measures to deal with emergency situations in the event of extreme weather phenomena.
- ❖ Ensure that infrastructures are sufficiently flexible to be adapted to the technological and social changes that take place.
- ❖ Guarantee regional balance in the design of infrastructures, so that different parts of the country are adequately connected and can participate in its development on an equal footing. coordinating policy when planning the different infrastructures on which it is based.

**9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.**

Industry provides a solid base for a country's economy and is essential for creating jobs and generating wealth. Catalonia has a strong industrial tradition but in recent years the contribution of industry to gross value added (GVA) has decreased, as has also happened in many western countries.

In 1987 industry accounted for 43.1% of total GVA but in 2005 it generated 22.8%<sup>359</sup> and by 2015 the figure had fallen to 19.6%<sup>360,361</sup>. The number of people working in the industrial sector has also fallen: while 812,600 people (28.8% of the workforce) were working in industry in 2001, by 2015 the figure had fallen to 582,100 (18.9%)<sup>362</sup>.

Nevertheless, in the last three years (2013-2015) there has been a recovery in levels of employment in industry and industrial GVA in absolute values also rose in this period, from 36,891.3 million to 38,753.6 million euros.

Catalan industry is very diverse and consists largely of small businesses (in 2014 only 3.9% of industrial operations in Catalonia had 50 or more employees<sup>363</sup>). However, large

<sup>359</sup> Guillermo, S. (2012). *Informe sobre la Indústria a Catalunya: situació, reptes i possibilitats*. Economic, Social and Work Council of Catalonia (CTESC). Government of Catalonia.

<sup>360</sup> Valor afegit brut. Per sectors (Gross value added. By sector). 2015. IDESCAT figures: <http://www.idescat.cat/economia/inec?tc=3&id=8152>

<sup>361</sup> Manufacturing industry accounted for 25% in 2000 but only 20% in 2005 and 16.7% in 2015. See IDESCAT figures: <http://www.idescat.cat/pub/?id=aec&n=354&t=2015>

<sup>362</sup> *Població ocupada. Per sectors d'activitat i sexe (Employed persons. By activity sector and sex)*. IDESCAT figures.

<sup>363</sup> *Total indústria (Total for industry)*. IDESCAT figures.

businesses are more productive (1.6 times more productive than medium-sized businesses and 3 times more than small ones<sup>364</sup>), as it is easier for them to access financing (see point 3 in this SDG, on access to financial services), innovate and expand internationally. It is important to encourage growth in the size of businesses, either via mergers or takeovers or via associations between businesses and the creation of clusters.

In the twenty-first century industry needs to generate high added value and be competitive, which means using less labour and spending less on materials, while investing more in knowledge and technology. Accordingly, as mentioned in Target 5 of this SDG (enhance scientific research and upgrade the technological capabilities of industrial sectors, encouraging innovation), research and development and their transfer to business are essential. But training is also vital: the new technologies need professionals who can develop them and who know how to apply and exploit them. There is a need, therefore, for training to be reinforced at intermediate and higher level and for more ongoing training.

To achieve these goals it is also indispensable to encourage the circular economy and detach economic growth from the use of materials, greenhouse gas emissions and the generation of waste (see Target 4 of this SDG).

As stated in Target 1 of this SDG we need to have efficient, sustainable and modern infrastructures which allow the new industry to develop and which can, at the same time, be a driving force for innovation.

Internationalisation is another key element for the development of industry in Catalonia. In fact, during the recession the Catalan economy has seen positive international growth and in 2015 the foreign sales of Catalan companies rose by 6.1%, reaching 63,839 million euros (the highest figure ever) while the number of regularly exporting companies reached a record level at 16,422<sup>365</sup>. It is important, therefore, to consolidate the international projection of the Catalan economy.

With regard to access to information and communication technology, practically all companies have access to broadband Internet (98.4% of businesses with fewer than 10 employees and 100% of those which have more than 250), but only 18.7% of businesses with fewer than 10 employees have fibre optic Internet connections, while the figure for businesses with 10 to 49 employees is 29.1%, for those with 50 to 249 employees it is 49.5% and for businesses with more than 250 it is 71.5%. The digitalisation of businesses is indispensable in today's global, connected and technological world and telecommunications infrastructures need to reach all parts of the country with the quality needed (see Target 1 of this SDG).

However, as well as being connected, the great challenge for industry is the digitalisation of production, the development of what has come to be known as Industry 4.0. In an increasingly digital society, technological change must reach industry to transform processes of production and the products themselves via the application of smart technologies. And to implement this transformation innovation is essential (see

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<sup>364</sup> [Torna la indústria. Propostes per a reindustrialitzar l'economia](#). Círculo de Economía. 2014.

<sup>365</sup> [http://accio.gencat.cat/cat/empresa-ACC10/premsa/noticies-notes-premsa/2016/160218\\_Exportacions.jsp#exportacions](http://accio.gencat.cat/cat/empresa-ACC10/premsa/noticies-notes-premsa/2016/160218_Exportacions.jsp#exportacions)



Target 5 of this SDG).

With a view to reindustrialising Catalonia, in July 2016 an agreement was signed to promote the Catalan Agreement for Industry, which had the support of the Government, business organisations and trade unions, political parties, universities, professional associations, municipal associations and technological centres.

The Government of Catalonia's Industrial Strategy for Catalonia and Smart Specialisation Strategy RIS3CAT have identified 7 priority sector areas: food, chemicals, energy and resources, sustainable mobility, design, cultural and experience-based industries, health and life sciences, and industrial systems. Given the present and future importance of industry for sustainable development in our country, the CADS recommends that careful consideration should be given to the specific challenges for each of these sectors in the future.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Recover Catalonia's leading position in industry, encouraging job creation and the generation of wealth.
- ❖ Increase the scale of industry (by mergers, associations or the formation of clusters).
- ❖ Improve the access of small industries and other businesses to financing (see Target 3 of this SDG).
- ❖ Increase research, development and, above all, transfer to business, especially of technology and high-technology (see Target 5 of this SDG) and reinforce training at both intermediate and higher levels, and ongoing training.
- ❖ Encourage the circular economy and detach economic growth from the use of materials, greenhouse gas emissions and the generation of waste (see Target 4 of this SDG).
- ❖ Develop efficient, modern infrastructures that meet the needs of industry and the new models for more sustainable development (see Target 1 of this SDG).
- ❖ Advance the digitalisation of Catalan industrial production as part of the Industry 4.0 scheme.
- ❖ Consolidate the international growth of business.

<b>9.3</b>	Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets.
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The manufacture of many products has become fragmented and globalised so that currently most products are made in several countries. Catalan industries need to participate in these global value chains and must, therefore, continue to consolidate their potential for international growth and emphasise innovation (See Targets 2 and 5 of this SDG).



A major challenge for Catalan industry to form part of these value chains is that it consists largely of small and medium-sized enterprises. In 2015 99.63% of businesses with establishments in Catalonia had fewer than 200 employees, 38.7% fewer than 10, and 56.1% had no employees<sup>366</sup>.

The recession and the resulting restrictions on credit to businesses and families have had particularly severe effects on SMEs. To deal with this issue, since 2008 the European Central Bank has been applying a policy of reducing interest rates, which now stand at 0%<sup>367</sup>. In 2014 the European Commission also approved an Investment Plan to encourage growth and employment.

Nevertheless, in recent years there has been considerable concentration in the banking sector, reducing the number of entities that provide credit. As a result, products that provide financing are less diverse and it is more difficult for businesses to obtain credit. One must also bear in mind that Catalan businesses are heavily dependent on financing by banks and make little use of other sources of funding (venture capital, the securities market, etc.). In Spain only 22% of businesses make use of alternative financing, while 70% of businesses do so in the United States, 55% in France and 45% in Germany<sup>368</sup>.

Industrial consolidation calls for financial mechanisms that allow businesses to deal with unfavourable circumstances and remain solvent. Consequently, the diversification of sources of credit, so that they are not overwhelmingly linked to banks, would provide more room for manoeuvre when businesses are being started and give them more stability.

Support from public bodies should be directed at encouraging innovation, especially in those sectors in our country which have most potential for development.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Take advantage of the mechanisms offered by the European Union to facilitate access to credit, paying special attention to supporting small and medium-sized enterprises, which account for a substantial proportion of our businesses.
- ❖ Consolidate instruments for alternative forms of financing, with a view to facilitating increased use of such alternatives among businesses.
- ❖ Prioritise public credit in business innovation, especially in those sectors identified as more competitive and with potential for generating more value added, to facilitate their incorporation in value chains.

**9.4** By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their

<sup>366</sup> [Empreses. Per sector d'activitat, dimensió i condició jurídica \(Companies. By activity sector, size and legal status\)](#). IDESCAT figures.

<sup>367</sup> European Central Bank: <https://www.ecb.europa.eu/stats/monetary/rates/html/index.en.html>

<sup>368</sup> <http://www.joanbcasas.cat/2015/06/01/el-mercat-del-credit-i-de-les-pimes/>

respective capabilities.

Since the industrial revolution economic growth has been closely linked to greenhouse gas (GHG) emissions, owing mainly to the use of fossil fuels and, to a lesser extent, to changes in land use.

This increase in emissions has also occurred in Catalonia and even in recent years, after the United Nations Framework Convention on Climate Change came into force, GHG emissions have continued to rise (from 39.2 Mt CO<sub>2</sub> equivalent in 1990 to 42.8 Mt CO<sub>2</sub> equivalent in 2013). Even so, there has been a reversal in the emissions trend: after reaching a peak of 59.6 Mt CO<sub>2</sub> equivalent in 2005, emissions have progressively decreased to 42.8 Mt CO<sub>2</sub> equivalent.

GHG emissions also show a positive trend in relation to GDP<sup>369</sup>, falling from 685 tonnes CO<sub>2</sub> equivalent per million euros in 1990 to 217 tonnes CO<sub>2</sub><sup>370</sup> equivalent per million euros in 2013, a reduction of 70%.

We can thus see that greenhouse gas emissions and economic development have become less interdependent to a certain extent. The same tendency can be observed in figures for industrial waste generation and GDP produced by industry, which fell from 115 tonnes per million euros to 58 tonnes in 2011<sup>371</sup>. Currently work is in progress in various areas to move towards more circular approaches to industrial production, in which waste is used as a resource (see [SDG #12](#)).

The Government of Catalonia has various reference documents dealing with this area, including the Catalonia 2020 Strategy, the Catalan ecodesign strategy for a circular and ecoinnovative economy, the Strategy to foster the green economy and the circular economy and the General waste prevention and resource management programme for 2013-2020. Indeed, the fourth pillar of the Catalan sustainable development strategy, approved in 2010, drew attention to this matter (calling for an ecoefficient, competitive and innovative Catalonia).

It is thus particularly significant that one of the six boards recently set up within the framework of the National Agreement for Industry, approved in July 2016, is that for Sustainability and the Circular Economy, created with a view to saving resources and recycling waste, in order to boost innovation and make industry more competitive.

Modernising infrastructures (see Target 1 of this SDG) and retrofitting industries to make them sustainable on a planet with finite resources is a challenge that cannot be ignored. But it is also an opportunity to be more competitive and generate employment [\[see](#)

<sup>369</sup> The relationship between GHG emissions and GDP (in terms of Purchasing Power Parity) is an indicator of an economy's level of eco-efficiency. Countries which have a lower ratio between these variables, producing lower levels of emissions into the atmosphere for each unit of wealth generated, are more eco-efficient and thus have more sustainable patterns of production.

<sup>370</sup> Baldasano, J.M. Balanç de carboni: emissions de gasos amb efecte d'hivernacle a Catalunya. Tercer informe sobre el canvi climàtic a Catalunya. Government of Catalonia and Institute of Catalan Studies. Unpublished work expected to be published in September 2016.

<sup>371</sup> Alba Cabañas (rapporteur), Joan Antoni Santana (dir.), Roser Ferrer, Eva Miñarro, Joan Antoni Santana and Matias Vives. [Informe sobre la gestió i l'impuls de les infraestructures de residus](#). Government of Catalonia, Economic, Social and Work Council of Catalonia (CTESC), 2013.

**SDG #8].** New technological knowledge must be generated and it must, above all, be transferred to business, a process which requires professionals trained to implement the change (see Target 5 of this SDG).

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Consolidate the trend for economic development and environmental impacts (greenhouse gas emissions, the extraction of natural resources, waste production, etc.) to become unrelated.
- ❖ Develop an industrial model based on a circular, non-carbon based economy, via research and innovation, one which is competitive, internationalised and able to create employment.
- ❖ Develop infrastructures which contribute to and facilitate this change, allowing the exchange of products and the mobility of personnel on a sustainable basis, the generation and distribution of renewable energies, the efficient use of water, and access to digital technology.

**9.5** Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per million people and public and private research and development spending.

Following a number of years in which it grew, reaching a peak in 2009, spending on research and development in Catalonia with respect to GDP has declined. In 2002 this indicator was 1.28%, in 2009 it reached 1.70% and by 2014 it had fallen to 1.47% of GDP. The reduction can be seen in all sectors (government, higher education and the private sector)<sup>372</sup>. It should be pointed out that spending on R&D by the private sector in Catalonia in 2014 accounted for 57% of the total, while the figure for Europe as a whole was 63.9%<sup>373</sup> (1.3% of GDP<sup>374</sup>).

The number of researchers<sup>375</sup> in Catalonia has followed a similar trend to that for R&D compared with GDP. Although the number of researchers rose from 15,404 to 27,058 between 2002 and 2010, numbers have fallen slightly in recent years, standing at 25,474 in 2014<sup>376</sup>. Nevertheless in 2014 in Catalonia there were 3,387.5 researchers per

<sup>372</sup> [Despesa interna en R+D sobre el PIB. Per sectors d'execució \(Domestic expenditure on R&D relative to GDP. By sector\)](#). Idescat.

<sup>373</sup> The figure of 57% for Catalonia includes non-profit making private institutions. In Europe these organisations contributed 0.8% to spending on R&D as a proportion of GDP, so that a strict comparison would require this amount to be added to the 63.9%, widening the gap between Catalonia and the rest of Europe a little more.

<sup>374</sup> [Europe 2020 indicators - research and development](#). Eurostat. Figures for March 2016.

<sup>375</sup> In all the sections of this report the figures for researchers refer to the full-time equivalent, in line with the indicator proposed by the United Nations.

<sup>376</sup> [Personal en R+D. Per sexe, ocupació i sectors d'execució \(R&D personnel. By sex, occupation and sector\)](#). Idescat.

million population, a figure only slightly below the average for Europe.<sup>377</sup>

With regard to scientific production, between 2000 and 2013 the number of documents published with contributions by researchers in Catalonia grew from 5,300 to 15,800 (although in 2014 there were 15,100), while the percentage of documents published jointly with foreign researchers rose from 37.1% in 2000 to 55.7% in 2014. In the Spanish context Catalonia occupied second position after the Autonomous Community of Madrid in the number of documents and was in first place for quality and excellence. Catalonia was in fifth place in Europe for the number of documents produced per thousand researchers<sup>378</sup>.

However, scientific production in Catalonia is not at the same level in all fields. In Catalonia the strongest are space sciences, clinical medicine, physics, neuroscience and behavioural science, biology and ecology, immunology, agriculture and livestock science, mathematics, biology and biochemistry, molecular biology and genetics, microbiology and information sciences. Material sciences play only a small role and social sciences and engineering account for little production<sup>379</sup>.

Generally speaking, Catalonia's research system is comparable with the highest European standards. Yet despite this volume of production and high-quality research, the knowledge generated in Catalonia does not lead to much technological development or the creation of innovative business proposals.

In Europe, in 2012 the average number of applications to the European Patents Office per million inhabitants was 109<sup>380</sup>, while in Catalonia the average was 57 per million inhabitants<sup>381</sup>. Nevertheless, while Barcelona holds a good position as the 17th metropolitan region in terms of total EPO applications<sup>382</sup>, with numbers similar to Heidelberg (Germany), Milan (Italy) and Eindhoven (Holland), Girona, Lleida and Tarragona record fewer than 50 applications per million inhabitants<sup>383</sup>.

Despite Barcelona's good position in terms of overall figures, the number of high technology patents is only 9.6% of the total, whereas in regions such as Rennes, Marseilles, Madrid and Malmö they account for over 50%<sup>384</sup>.

The number of businesses engaged in technological innovation and spending on activities related to innovation have fallen in recent years from a peak of 8,184 businesses in 2008 and 3,926 million euros invested in 2007 to 3,396 businesses and 3.095 billion euros in 2013. Nevertheless, figures for 2014 may indicate a reversal in the

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<sup>377</sup> As mentioned in the section on the European context, the European average was 3,430 researchers per million inhabitants.

<sup>378</sup> [Producció de coneixement científic i tecnològic a Catalunya \(2000-2014\)](#). Report by the Parliamentary Advisory Council on Science and Technology (CAPCIT). April 2016.

<sup>379</sup> [Producció de coneixement científic i tecnològic a Catalunya \(2000-2014\)](#). Informe del Consell Assessor del Parlament sobre Ciència i Tecnologia (CAPCIT). April 2016.

<sup>380</sup> [Patent statistics](#). Eurostat. Figures for June 2015.

<sup>381</sup> [Patent applications to the EPO by priority year by NUTS 3 regions](#). Eurostat.

<sup>382</sup> [Patent statistics](#). Eurostat. Figures for June 2015.

<sup>383</sup> [Research and innovation statistics at regional level](#). Eurostat. Figures for March and May 2015.

<sup>384</sup> [Patent statistics](#). Eurostat. Figures for June 2015.

trend, with 3,631 businesses and 3.119 billion euros spent on innovation.

In 2014 the Government of Catalonia, in accordance with European proposals, approved a Smart Specialisation Strategy for Research and Innovation in Catalonia (RIS3CAT) for 2014-2020, which defines priorities for public R&D&I policies and the measures that will have the support of the 2014-2020 ERDF operational programme for Catalonia.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Maintain the levels of productivity, excellence and internationalisation of Catalonia's research and development system achieved in recent years, guaranteeing the necessary expenditure on this activity by all sectors to achieve the European investment target of 3% of GDP and the human resources needed.
- ❖ Increase the funding for research and development provided by the private sector, to achieve levels of private investment similar to those elsewhere in Europe.
- ❖ Strengthen research in more modest areas of productivity and/or excellence, especially those related to technology and applied high technology.
- ❖ Bring universities and research centres closer to businesses, via the creation of instruments to provide incentives for the transfer of the knowledge generated.
- ❖ Develop a network for innovation and the transfer of knowledge to business, generating value added and encouraging economic competitiveness, especially in technology and, above all, high technology. In this regard, technology centres are a useful instrument.
- ❖ Have personnel highly qualified both in engineering and vocational training with the ability to incorporate expertise and innovations in the Catalan business fabric, in response to technological change and new production models.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 9

The CADS considers that the main challenges facing Catalonia with respect to SDG 9 are to:

- ❖ Design urban and interurban infrastructures that will facilitate a change in modes of transport, reducing private transport and establishing a network of charging points for electric vehicles throughout Catalonia.
- ❖ Strengthen the role of the railways in freight transport. To this end the construction of the Mediterranean Corridor is indispensable, which must offer adequate capacity in its connections to Catalonia's two main ports (Barcelona and Tarragona), measures being taken to guarantee its intermodality and interoperability.
- ❖ To provide the infrastructures necessary for the transition to renewable energy sources, establishing smart networks with adequate storage capacity, ensuring that the system is competitive.



- ❖ Incorporate criteria for resilience regarding climate change, flexibility in adapting to technological and social changes, regional organisation, and the inclusion of appropriate policies in the design of the infrastructure network.
- ❖ Facilitate and promote the digitalisation of society, businesses and production processes.
- ❖ Recover the leading position traditionally held by Catalonia in the industrial sector of the economy, favouring the development of larger businesses, facilitating access to financing, promoting innovation, especially in new technologies, the efficient use of resources and the circular economy, together with digitalisation and internationalisation.
- ❖ Maintain the level of productivity, excellence and internationalisation of the research and development system achieved in recent years and, especially, to promote the transfer of this knowledge to innovation in business so as to generate added value and encourage competitiveness.

## 10 REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

### UNITED NATIONS 2030 AGENDA GOALS

- 10.1** By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average.
- 10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.
- 10.3** Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard.
- 10.4** Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality.
- 10.5** Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations.
- 10.6** Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions.
- 10.7** Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies.



## INTERNATIONAL CONTEXT

Economic inequality is increasing all over the world. According to the United Nations, it has been calculated that in developing countries inequality in income grew by an average of 11% between 1990 and 2010<sup>385</sup>.

There is a growing consensus that economic growth is not sufficient to reduce poverty if it is not inclusive and does not incorporate the three dimensions of sustainable development: economic, social and environmental.

Economic inequality not only has negative repercussions among the poorest but also has a prejudicial effect on the economy as a whole. According to a report by the International Monetary Fund (IMF)<sup>386</sup>, if the income of the middle and poorer classes in a country increases, its growth is greater, while if the increase in wealth is concentrated in the hands of the wealthiest 20%, there is less growth. Increases in economic inequality also lead to greater inequality between social groups, especially gender inequality.

In 2016 the NGO Oxfam published a report<sup>387</sup> on inequality in the world, pointing out that extreme inequality continues to increase and at present the richest 1% of the world population owns more wealth than the remaining 99%. Since the turn of the century, the poorest half of the world's population has received just 1% of the total increase in global wealth, while half of that increase has gone to the top 1%.

At the end of 2013 the World Bank established two goals related to this issue<sup>388</sup>: firstly to eliminate poverty on a global scale, reducing the percentage of the population who live in extreme poverty to 3% of the global population by 2030, and secondly to increase the average income of the poorest 40% in each country, a goal similar to SDG Target 10.1.

## EUROPEAN CONTEXT

The economic crisis of recent years has affected the whole European Union, especially the countries of southern Europe, which have seen a rapid decline in economic and social indicators. The percentage at risk of poverty or social exclusion (AROPE) in the EU as a whole is 24.4% while the figure for Greece is 36% and for Spain 29%. Eastern European countries such as Romania and Bulgaria have even higher levels, up to 40%<sup>389</sup>. Another fact that illustrates the economic and employment situation in the EU is that having a job does not eliminate the risk of poverty and 9% of employees are at risk of poverty or social exclusion.

<sup>385</sup> UN data on the SDGs: <http://www.un.org/sustainabledevelopment/inequality/>

<sup>386</sup> DABLA-NORRIS E., KOCHHAR K., SUPHAPHIPAT N., RICKA F, E. TSOUNTA (2015): *Causes and Consequences of Income Inequality. A Global Perspective*. IMF Staff Discussion Notes No. 15/13 June 2015. International Monetary Fund.

<sup>387</sup> Oxfam International (2016). *An Economy for the 1%. How privilege and power in the economy drive extreme inequality and how this can be stopped*. Oxfam Briefing Paper 2010. 18 January, 2016

<sup>388</sup> World Bank. 2015. *A Measured Approach to Ending Poverty and Boosting Shared Prosperity: Concepts, Data, and the Twin Goals*. Policy Research Report. Washington, DC: World Bank. doi:10.1596/978-1-4648-0361-1.

<sup>389</sup> [Eurostat figures.](#)

Inequality in income is expressed in the Europe 2020 strategy by an indicator based on quintile share ratios, which compare the income of the richest 20% with that of the poorest 20%. Between 2010 and 2014 the ratio increased slightly, from 4.9 to 5.2. There are major differences between countries. Romania and Bulgaria have ratios of 7.2 and 7.1 respectively, while Finland and the Czech Republic have the lowest levels of inequality according to this indicator, with ratios of 3.6 and 3.5.

In most European countries children and young people (up to 17 years) and adults aged 18 to 64) are more at risk of poverty and social exclusion than those aged over 65.

For example, the average for the whole of Europe is 24.4% but the figure for young people is 27.8%, for adults it is 25.4% and for the elderly it is 17.8%. Spain is one of the countries where the differences are most pronounced, with a figure of 29.2% for the population as a whole, 35.8% for children and young people, 31.8% for adults and 12.9% for the elderly<sup>390</sup>. Among those with low work intensity, there is a greater risk of poverty and social exclusion than for the rest of the population (30%).

The Schengen Agreements, signed by all the member states of the EU except the United Kingdom and Ireland, created the Schengen area in which the free movement of goods, services, capital, workers and travellers is guaranteed. This initiative created a common external border for Europe. The common European position on immigration (except the United Kingdom, Ireland and Denmark) regulates legal migration and aims to facilitate the immigration of highly qualified workers via the Blue Card system<sup>391</sup>.

In recent years, especially in 2015, there has been a massive movement of migrants hoping to enter the EU, particularly Germany and northern European countries such as Sweden. In the light of this phenomenon, the EU has undergone a serious internal crisis, leading certain member states to close their borders in order to control or prevent the entry of immigrants. There have been attempts to persuade member states to accept voluntary quotas of immigrants but these have met with limited success. The migrant crisis has had serious consequences, which may end in the EU having a new territorial configuration.

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are detailed below, structured in line with the 2030 Agenda targets. It is important to point out that this SDG is closely related to certain others, such as [SDG #1](#) regarding poverty, [SDG #5](#) on gender equality, and [SDG #8](#) on decent work and economic growth.

**10.1** By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average.

This target refers to a reduction of the inequalities in income in a society, establishing as a goal the continuing increase of the income of the poorest 40% of the population at a

<sup>390</sup> Eurostat figures for 2014.

<sup>391</sup> [Official European Commission Blue Card website.](#)

faster rate than the average for the whole population<sup>392</sup>. The indicator proposed is the 'Ratio between the growth of family expenditure or per capita income of the bottom 40% of the population and the national average'. This data is not currently available for Catalonia.

Inequality can be measured using various indicators. The Europe 2020 Strategy uses the S80/S20 measure which calculates inequality in the distribution of income by means of the ratio between percentiles. This indicator is interpreted as the ratio between the income obtained by the top quintile, i.e. the richest 20% of the population, and the income of the bottom quintile.

In Catalonia the S80/S20 index in 2014 was 6.5<sup>393</sup>. This indicator worsened in both Catalonia and Spain between 2004 and 2014. In 2004 the figure for Catalonia was 4.8 compared with 5.2 for Spain and by 2014 it was 6.5 in Catalonia and 6.8 in Spain, the difference having decreased slightly. The average for the European Union in 2014 was 5.2.

Another indicator often used to measure inequality is the Gini Index<sup>394</sup>, which also reflects a worsening of the situation in these years, rising from 0.292 in 2004 to 0.326 in 2012.

According to a report on social inequality in Catalonia<sup>395</sup>, it is one of the places in Europe where inequality has increased most, with a concentration of income in the richest part of the population. Although in the years before the recession levels of inequality in Catalonia were lower than the European average, they are now above it.

The report on the application of the SDGs in Spain<sup>396</sup> refers to the Palma Index, which measures the relationship between the income of the richest 10% of the population and the poorest 40%. Values above 1 indicate a deviation in favour of the rich, the index for Spain in 2014 was 1.36. The report proposes that efforts should be made to achieve a Palma Index lower than 1 and calls on national and autonomous governments to undertake a profound reorientation of their policies towards a greater redistribution of income and wealth.

The main challenge facing Catalonia with regard to this Agenda target is to:

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<sup>392</sup> According to the Oxfam report (2016) mentioned above, differences in income in absolute terms can be so large that a larger percentage increase in the lowest incomes can still lead to a greater difference in absolute terms.

<sup>393</sup> The figures are taken from the Survey on Living Conditions. Link to the IDESCAT website giving details of the indicator: <http://www.idescat.cat/economia/inec?tc=3&id=8504>

<sup>394</sup> The Gini index measures the level of inequality as a continuous variable, with values ranging from 0 to 1. It takes the value 0 in a hypothetical situation of maximum equality (everyone has the same income) and 1 in the event of maximum inequality. IDESCAT figures (using 2004 as a base; in 2013 the series was interrupted because of methodological changes).

<sup>395</sup> CERES (2014) *Informe sobre l'evolució de les desigualtats socials a Catalunya. No. 53. Documents sindicals*. Secretariat for communication and social networks. Centre for Trade Union Studies and Research (CERES). Comisiones Obreras Trade Union in Catalonia. May 2014.

<sup>396</sup> Oxfam Intermón and Unicef (2015). *España frente a los retos de la Agenda de Desarrollo Sostenible*.

- ❖ Reverse the present growth in income inequality between the richest and poorest segments of Catalan society via the adoption of policies to redistribute income and wealth.

**10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

This target establishes the goal of promoting inclusion in all areas of life (social, economic and political) for everyone without distinction. The indicator proposed by the United Nations is the proportion of people who have income below 50% of the average by age, gender and disability. Data could be drawn up based on the statistical information available.

By **age group**, children and young people under 18 have the greatest risk of poverty, with a rate of 27.6% in 2013 (compared with an overall rate of 19.8%). Consequently, the 2015-2016 action plan to combat poverty and promote social inclusion<sup>397</sup> has children and adolescents as a priority. The plan aims to improve the quality of life of children and adolescents in situations of or at risk of social exclusion, with a comprehensive focus that incorporates inclusive educational, social and healthcare policies, with a view to breaking the 'circle of disadvantage' in the early years of life and adopting a preventive approach.

Because they receive pensions and other social benefits, the elderly have a lower rate of poverty than other age groups, as pointed out in **SDG #1** on poverty (Target 1.3). Nevertheless, there are certain situations of vulnerability affecting the elderly, in particular women who have not paid social security contributions and receive non-contributory pensions, which are very small, and elderly widows who see their pensions halved when their husbands die.

**SDG #5** analyses inequality based on **gender** in detail in various areas. It thus points out that, in spite of the progress made to date, political, economic and cultural inequalities persist, especially differences in salary and the limited presence of women in politics.

In Catalonia in 2013 the average annual salary for men was 27,684 euros, while that for women was 20,741 euros, 25.1% less. If we consider rates for risk of poverty after social benefits, women are in an inferior position (21.6% compared with 20.2% for men, according to IDESCAT data for 2014). This inequality is also evident in unemployment benefit and pensions, which are 12% and 31% lower, respectively, than those for men<sup>398</sup>.

A recently published report on the integration of **immigrants** in Catalonia in 2015<sup>399</sup> indicates differences in access to the labour market, rates of unemployment, and

<sup>397</sup> [Pla d'acció per a la lluita contra la pobresa i per a la inclusió social 2015-2016](#). Ministry of Labour, Social Affairs and Families. Approved in June 2015.

<sup>398</sup> [Indicador d'Igualtat de Gènere de Catalunya \(Gender equality indicator for Catalonia\) 2015](#). Barcelona Chamber of Commerce

<sup>399</sup> PINYOL-JIMÉNEZ (coord.). [Informe sobre la integració de les persones immigrades a Catalunya 2015](#), Ministry of Employment, Social Affairs and Families. May 2016 Drawn up by Inclusive Strategies.

income between the Spanish and foreign populations and these have been accentuated by the recession. For example, the risk of poverty among those of foreign nationality has risen steeply since 2011 to levels above 55%, while the risk for Spanish nationals is around 15%.

Rates of unemployment among those of Spanish nationality and non-EU citizens reflect clear inequalities by gender and country of origin. In the first quarter of 2015 the unemployment rate for Spanish men was 17% while it was 41.4% for non-EU citizens. The figures for women in the same period show that the proportion of foreign women from outside the EU who are unemployed is almost double that of Spanish women (32.5% and 18.4% respectively).

The 2015 Olivenza Report<sup>400</sup> provides a very detailed analysis of the situation of [people with disabilities](#) in Spain, which indicates that individuals with disabilities have an activity level which is 50% lower, a 30% higher rate of unemployment, 16% lower average salaries and a 16% higher risk of poverty compared with the population as a whole.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Find a balance between the development of measures for direct assistance to deal with socially urgent situations, such as ensuring that the basic needs of the most disadvantaged sectors of the population are covered, and the introduction of medium- and long-term structural measures and strategies of a more preventive nature, designed to promote individual autonomy and empowerment.
- ❖ Redirect public policies, traditionally segmented along thematic and sector lines, towards a more cross-cutting approach, which can affect various areas of action, such as social services, employment, education, housing, health and justice, making the individual the centre of attention. Advance towards more community-based care models.

### **10.3** Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard.

At present we have a number of legal instruments which recognise equality of opportunity and establish measures to make it effective. Equality of opportunity is a right recognised in the Universal Declaration of Human Rights, Catalonia's Statute of Autonomy and the Spanish Constitution and detailed in other specific laws.

For example, Spanish *Royal Legislative Decree 1/2013, of 29 November, approving the consolidated text of the general law on the rights of persons with disabilities*, contains measures to guarantee equality of opportunity for individuals with disabilities. Gender equality is dealt with in Spanish *Organic Law 3/2007, of 22 March, for the effective equality of men and women*, and in Catalan *Law 17/2015, of 21 July, on the effective equality of men and women*, whose aim is 'to establish and regulate mechanisms and

<sup>400</sup> Jiménez, A. Huete, A. (coords) (2015). *Informe Olivenza 2015, sobre la discapacidad en España*. [Spanish Disability Observatory \(OED\)](#).

resources to ensure the effective right to equality and non-discrimination on the grounds of sex in all areas, stages and circumstances of life'. The rights of the LGBTI community are reflected in *Law 11/2014, of 10 October, to guarantee the rights of lesbian, gay, bisexual, transgender and intersex individuals and to eradicate homophobia, biphobia and transphobia*.

However, the existence of legislation on equality of opportunity does not mean that discriminatory situations cannot arise. The indicator proposed by the United Nations is the proportion of people who claim that in the last 12 months they have suffered any of the types of discrimination prohibited by international human rights legislation. To determine this indicator for Catalonia, a methodology for collecting data would have to be established.

At present there is a partial indicator in the survey of quality of life in the workplace<sup>401</sup>, which records discrimination in the area of work. The highest figures are for discrimination on the grounds of sex experienced by women, in particular those in the 25 to 44 age range.

In Catalonia, the wage gap (salary/hour) between men and women in the period 2011-2013 was around 20%<sup>402</sup>, higher than the European average of 16.4%<sup>403</sup>. The gap widens if it is calculated by average annual earnings for men and women. In Catalonia in 2013 the average annual salary for men was 27,684 euros, while that for women was 20,741 euros, 25.1% less<sup>404</sup> [See SDG #5].

Education plays an important role in compensating for and levelling inequality [See SDG #4]. The period from 0 to 3 years is of key importance and municipal education services therefore need to be reinforced and diversified for children aged 0 to 3 and their families, especially in districts with more social needs, to promote equality of opportunity in childhood, encourage family involvement and combat poverty.

Lastly, accessibility is an aspect of equality of opportunity that the public and private sectors must guarantee for elderly people who have disabilities or special needs related to mobility or communication. For this reason, we need to continue work on improving accessibility and eliminating architectural barriers and obstacles to communication.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ [Reduce inequality of opportunity in Catalan society.](#)
- ❖ [Guarantee the effective implementation of current legislation in the area of equality of opportunity and the coherence of public policies.](#)

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<sup>401</sup> [Enquesta de qualitat de vida en el treball \(survey of quality of life at work\)](#). IDESCAT, Ministry of Business and Knowledge, and Spanish Ministry of Labour and Immigration.

<sup>402</sup> [Bretxa salarial entre homes i dones \(Wage gap between men and women\) 2013](#). IDESCAT

<sup>403</sup> [Eurostat, 2013](#)

<sup>404</sup> [Desigualtats salarials a Catalunya](#). UGT



- ❖ Reduce the wage gap between men and women and increase opportunities for employment and therefore for the personal and social development of disadvantaged groups.
- ❖ Establish a specific indicator to measure inequality in Catalonia.
- ❖ Introduce the minimum guaranteed income as a legal right.
- ❖ Strengthen and diversify municipal education services for children from 0 to 3 years old and their families, especially in districts with more social needs.
- ❖ Improve accessibility and eliminate architectural barriers and obstacles to communication.

#### 10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality.

Public policies—on the economy, taxation, education, social welfare, pensions, employment, etc.—can help to reduce inequality.

Below we list some of the challenges and specific proposals put forward by NGOs in the areas of taxation, salaries and social protection. The report on Spain published by Oxfam Intermón in January 2016<sup>405</sup> has been used as our main source of information to supplement the aforementioned report on world inequality. The report proposes the establishment of an institutional body responsible for measuring inequality and how it is changing and the inclusion of an inequality indicator in the country's battery of basic statistical indicators.

##### Tax policy

Reducing inequality calls for fiscal policies which redistribute wealth, designed so that businesses and individuals pay tax according to their capacity and real economic activity. Moreover, in recent years we have become increasingly aware of the wide range of practices (some legal, others illegal) to avoid paying taxes, operating via tax havens, locating businesses in countries with very favourable tax regimes, financial engineering to hide profits, etc.

Moreover, in recent years we have become increasingly aware of the wide range of practices (some legal, others illegal) to avoid paying taxes, operating via tax havens, locating businesses in countries with very favourable tax regimes, financial engineering to hide profits, etc.

The Oxfam Intermón report refers to fiscal measures such as the following:

- a) Transfer the tax burden from work and consumption to property and capital, increasing fiscal pressure accordingly.

<sup>405</sup> Oxfam Intermón (2016). *An Economy for the 1%. How privilege and power in the economy drive extreme inequality and how this can be stopped*. Published 18 January 2016. [https://www.oxfam.org/sites/www.oxfam.org/files/file\\_attachments/bp210-economy-one-percent-tax-havens-180116-en\\_0.pdf](https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/bp210-economy-one-percent-tax-havens-180116-en_0.pdf)



- b) Recover the wealth tax progressively with a unified approach in all parts of the country and the tax on inheritance and donations for large fortunes as mechanisms to reduce the perpetuation of intergenerational inequality.
- c) Reform corporation tax to bring effective and nominal rates closer together, eliminating the tax benefits enjoyed by large business groups.
- d) Suppress holding companies for foreign securities and modify the regulation of investment companies with variable capital (SICAV) to prevent fraudulent use.

To prevent tax evasion the Oxfam Intermón report makes the following proposals:

- a) Ensure that large businesses pay a fair amount for their operations in Spain and abroad.
- b) Adopt a binding definition of tax havens and establish sanctions for countries and businesses that use them.
- c) Press for business profits to pay tax according to the principle of a single worldwide consolidated tax base, supporting the European initiative to promote this.
- d) Move towards exemplary standards in government, adopting a mechanism to prevent public contracts being awarded to companies that operate via tax havens.
- e) Campaign for a global agreement against tax havens and tax regimes that facilitate tax evasion and tax avoidance, putting an end to falling levels of tax paid by businesses.
- f) Establish public registers of the real and ultimate beneficiaries of all companies, foundations, bank accounts and trust funds.
- g) Promote fiscal transparency through a multilateral system for the automatic exchange of tax information, including developing countries and ensuring that multinational companies provide accurate data.
- h) Lay the foundations for the creation of a world tax authority to which all countries would belong on equal conditions to supervise transparency and fiscal justice.

### Measures for social protection

The rate for the risk of poverty in Catalonia<sup>406</sup> in 2015 was 24.9% (19% after social benefits were taken into account)<sup>407</sup>. Another way to reduce economic inequality is to strengthen social policies in areas like education, healthcare and social protection, providing sufficient funding to guarantee basic rights and equality of opportunity for everyone.

The main proposal made by NGOs is to guarantee a minimum income for all homes. This minimum income would be for both those who have no income and those who have

<sup>406</sup> This refers to those whose disposable income is below the threshold for risk of poverty. This threshold is fixed at 60% of the national average annual equivalent disposable income. In the case of Catalonia, the threshold is 60% of the annual equivalent disposable income of the population of Catalonia.

<sup>407</sup> [Taxa de risc a la pobresa \(At-risk-of-poverty rate\). Idescat.](#)

other sources of income that do not allow them to make ends meet (poor workers, people receiving non-contributory pensions, etc.).

Currently a popular legal initiative is being prepared to present a proposal to Parliament for a law establishing a minimum guaranteed income<sup>408</sup>. Article 24.3 of the Catalan Statute of Autonomy stipulates that 'Those individuals or families who are in a situation of poverty have the right to a minimum guaranteed income that ensures them the minimum necessary to live in dignity, in accordance with legally established conditions'.

#### Wage policies

Policies to reduce economic inequality in employment include measures to reduce precarious employment, policies to encourage the creation of jobs and wages which will cover basic needs, with a view to eliminating the existence of poor workers.

The Oxfam Intermón report proposes the following measures:

- a) Increase the minimum wage to 1,000 euros<sup>409</sup>.
- b) Establish regulations for the public and private sectors to reduce the differences between high- and medium-level salaries to 1–10.
- c) Reduce the wage gap between men and women.

The indicator proposed by the United Nations for this target is the percentage of GDP corresponding to work, including salaries and social benefits.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Implement fiscal policies which redistribute wealth, designed so that businesses and individuals pay tax according to their capacity and real economic activity.
- ❖ Strengthen social policies in areas like education, healthcare and social protection, providing sufficient funding to guarantee basic rights and equality of opportunity for everyone.
- ❖ Reduce the precariousness of employment.
- ❖ Adopt a binding definition of tax havens and establish sanctions for countries and businesses that use them.

#### **10.5** Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations.

This target refers to world institutions and financial markets. In view of the powers the Government of Catalonia has at present, it is not dealt with in this report.

<sup>408</sup> For more information go to: <http://www.rendagarantidaciudadana.net/>

<sup>409</sup> Currently the minimum wage in Spain is €655 per month. 'Iniciativa ciutadana per un salari digne' (<https://anemamil.wordpress.com/>) is campaigning for an increase in the minimum wage to €1000.

**10.6** Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions.

Catalonia is a country traditionally committed to the construction of a juster and more peaceful world order [see SDG #16]. To achieve a stronger international representation for Catalonia various framework agreements for cooperation have been signed with international institutions such as the Office of the United Nations High Commissioner for Refugees (UNHCR), the European Commission in connection with its programme Prevention of and Fight against Crime, and the United Nations Food and Agriculture Organization (FAO)<sup>410</sup>.

Catalonia has cooperated and cooperates in strengthening the institutional capacity of certain developing countries, signing cooperation agreements with less developed countries, within which it provides subsidies via the Catalan Agency for Development Cooperation (ACCD). In recent years the ACCD's subsidies have provided indirect support for some groups in developing countries (peasant movements, women's organisations) to make their presence felt in international organisations.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Guarantee support for the most vulnerable actors in developing countries, such as peasant movements and women's organisations, so that their presence is felt more in international organisations.
- ❖ Contribute to strengthening the institutional capacity of developing countries, using the resources available to the Government of Catalonia (such as the ACCD).
- ❖ Foster ethical responsibility on the part of companies and consumers, making every effort to guarantee production and consumption models that are sustainable and respectful of the environment and human and employment rights.

**10.7** Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies.

In 2008 the National Agreement on Immigration was signed in Catalonia<sup>411</sup>, structured in three parts which reflect the main demands of society as a whole:

- a) the need to regulate the flow of migrants,
- b) the need to avoid the perception of competition for public resources, and
- c) the need to provide elements of social cohesion in an increasingly diverse society.

<sup>410</sup> [Agreements signed by the Government of Catalonia.](#)

<sup>411</sup> [Pacte Nacional per a la Immigració \(National agreement on immigration\).](#)

In this context it is important to bear in mind the significant role of immigration throughout history, which has led to our country's present model of society. In recent years, between 1996 and 2014, the population of Catalonia increased from 6.1 million to 7.5 million (an increase of 23%) and nearly 80% of this growth comes from foreign immigration.

The arrival of immigrants was highest in the years of economic expansion (2000-2008) but continued during the recession. The main factor behind immigration is the need for extra people in the workforce since there were insufficient numbers of suitably qualified young people in this country, as explained in CADS report 5/2015 on medium- and long-term demographic challenges in Catalonia: labour market and ageing<sup>412</sup>. The importance of immigration for the labour market can be seen clearly in the fact that in 2008 nearly 20% of workers in Catalonia were immigrants, while there were only 5.5% in 2000. In 2014 the figure was 16.5%.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Regulate the flow of migrants in line with the needs of the labour market.
- ❖ Promote social cohesion in a diverse society.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 10

The CADS considers that the main challenges facing Catalonia with respect to SDG 10 are to:

- ❖ Reverse the growth in income inequality between the richest and poorest.
- ❖ Find a balance between the development of measures for direct assistance to deal with socially urgent situations, such as ensuring that the basic needs of the most disadvantaged sectors of the population are covered, and the introduction of medium- and long-term structural measures and strategies of a more preventive nature, designed to promote individual autonomy and empowerment.
- ❖ Ensure the coherence of public policies, traditionally segmented along thematic and sector lines, redirecting them towards a more cross-cutting approach, involving such areas as social services, employment, education, housing, health and justice, making the individual the centre of attention. Advance towards more community-based care models.
- ❖ Reduce precariousness in employment, the wage gap between men and women and, by extension, that with other disadvantaged groups.
- ❖ Strengthen social policies in areas like education, healthcare and social protection, providing sufficient funding to guarantee basic rights and equality of opportunity for everyone.
- ❖ Strengthen and diversify municipal education services for children from 0 to 3 years old and their families, especially in the poorest districts.

<sup>412</sup> [CADS Report 5/2015](#) Informe sobre els reptes demogràfics de Catalunya a mitjà i llarg termini: mercat de treball i envelliment: mercat de treball i envelliment.



- ❖ Ensure that Catalonia is well represented in international organisations and guarantee support for less developed countries.
- ❖ Strengthen the institutional capacity of developing countries using indirect means such as ACCD subsidies.
- ❖ Regulate the flow of migrants in line with the needs of the labour market.
- ❖ Promote social cohesion in a diverse society.





## **11 MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE**

### **UNITED NATIONS 2030 AGENDA GOALS**

- 11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services, and upgrade slums.
- 11.2** By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.
- 11.3** By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.
- 11.4** Strengthen efforts to protect and safeguard the world's cultural and natural heritage.
- 11.5** By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.
- 11.6** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.
- 11.7** By 2030, provide universal access to safe, inclusive and accessible green and public spaces, in particular for women and children, older persons and persons with disabilities.



## INTERNATIONAL CONTEXT

Half of the world's population lives in urban areas, occupying 2.8% of the planet's land surface. According to United Nations projections<sup>413</sup>, by 2050 the population of the world will have reached 9 billion (as against 7 billion today) with urban populations accounting for 86% in developed countries and 64% in developing countries.

Eighty-five per cent of the population increase by 2050 will be in urban areas (mainly in poor districts) in developing countries (Africa and Asia) with substantial growth on the edges of cities or in the urban-rural transition area, where urban and rural lifestyles overlap, sometimes leading to friction.

This rapid urbanisation will be accompanied by the explosion of the mega-cities (those with more than 10 million inhabitants), their number rising from 2 in 1970 to 28 in 2014 and 41 by 2050. In all of them the existence of extensive slums will be an important issue.

The process of urbanisation will not be efficient: in the next 30 years in developing countries the urban population will double and the land area occupied will treble as a result of the increase in unplanned settlements. In developed countries the increase in single-person households will lead to increased competition for the space between homes and green infrastructures in the consolidated city.

Cities generate 80% of world GDP, but urban life leads to very important changes in the consumption of resources and the use of energy. It also needs to be borne in mind that cities are responsible for over half of greenhouse gas emissions.

Town planning needs to be integrated, incorporating infrastructures for transport, utilities and natural capital and green areas and infrastructures for biodiversity. The maintenance of green areas in cities is fundamental for quality of life, reducing atmospheric pollution and helping cities to adapt to climate change (making it easier for them to cope with heat waves and floods) and because they are areas for social integration and cohesion. Cities are especially vulnerable to natural disasters, given the density of population.

Rapid, unplanned urbanisation, combined with poverty, inequality and climate change are factors which increase the risk of disasters<sup>414</sup>. Between 2005 and 2015 over 1.5 billion people were affected by disasters, as a result of which 700,000 died, 1.4 million were injured and over 23 million lost their homes.<sup>415</sup> The effects of disasters are especially serious in developing countries, which accounted for 89% of all deaths with material losses equivalent to 5% of their GDP.

Atmospheric pollution is the environmental risk that causes most deaths, it being estimated that it is responsible for 8 million deaths in the world each year (4.3 from

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<sup>413</sup> [SOER 2015. Global megatrends. EEA, 2015.](#)

<sup>414</sup> We can define a **disaster** as a serious interruption in the functioning of a community or society, which leads to a large number of deaths, as well as material, economic and environmental impacts and losses which the community cannot deal with using its own resources. [Sendai Framework for Disaster Risk Reduction 2015-2030. UN, 2015.](#)

<sup>415</sup> [Sendai Framework for Disaster Risk Reduction 2015-2030. UN, 2015.](#)

indoor air pollution and 3.7 from outdoor air pollution)<sup>416</sup>. Most of these deaths occur in developing countries, especially in south-east Asia and the western Pacific. Although the quality of outdoor air has improved in Europe and North America, it has worsened in southern and eastern Asia. In 2012 approximately three quarters of the world's population was exposed to a concentration of particulate matter above the limits set by WHO.

During the COP 21 conference in Paris, leaders of the world's major cities signed the Paris declaration, committing themselves to reducing their emissions by 80% by 2050 and advancing towards a transition to 100% renewable energies. Via this commitment, these cities propose to go beyond the targets for reducing greenhouse gas emissions agreed by countries within the framework of the Paris Agreement<sup>417</sup>.

As a result of the decisive role of the cities at COP21 in Paris, the Covenant of Mayors for Climate and Energy was created<sup>418</sup>, allowing the progress and successes of towns and cities all over the world to be compared and information about them published.

In Catalonia over 600 towns and cities have subscribed to the Covenant of Mayors for Climate and Energy and will become part of the Global Covenant to provide support for other towns and cities in the rest of the world.

## EUROPEAN CONTEXT

Seventy per cent of the population of Europe is urban, a percentage which is expected to rise, especially in peri-urban areas, which are growing four times faster than urban areas. These projections suggest that Europe needs to adopt an integrated approach to the management of urban activity and natural capital, green infrastructures and biodiversity, together with technological changes, to remain competitive, take advantage of the economic benefits of agglomeration and use resources more efficiently.

The global market and competition for resources, as well as the impact of global environmental phenomena (such as GHG emissions) place Europe, and especially its cities, in a vulnerable position given that they lack their own resources (fossil fuels, minerals and foodstuffs).

Air pollution is the main environmental risk for health in the EU-28<sup>419</sup>: in the period 2011-2013 the population exposed to PM<sub>10</sub> levels higher than the limits set by the EU ranged from 17% to 30%. while 61-83% were exposed to concentrations exceeding the stricter WHO limit. The same applies to O<sub>3</sub>, with exposure rates ranging from 15% (EU limit) to 98% (WHO limits). Apart from these pollutants, others of special significance in the EU include PM 2.5, NO<sub>2</sub> and benzo[a]pyrene. [see SDG #3].

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<sup>416</sup> [World Health Assembly, 2015.](#)

<sup>417</sup> [Paris Agreement.](#) European Commission.

<sup>418</sup> [Covenant of Mayors for Climate and Energy.](#)

<sup>419</sup> [Air quality in Europe, 2015.](#)

The number and impact of disasters increased in Europe in the period 1998-2009<sup>420</sup>, affecting over 11 million people (causing nearly 100,000 deaths) and leading to economic losses of approximately 150 million euros. Sixty-four per cent of natural disasters in Europe were caused by hydrological and meteorological phenomena (storms, floods and landslides) and 20% by climatological phenomena (extreme temperatures, drought and forest fires)<sup>421</sup>.

Floods were the natural hazard leading to the greatest economic losses in Europe (52.173 billion euros in the period 1998-2009). **Extreme temperatures** caused the greatest number of deaths due to heat waves: in the summer of 2003 alone, which was especially hot, over 70,000 additional deaths were recorded in Europe. The phenomenon of urban heat islands increases the vulnerability of the urban population.

Municipal waste accounts for only 10% of total waste generated in the EU. In 2014 each European generated 475 kg of municipal waste, 44% of which was recycled.<sup>422</sup> The target proposed by the European Commission in its new circular economy package, still being processed, is to increase to 65% the proportion of municipal waste recycled or reused and to gradually reduce the fraction of waste sent to landfill to 10% by 2030<sup>423</sup> [see SDG #12].

The Basque Declaration<sup>424</sup> (April 2016) is the new roadmap for European towns and cities, in order to create productive, sustainable and resilient municipalities for a Europe which is inhabitable and inclusive. The Declaration includes 10 points, which coincide fully with the seven SDG 11 targets for cities.

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are detailed below, structured in line with the 2030 Agenda targets. In view of the distribution of population in Catalonia, the analysis of challenges focuses essentially on the city of Barcelona and its metropolitan area.

### 11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.

Over the next fifteen years Catalonia has to face two types of challenge if it is to guarantee access for everyone to decent housing and avoid situations in which people risk losing it. Some challenges call for immediate, urgent responses, related to current conditions, providing palliative solutions for today's most pressing problems, while

<sup>420</sup> EEA (2010) [Mapping the impacts of natural hazards and technological accidents in Europe. EEA 13/2010](#)

<sup>421</sup> [Damages from weather and climate-related events \(1980-2011\). CSI 042, CLIM 039 EEA indicator \(revised 09.2015\)](#)

<sup>422</sup> [http://ec.europa.eu/eurostat/statistics-explained/index.php/Municipal\\_waste\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Municipal_waste_statistics)

<sup>423</sup> Proposal for a new directive on waste (COM(2015) 595 final): <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015PC0595>

<sup>424</sup> [Basque Declaration. New Pathways for European Cities and Towns.](#)

others involve structural and preventive solutions that will give long-term stability and prevent the kind of traumatic events that we have seen in recent years.

After ten years of inflated property values and nine years of recession, people in Catalonia have experienced considerable fragmentation in connection with housing. The growing discrepancy between salary levels and average household income and the cost of housing has made it difficult for many families to access housing and remain in their properties.

In the period 2002-2012<sup>425</sup> the percentage of the population paying for their housing (rent or purchase) rose from 36% to 42%, an increase fundamentally due to the growth in the proportion of people with mortgages, from 23% to 29%.

In absolute values average monthly expenditure on housing grew continuously from 2002 to 2012 with a 63% increase for purchase and 65% for rent, contrasting with the fact that between 2009 and 2014 average net annual income per household fell by 8%<sup>426</sup>. As a result expenditure by Catalan households on housing has risen by 20%, rising from 30.6% of total income in 2002 to 36.8% in 2012. This imbalance is more serious in the city of Barcelona, where average monthly expenditure is 5.3% greater than in the rest of the metropolitan region and 20.6% higher than the rest of Catalonia (2012).

As a consequence of these changes, problems accessing and remaining permanently in housing have worsened both in the owned and rented sectors, as has the risk of social exclusion. The vulnerability of families living in rented accommodation also needs to be noted. According to 2014 figures, 40.3% of people living in rented accommodation<sup>427</sup> are poor, compared to an average for the population as a whole of 20.9%. An analysis of the AROPE rate for people at risk of poverty and social exclusion<sup>428</sup>, broken down by housing type, shows that people in rented housing are at much higher risk (45%) than the average (26%).

A clear indication of the problems caused by difficulties in paying for housing, unemployment and the inability of families to make ends meet is the fact that many of them have stopped paying their rent or mortgage and lost their homes. According to data from the General Council of the Judiciary in Catalonia, between 2007 and 2015 over 130,000 foreclosures and more than 40,000 evictions took place<sup>429</sup>, 68% of which involved people living in rented apartments.

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<sup>425</sup> [L'allotjament de la població a Catalunya \(Housing in Catalonia\) 2012. Government of Catalonia, 2013](#)

<sup>426</sup> Renda mitjana neta anual de les llars a Catalunya (Average net monthly income of households in Catalonia). IDESCAT (National Statistics Institute). IDESCAT estimates, as the National Statistics Institute changed its methodology in 2013 and the series was interrupted.  
<http://www.idescat.cat/pub/?id=aec&n=414&t=2012>

<sup>427</sup> [Taxa i població en risc de pobresa per règim de tinença de l'habitatge \(Population at risk of poverty by housing type\). IDESCAT](#)

<sup>428</sup> AROPE (*At risk of poverty and social exclusion*) as defined in criteria established by Eurostat refers to people in at least one of the following situations: at risk of poverty, suffering severe material deprivation or with a low work intensity.

<sup>429</sup> [INSOCAT report: Per a la millora de l'acció social. ECAS, 2015.](#)

There are no data showing what percentage of those who have lost their homes are helped by their family circle or friends but data is collected for people affected by this problem who go to social services and with this information the Catalan Housing Agency has produced a study<sup>430</sup> on bad accommodation in line with the European ETHOS classification<sup>431</sup>, which defines four types of bad housing: roofless, houseless, insecure, and inadequate.

According to this study, since 2008 there has been a 32% increase in the number of people who are poorly housed, reaching 48,454 in 2014, 75% of them being concentrated in cities with over 20,000 inhabitants (especially the city of Barcelona, which accounted for 27%). This urban concentration is even more pronounced in the most serious cases of bad housing: cities with over 20,000 inhabitants account for 90% of roofless housing (58% in Barcelona) and 93% of houseless accommodation (30% in Barcelona). Barcelona has seen a 95% increase in the number of people in roofless accommodation and a 214% increase in the houseless (2008-2014).

The profile of the person living in roofless or houseless conditions is a man (>65%), from Catalonia (>50%), aged 35 to 64 (>60%) and over 50% have no income of any kind.

One of the factors associated with evictions, and partly responsible for them, is the high cost of water, electricity and gas supplies, which increase the cost of living in accommodation, leading to the phenomenon of energy poverty. Between 2008 and 2014 bills for electricity and water both rose by 60%<sup>432</sup>. And the number of people who cannot keep their homes at an adequate temperature rose by 78%<sup>433</sup>.

In response to this social emergency, the Government of Catalonia has approved a series of far-reaching legal measures: *Decree-Law 1/2015, of 14 March, on extraordinary and urgent measures to use housing repossessed as a result of mortgage default*; the Agreement of 12 June 2015 for the creation of a supply of rental properties for social purposes in Catalonia<sup>434</sup>; *Law 14/2015, on the tax on empty properties*; and, in response to a popular legal initiative, *Law 24/2015, of 29 July, on urgent measures to deal with the emergency in housing and energy poverty* (the Spanish government challenged this legislation in the Constitutional Court, which admitted its objections and partially suspended the law).

Eradicating evictions, increasing the stock of public housing, and guaranteeing basic utilities for vulnerable sectors of the population are also objectives of the government plan for the eleventh legislature.

In the long term Catalonia has to tackle not only the serious problems caused by the recession but also the housing needs of those who have no access to the housing market. For example, in recent years the emancipation of young people has been

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<sup>430</sup> [Quantificació i distribució territorial de la població mal allotjada a Catalunya \(number and regional distribution of people living in poor housing\). Catalan Housing Agency, 2016.](#)

<sup>431</sup> ETHOS (*European Typology of homelessness and housing exclusion*).

<sup>432</sup> [INSOCAT report: Per a la millora de l'acció social. ECAS, 2015.](#)

<sup>433</sup> [Població amb privació material per tipus de privacions \(Population suffering material deprivation, by type\). Idescat.](#)

<sup>434</sup> <http://web.gencat.cat/ca/actualitat/detall/Fons-dhabitatges-de-lloguer-social>.

occurring later and today 76% of young Catalans between 18 and 30 years old still live with their parents<sup>435</sup>, while the average size of households continues to fall<sup>436</sup>.

Catalonia faces two main obstacles in making housing accessible to a large part of the population:

- 1) The complete dominance of private sector housing subject to the free market, and
- 2) The very small stock of public and social housing.

In the case of the first, the dynamics of the property market do not respond to salary levels and household income. This applies not only to housing which is purchased, where there is an element of speculation, but also to rented properties, as has been seen recently with the increase in rents in all Catalan towns and cities, especially Barcelona (8% in 2015)<sup>437</sup>, while unemployment is widespread and incomes continue to shrink.

All European governments share a concern about the discrepancy between changes in these two parameters (prices/salaries). The issue has received a great deal of consideration in Europe and member states have been recommended to adopt measures to contain prices, on the one hand, and, on the other, to provide more assistance to families in paying for accommodation, to avoid housing crises like the one we are experiencing in Catalonia.

Today Catalonia has 60,000 public and social dwellings, 2% of the total, compared with a European average of 14%. A study by the the Round Table for the tertiary social sector in Catalonia<sup>438</sup> indicates that this stock would have to be increased by 230,000 homes to reach European levels.

To make all these objectives possible in the short and long term the legislation referred to above must be applied and further developed to complement the provisions of Act 18/2007, on the right to housing.

The main challenges facing Catalonia with regard to this Agenda target are to:

❖ **With regard to policies on land linked to the provision of affordable housing:**

- ❖ Continue to reserve land specifically for social housing at a limited price, adjusting the amount of land available to the needs envisaged in the regional plan for the sector.
- ❖ Make use of land and buildings reserved for social and affordable housing on consolidated urban sites.

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<sup>435</sup> <http://www.cje.org/descargas/cje6487.pdf>

<sup>436</sup> The proportion of single-person households rose from 13.6% to 23.3% between 1991 and 2011, according to <http://www.idescat.cat/pub/?id=indst&n=1446&lang=es>

<sup>437</sup> [http://premsa.bcn.cat/wp-content/uploads/2016/03/160302-Informe\\_lloguers\\_Bcn.pdf](http://premsa.bcn.cat/wp-content/uploads/2016/03/160302-Informe_lloguers_Bcn.pdf)

<sup>438</sup> 'Un parc d'habitatges de lloguer social. Una assignatura pendent a Catalunya'. T. Bermúdez and C. Trilla. 'Debats Catalunya Social. Propostes del Tercer Sector'. No. 39, October 2014.



- ❖ Take further measures to apply the mandate for urban solidarity and make progress in the implementation of local government's right of first refusal.
- ❖ **With regard to policies on public/social housing for rent:**
  - ❖ Transfer properties which are already built but standing empty (especially those belonging to banks) to the stock of social housing for long-term rental, managed by the public sector or by non-profit organisations.
  - ❖ Transfer properties which are already built but standing empty (especially those belonging to banks) to the stock of social housing for long-term rental, managed by the public sector or by non-profit organisations.
- ❖ **With regard to policies to support households, especially concerning rents:**
  - ❖ Extend assistance with rent (fair rent) to all households paying excessive amounts in rent and at risk of social exclusion.
- ❖ **Policies to combat social exclusion:**
  - ❖ Establish a system of guaranteed minimum income for people who are unemployed or have no regular income, which is fully coordinated with public assistance to cover the cost of housing.
  - ❖ Apply the 'Housing First' concept extensively.
- ❖ **Policies to contain prices and protect consumers:**
  - ❖ Reconsider and revoke the latest changes introduced in the Law on Urban Rentals in 2013, introducing regulations to protect tenants and balance the rights and obligations of both parties.
  - ❖ Strengthen the role of the third social sector in executing and managing public and social policy in housing.

**11.2** By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

In 2014, in the Barcelona Metropolitan Area (where 68% of the population of Catalonia live) there were 17.66 million journeys per day on weekdays (both intra- and inter-city), slightly fewer than in 2006<sup>439</sup>. Over 46.3% were on foot, an increase of 44.2% on the figure for the previous year.

Private vehicles accounted for the second-largest proportion of journeys (33.6%, compared with 36.7% in 2006), followed by public transport, which increased from

<sup>439</sup> [http://doc.atm.cat/ca/dir\\_pdm/Observatori\\_Mobilitat/#20](http://doc.atm.cat/ca/dir_pdm/Observatori_Mobilitat/#20).



18.3% to 18.7%, and bicycles, whose use rose from 0.8% to 1.3% of daily journeys. In the case of public transport there was a notable increase in the number of daily journeys by bus, up from 57,161 to 96,472, coinciding with the introduction of new routes between municipalities in the Barcelona metropolitan area.

There are clear differences between intra- and inter-urban travel. While in terms of journeys within the same municipality journeys on foot predominate (62.6% in 2014), private transport is the alternative used most often for inter-urban journeys (66.1%). In the first case the proportion of journeys using public transport remained stable at around 14.5% in the period 2006-2014, while in the second it increased from 27.5% to 29.9%.

Barcelona has the highest level of public transport use (29.8%), considerably above the average for the Barcelona metropolitan area (18.6%). This difference in the use of public transport is indicative of the challenge for Catalonia: improving inter-municipal public transport links.

Users' behaviour depends greatly on variables such as gender and employment status. Generally, women prefer more sustainable forms of transport (going by public transport, bicycle or on foot), while men (aged 30 to 65) opt to use private vehicles.

Population ageing will lead to an increase in the number of people with special accessibility needs, a factor which will influence the future development of modes of transport. In 2012 80% of Catalan municipalities (>20,000 inhabitants) had already approved an accessibility plan. Favour non-motorised forms of travel areas with traffic calming measures have been created (30 km/h speed limit), the length of the roads involved quadrupling between 2004 and 2012 (from 197 km to 916 km).

The fares policy established by the Metropolitan Transport Authority (ATM) has progressively incorporated a range of social tickets to favour the use of public transport by the most vulnerable sectors, such as the unemployed and single-parent families. A total of 500,000 tickets of this type were sold between 2010 and 2012.

Regarding road safety, 261 people died as a result of traffic accidents in Catalonia in 2015, 13.5% more than in 2014. Sixty-seven per cent (176) of these deaths occurred on interurban highways and 33% (85) in urban areas. Although there was a 13.5% increase between 2014 and 2015, the total mortality rate fell by 28.5% on interurban highways and by 8.6% in urban areas between 2010 and 2015<sup>440</sup>.

On interurban highways the most common cause of accidents with victims was driver distraction (31.8% in 2015). By age group, 49.7% of victims were under the age of 34 in 2005, down to 33.7% in 2015. On the other hand people over the age of 64 accounted for 10.7% of victims in 2005 and 15.6% in 2015. In 2015 the 35-64 age group accounted for the greatest proportion of victims, at 50.0% of the total (39.6% in 2005).

On urban roads in 2015, motorcyclists accounted for the greatest number of deaths (479 or 45%), followed by pedestrians (387 or 35%). Although bicycles were only involved in 5.9% of fatal accidents in 2015, the number of deaths increased by 30.61% between 2010 and 2015. By age group, 57.8% of victims were under the age of 34 in 2005, down to 35.6% in 2015. On the other hand people over the age of 64 accounted for 14.7% of

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<sup>440</sup> Data based on the reports [Accidents de trànsit a Catalunya 2015. Ministry of Home Affairs](#) and [Anuari estadístic d'accidents de trànsit a Catalunya 2014](#).

victims in 2005 and 18.8% in 2015. In 2015 the 35-64 age group accounted for the greatest proportion of victims, at 44.1% of the total (27.4% in 2005).

One third of drivers killed in traffic accidents had consumed alcohol or drugs. Between 2014 and 2015 there was a 36% increase in the number of grave and fatal accidents at night, generally associated with the consumption of alcohol or drugs<sup>441</sup>

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Improve inter-municipal public transport links and promote non-motorised travel (by bicycle and on foot).
- ❖ Increase road safety by reducing the commonest causes of accidents (driver distraction and the consumption of alcohol or drugs).

**11.3** By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

According to the Catalan land usage map (MCSC 2013) the area corresponding to artificial surfaces rose from 3.82% of Catalonia's total land area in 1993 to 6.00% in 2005 and 6.4% in 2009.

According to the town planning map of Catalonia (MUC), which gives detailed information on the classification of land use, urban land accounts for 4.21% of the surface of Catalonia and land which could be developed 1.90%. These percentages hardly varied between 1 January 2010 and 1 January 2012 (the latest data available).

In Catalonia, on urban land, the MUC estimates an average population density of 56 per hectare (5,600/km<sup>2</sup>) and 29.4 homes per hectare (2,940/km<sup>2</sup>). The information provided by the MUC is consistent with that from the MCSC, although it is not directly comparable, as the MUC reflects the town planning status of land while the MCSC indicates the use to which it is really put at a given moment<sup>442</sup>.

In 2015 70.6% of the population of Catalonia were officially registered as residents in one of the 64 municipalities with more than 20,000 inhabitants (6.8% of the 947 municipalities in Catalonia)<sup>443</sup>. Of this 70%, 26.3% are concentrated in the three localities with the highest density of population: Barcelona (with 15,832 inhabitants/km<sup>2</sup>), L'Hospitalet del Llobregat (20,336/km<sup>2</sup>) and Santa Coloma de Gramenet (16,707/km<sup>2</sup>)<sup>444</sup>.

The Metropolitan Region of Barcelona occupies 10% of the country's area and accounts for 68% of the population. It has undergone three stages of demographic and town planning development. The first stage (1950-1970) saw a 40% increase in population and a doubling of the number of homes concentrated in the largest centres of

<sup>441</sup> [Dades trànsit \(traffic figures\) 2015.](#)

<sup>442</sup> [Balànç del grau de sostenibilitat de Catalunya. Government of Catalonia: 2014.](#)

<sup>443</sup> Own figures based on IDESCAT data.

<sup>444</sup> [Densitat de població. 2015. Municipis amb més de 20.000 habitants \(Population density- Municipalities with more than 20,000 inhabitants\). IDESCAT.](#)

population, with improvements to public transport infrastructures. Scattered housing estates for second homes and industrial estates appeared with no access to the public transport network.

In the second stage, from the 1970s onwards, the population stabilised, with the slowing of immigration from other parts of Spain as a result of the recession. In the years 1980-1997, although there was a drop in the population, the number of homes built continued to grow, although the total was only a third of those built in the 1970s. At this time there was an internal redistribution of the population, which moved to areas further away from the largest urban centres, where housing was cheaper and the housing density lower.

Between 1987 and 2001, of the 22,000 homes built in the Metropolitan Region of Barcelona, almost one third (31.3%) were houses, either detached (17.2%) or terraced (14.1%). This type of housing is more common the further one goes from the centre of the metropolitan region, reaching 39.8% in outlying areas.

The land occupied by low density housing increased by 20% in the Metropolitan Region of Barcelona in the period 1977-2000<sup>445</sup>. This more extensive development is discontinuous, fragmented and heterogeneous, at a distance from the main transport infrastructures, a fact that intensifies the need for communications infrastructures for these new areas.

The new Law on Territory<sup>446</sup>, currently being drawn up, is based on the need to establish new ways of influencing the land market, ensuring access to housing and economic activity.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Promote compact cities, preventing urban sprawl by means of regional and town planning.
- ❖ Rehabilitate urban centres and the districts that have deteriorated most with a view to improving the quality of life of the residents.
- ❖ Maintain the population in the densest urban nuclei, stimulating their social life to make them lively and dynamic.
- ❖ Minimise the need for non-essential travel outside urban nuclei, reducing demand for transport (and its environmental impact) and contributing to social and cultural life in urban centres.
- ❖ Ensure access to public transport systems for people who live in the urban centres furthest from the main transport infrastructures.

#### **11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage.**

<sup>445</sup> All Metropolitan Region of Barcelona data are from the [Pla Territorial metropolitana de Barcelona](#).

<sup>446</sup> [Llei de territori. Debats preliminars \(Preliminary debates on the new Territorial Law\)](#).

Regarding the challenges related to protecting our natural heritage the reader should see the comments on [SDG #13](#).

**11.5** By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.

In Report 1/2012<sup>447</sup> the CADS pointed out that in recent years there has been an increase in ordinary and extraordinary flooding<sup>448</sup>, especially on the coast. This increase would appear to be related to changes in land use and reduced soil permeability, greater population density (especially in summer, which is the time of year when most storms occur) and urban pressure.

Indeed, [flooding and heavy rain](#) are the disaster that causes the most serious financial losses in Catalonia, due to increased vulnerability (greater exposure) and the higher economic value of the assets damaged. Floods cause considerable damage to infrastructures, homes, crops, services, etc., and these are difficult to quantify as there is no specific record of this (as is normal practice internationally, data on economic losses are based on information provided by insurance companies).

Between 1981 and 2010 in the Barcelona metropolitan area there were 107 flooding incidents, 8 of which were catastrophic and 21 extraordinary, with a total of 11 lives lost. The largest number of incidents occurred in Barcelona (63), followed by Castelldefels (24)<sup>449</sup>. In the period 1996-2010 the Consorci de Compensació d'Assegurances paid compensation of 66.1 million euros (at 2015 values) in the Barcelona metropolitan area, 20.5 million euros of which corresponded to the city of Barcelona.

However, the impact of flooding on urban areas of Catalonia is not a new phenomenon. On 18 and 19 October 1930 the Francolí burst its banks, causing massive destruction with 14 lives lost, 8 of them in the city of Tarragona.

Another particularly serious flood occurred on 25 September 1962, affecting over 4,000 people. The victims were mainly in the Vallès Occidental area, where 815 people lost their lives, 250 of them in Terrassa, Sabadell and Rubí. The disaster was made much worse by the fact that it occurred at night when the victims were sleeping in homes built in flood-prone areas. It has been calculated that the economic losses related to this incident amounted to 533 million euros (at 2013 values). This includes both direct and indirect losses (the closing of factories and subsequent job losses).

<sup>447</sup> [http://cads.gencat.cat/web/.content/Documents/Informes/2012\\_1\\_Informe-Risc-i-canvi-climatic\\_DEF.pdf](http://cads.gencat.cat/web/.content/Documents/Informes/2012_1_Informe-Risc-i-canvi-climatic_DEF.pdf).

<sup>448</sup> Llasat et al. (2005) distinguishes between ordinary, extraordinary and catastrophic floods on the basis of the damage caused. Ordinary floods are increases in water levels that may destroy temporary riverside infrastructures; extraordinary flooding refers to rivers bursting their banks and causing damage; and catastrophic flooding involves severe damage or the total destruction of one or more infrastructures or buildings.

<sup>449</sup> Llasat, M.C. et al. "A multifactorial analysis of flood variability in the Mediterranean Area of Barcelona". International conference on urban risks. Proceedings Lisbon, 2016.

Another serious incident occurred between 6 and 8 November 1982, when the Segre burst its banks in Lleida. Fourteen lives were lost at different points in Catalonia with economic losses of 989 million euros (at 2013 values)<sup>450</sup>. It is worth noting that the 2011-2014 INUNCAT civil defence plan for the risk of flooding in Catalonia was activated most often in 2013 (20) and 2014 (17 times).

At the time of writing the Catalan Water Agency is drawing up its flood risk management plan for the Catalan river basin district, in line with CADS recommendations. In its report (1/2016)<sup>451</sup>, the board made the following recommendations:

- To examine in greater depth the effect of climate change on the risk of flooding,
- To integrate risk management in the instruments available, such as town planning regulations, and
- To take further measures to inform the public, raise awareness, increase our capacity for dealing with these situations and establish early warning systems.

With regard to damage caused by **strong winds**, in 2009 eight lives were lost in Sant Boi de Llobregat, four of them children. This incident had far reaching consequences: A total of 3,000 trees were damaged in the city of Barcelona, there were 367 incidents in schools, one of the runways at El Prat airport had to be closed, and power cuts caused by damage to the mains network affected 250,000 users. The economic losses suffered by the power companies are estimated to have been 21.86 million euros.<sup>452</sup>

A particularly serious episode of damage by **snow** occurred when strong winds and wet snow affected Catalonia, mainly in coastal areas, on 8 March 2010, causing two deaths. On this occasion Barcelona and Girona had up to 8 cm of snow. The snow brought down 36 high-voltage pylons, affecting 450,000 users in Barcelona and Girona, and total damage was estimated to be over 90 million euros (the power companies invested 60 million euros in repairs, the cost to agriculture and forestry was calculated at 35.58 million euros, and a further 1.5 million euros was allocated in subsidies to municipalities where more than 25% of the population were without power for more than 24 hours<sup>453</sup>).

This episode had been preceded by the exceptionally heavy snowfall of 24 to 26 December 1962, which affected the whole of Catalonia, the depth of snow reaching 110 cm in Sabadell, 100 cm in Barcelona, 85 cm in Girona and 20 cm in Lleida. The snow led to 5 deaths, 2 of them in Barcelona. Total economic losses in the city were estimated at 67.32 million euros (at 2013 values).

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<sup>450</sup> Llasat, M.C., J. Gilabert, M. Llasat-Botija, M. Cortès, 2015, Estudi de les inundacions catastròfiques a Catalunya 1900-2015, Report DAM/250904-26/1411. Project to Document Historic Emergencies. Protecció Civil.

<sup>451</sup> [Informe 1/2016 sobre el Pla de gestió del risc d'inundació del districte de conca fluvial de Catalunya](#). CADS, 2016.

<sup>452</sup> Llasat, M.C., M. Cortès, M. Llasat-Botija, J. Gilabert, 2015, Estudi de temporals de vent i nevades extraordinàries a Catalunya, Informe DAM/250904-30/1511. Project to Document Historic Emergencies. Protecció Civil.

<sup>453</sup> Llasat, M. C., M. Turco, P. Quintana-Seguí, and M. Llasat-Botija, 2014, The snow storm of 8 March 2010 in Catalonia (Spain): a paradigmatic wet-snow event with a high societal impact, Nat. Hazards Earth Syst. Sci., 14, 427–441, doi:10.5194/nhess-14-427-2014.

The extreme weather phenomenon causing most deaths in Catalonia is [extreme temperatures and heat waves](#). In Catalonia 3 consecutive days of exceptional heat increase the daily mortality rate by 19%, rising to 35% when the number of days extends to 7. However, 40% of deaths attributed to extreme heat do not occur in periods considered to be heat waves<sup>454</sup>. The impact of heat waves is more serious in urban areas, as a result of the Urban Heat Island effect.

In the city of Barcelona the number of deaths increases considerably when temperatures go above a 30.5°C threshold. The most vulnerable groups are those aged over 60 and children (Basagaña et al., 2011). Those living in precarious conditions with limited resources also constitute a vulnerable group, as their ability to adapt to such conditions is minimal.

During the heat wave that occurred between 3 and 6 August 2003, maximum temperatures averaged 35°C and the number of deaths was 53% higher than the previous year<sup>455</sup>. During the summer of 2003, in the city of Barcelona a total of 665 deaths due to heat were recorded<sup>456</sup>.

As a consequence of the effects of the heat wave in summer 2003, plans for protection against the effects of heat were put in place. The 2011-2014 PROCICAT plan for heat waves was activated once in 2011 and 3 times in 2012. In summer 2012 the PROCICAT plan was activated for heat waves one day in every three<sup>457</sup>.

[Drought and water stress](#) are a recurring phenomenon in the Mediterranean climate, which is characterised by very irregular rainfall with wide variations between one year and another. Catalonia is especially vulnerable to these two factors, a fact identified in the 2013-2020 Catalan Strategy for Adapting to Climate Change. Decreasing levels of domestic water consumption are a direct indicator of greater efficiency in the use of water and effective water saving. Since 2004 Catalonia has steadily reduced water consumption to a current level of 119 litres per inhabitant/day (106 in the Barcelona Metropolitan Area)<sup>458</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ [Make towns and cities more resilient by incorporating measures to mitigate and adapt to the effects of climate change and reduce related risks in both public and private aspects of town planning.](#)
- ❖ [Make towns and cities more resilient by incorporating measures to mitigate and adapt to the effects of climate change and reduce related risks in both public and private aspects of town planning.](#)

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<sup>454</sup> Xavier Basagaña et al. "Heat Waves and cause - specific mortality at all ages". *Epidemiology*. Volume 22, number 6, November 2011. DOI: 10.1097/EDE.0b013e31823031c5.

<sup>455</sup> [Pla d'actuació per a prevenir els efectes de les onades de calor sobre la salut \(Action plan to prevent the effects of heatwaves on health\) \(POCS 2016\). Ministry of Health.](#)

<sup>456</sup> [Aurelio Tobías & al. Short-term effects of extreme hot summer temperatures on total daily mortality in Barcelona, Spain, 2010.](#)

<sup>457</sup> [Memòria CECAT](#), 2012.

<sup>458</sup> [Indicador global d'adaptació als impactes del canvi climàtic a Catalunya. Catalan Office for Climate Change, 2014.](#)



- ❖ Increase the public's ability to protect themselves against disasters caused by weather or climate conditions.

**11.6** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

A common problem in large urban agglomerations is the concentration in the air of certain pollutants with local effects, such as nitrogen oxides (NO<sub>x</sub>) and particulate matter (basically PM<sub>10</sub> and PM<sub>2.5</sub>).

In the city of Barcelona the two pollutants that have exceeded the thresholds established by the European Union are NO<sub>2</sub> and PM<sub>10</sub>. The 2015-2018 Plan for improving air quality<sup>459</sup>, focuses on these two pollutants, which are caused by emissions from land transport and the activity of the port. The Plan envisages measures such as making municipal vehicles more environmentally friendly (electric vehicles), using groundwater to reduce resuspension, promoting non-motorised transport, improving public transport and awareness raising and education in environmental matters.

The 2020 Plan for improving air quality<sup>460</sup> in areas of special atmospheric protection aims to bring levels for particles smaller than 10 micrometers (PM<sub>10</sub>) and nitrogen dioxide (NO<sub>2</sub>) down to the standards specified in European legislation. The Plan envisages measures for all municipalities and stipulates that those with populations exceeding 100,000 must draw up their own plans and programmes of measures to improve local air quality. Barcelona, Badalona, Granollers, Santa Coloma de Gramenet and Terrassa have already drawn up their plans, while those for L'Hospitalet del Llobregat and Sant Andreu de la Barca are in the process of being drafted.

On 5 June 2015 Barcelona, together with representatives of large European cities such as Paris, London, Berlin and Milan and regional networks like AIR\_quality initiative of regions signed the Barcelona Declaration for air quality, noise reduction and improving health in large urban agglomerations.

The Declaration appeals to all agents, members of the public, social groups, businesses and government bodies to prioritise measures to promote, develop and support the application of plans to improve air quality to bring levels of atmospheric pollution below established legal limits and move towards the standards for air quality recommended by the WHO.

In Catalonia municipal waste accounts for 34% of all waste. According to the 2013-2020 PRECAT20 General Programme for Waste Prevention and the Management of Waste and Resources, in the period 2007-2012 the generation of waste in Catalonia decreased by 50%, the smallest reduction being in municipal waste, which decreased by only 13%.

<sup>459</sup> [Pla de millora de la qualitat de l'aire 2015-2018.](#)

<sup>460</sup> [Pla d'actuació per a la millora de la qualitat de l'aire, horitzó 2020.](#)



In Barcelona<sup>461</sup>, in the period 2009 to 2013 the amount of waste collected fell by 16% and per capita waste generation decreased from 1.46 kg/person/day to 1.23 kg/person/day. 89.8% of this waste was domestic (2013).

In the city of Barcelona selective waste collection reached its highest level in 2010 with 39.5% of the total, with the roll out of the collection of organic waste and an increase in the number of recycling points in the city. The decrease in the percentage of selective waste collection in 2013 can be largely explained by a reduction in the amount of paper and cardboard collected as a result of the recession and irregular recycling (theft from recycling bins).

For further information see [SDG #3](#) and [SDG #12](#).

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ [Improve air quality in urban nuclei, keeping levels of atmospheric pollution below the thresholds established by the World Health Organization to guarantee public health.](#)
- ❖ [Continue reducing the amount of urban waste generated, promoting selective collection of different types of waste and cutting food waste.](#)

**11.7** By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.

Green spaces are an essential element in improving the quality of life in urban nuclei and help to reduce the effects of climate change. Their management is a local public service, which is compulsory in municipalities of more than 5,000 inhabitants, and is intended to ensure that residents can enjoy high quality green spaces that are functional, easily accessible and offer attractive environments and landscapes.

Although no data is available for Catalonia as a whole, a study conducted in 2013 by the Cercle de Comparació Intermunicipal del Servei de Gestió Sostenible del Verd Urbà, comparing the provision of urban green spaces in 19 municipalities in the province of Barcelona and the city of Lleida (with a total population of 1,401,347 at the time of the study), shows that most of these municipalities have an average of 11.3 m<sup>2</sup> of green space per inhabitant, in line with the levels recommended by the World Health Organization<sup>462</sup>.

With over 15,000 inhabitants/km<sup>2</sup> Barcelona is one of the most densely populated cities in Europe and the third most densely populated in Catalonia. 35.3% of its municipal area is green spaces (47% of which corresponds to Collserola and 30.5% to urban parks and gardens). In terms of green space per inhabitant, in 2012 Barcelona had 17.87 m<sup>2</sup>/inhabitant (including Collserola) or 6.80 m<sup>2</sup>/inhabitant (excluding Collserola).

These green areas are isolated, which makes ecological connectivity throughout the city difficult. Barcelona City Council has a 2012-2020 Plan for Green Spaces and

<sup>461</sup> [Informe Ambiental de Barcelona 2013. Barcelona City Council, 2015.](#)

<sup>462</sup> [Informe de resultats 2013 Cercle de comparació Intermunicipal del Servei de Gestió Sostenible del Verd Urbà.](#) Barcelona Provincial Council, 2014.

Biodiversity whose aim is to connect the city with the natural environment, extend and improve the city's green areas, and preserve biodiversity.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Improve the ratio of green space per inhabitant with a view to complying with WHO recommendations (10-15 m<sup>2</sup> per inhabitant), especially in urban areas and in districts with fewer spaces and a more vulnerable population.
- ❖ Integrate green spaces in town planning and urban management as an indispensable green infrastructure for a healthy and inclusive city, facilitating connectivity between them and with other natural spaces near urban areas.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 11

The CADS considers that the main challenges facing Catalonia with respect to SDG 11 are to:

- ❖ Encourage policies to support families in order to prevent social exclusion and guarantee access to housing by ensuring there is sufficient social housing and public housing at accessible rents.
- ❖ Promote compact cities by restricting excessive, discontinuous, fragmented and heterogeneous urban growth remote from transport infrastructures.
- ❖ Ensure adequate public transport services and, in particular, to facilitate public transport links between municipalities.
- ❖ Ensure the adequate provision of green spaces for the well being of the urban population (in line with the values recommended by the WHO) and to think of green spaces as a first order urban infrastructure, providing the ecosystem services that are indispensable for a healthy, inclusive city.
- ❖ Increase urban resilience regarding the risk of serial failure in basic services (transport, energy supplies, telecommunications, water supplies, healthcare, etc.).
- ❖ Improve air quality in urban nuclei, keeping levels of atmospheric pollution below the thresholds established by the World Health Organization to guarantee public health.





## 12 ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

### UNITED NATIONS 2030 AGENDA GOALS

- 12.1** Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries.
- 12.2** By 2030, achieve the sustainable management and efficient use of natural resources.
- 12.3** By 2030, halve *per capita* global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.
- 12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.
- 12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.
- 12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.
- 12.7** Promote public procurement practices that are sustainable, in accordance with national policies and priorities.
- 12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.

## INTERNATIONAL CONTEXT

Agenda 21, adopted at the 1992 Rio summit, stated that 'the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production'.<sup>463</sup> Since then the United Nations has launched a range of initiatives, which were brought together at the Rio+20 summit under the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (10YFP)<sup>464</sup>.

The 10YFP is intended to involve a range of actors (governments, the private sector, civil society, researchers, UN agencies and finance institutions) in the development of programmes to inform consumers, educational programmes and programmes to promote sustainable lifestyles, public procurement, construction and buildings, and sustainable food programmes.

Worldwide, the extraction of materials has more than doubled over the last 30 years, from 36,000 tonnes in 1980 to 85,000 in 2013, and this growth has accelerated since 2002 in emerging economies. In *per capita* terms, extraction increased from an average of 8.2 tonnes to 11.8 tonnes, with significant variation across regions.<sup>465</sup>

This consumption exceeds the planet's capacity to regenerate resources. According to the Global Footprint Network, Earth's 'global ecological footprint' is currently 1.6 planets. In other words, humanity consumes in a year resources that the earth takes 1.6 years to produce<sup>466</sup>. If populations and consumption continue to grow at current rates, by 2030 we will need close to the equivalent of two planet Earths.

With regard to the efficient use of resources, it is estimated that a third of all the food produced each year is wasted (equivalent to 1.3 billion tonnes worth 1 billion US dollars) at all stages of the chain (production, transport, retail and consumption). World demand for energy is also expected to continue increasing, despite more efficient technology<sup>467</sup>.

## EUROPEAN CONTEXT

In Europe sustainable consumption and production practices are promoted via policies to encourage the efficient use of resources and, more recently, via the concept of the circular economy<sup>468</sup>, incorporating policies on waste.

Europe's economies are major consumers of resources. Based on the material flow analysis methodology, which quantifies the volumes extracted, imported and exported

<sup>463</sup> Point 4.3 of Agenda 21 (<https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>).

<sup>464</sup> The United Nations Environment Programme acts as secretariat for these programmes: <http://www.unep.org/10yfp/Home/tabid/133135/Default.aspx>.

<sup>465</sup> This figure is based on all the material resources extracted in a year, classified under four groups: construction materials, minerals, fossil fuels and biomass. Figures from the Vienna University of Economics and Business (<http://www.materialflows.net>)

<sup>466</sup> [http://www.footprintnetwork.org/en/index.php/GFN/page/world\\_footprint/](http://www.footprintnetwork.org/en/index.php/GFN/page/world_footprint/)

<sup>467</sup> <http://www.un.org/sustainabledevelopment/sustainable-consumption-production>

<sup>468</sup> [http://ec.europa.eu/environment/circular-economy/index\\_en.htm](http://ec.europa.eu/environment/circular-economy/index_en.htm). Communication *Closing the circle. EU Action Plan for a circular economy*(COM(2015)614final) refers explicitly to SDG 12.

by an economy, in 2014 domestic materials consumption (DMC)<sup>469</sup> in the EU was 6.641 billion tonnes (13.1 tonnes per capita).

This indicator rose in the first decade of the twenty-first century to a peak of 16.6 tonnes per capita in 2007, after which it began to drop. The reduction in Spain has been extremely pronounced (from 20.6 tonnes *per capita* in 2007 to 8.3 tonnes in 2014), highlighting the decline in economic activity, and especially construction, during the recession. Spain now has the lowest DMC *per capita* in Europe, according to Eurostat.

Resource productivity is the EU's main resource use efficiency indicator as established in the Roadmap to a Resource Efficient Europe.<sup>470</sup> The EU has not, however, set a quantifiable target for this.

The resource productivity of the EU-28 increased by 27% between 2002 and 2014, from 1.53 to 1.95 euros/kg. Using this measurement, productivity increased in most European countries, suggesting a decoupling between economic growth and the consumption of resources.<sup>471</sup>

These figures could be interpreted as improvements in efficiency, but Eurostat warns that they could be a result of the offshoring of intensive production activities to other parts of the world. This has led to the development of another indicator that takes into account raw materials extracted for the manufacture of imported products, the so-called 'material footprint'.<sup>472</sup> Based on this methodology, there is less or no decoupling<sup>473</sup>.

Turning to the issue of waste, according to Eurostat figures Europe generated 2.514 billion tonnes of waste in 2012 and treated 2.302 billion tonnes. Four per cent of the waste generated (almost 100 million tonnes) is classified as hazardous.

Municipal waste accounts for just 10% of the total waste generated in the EU, but is highly significant due to its complex nature and close relationship with consumption patterns. Each European generated 475 kg of municipal waste in 2014. In Spain this figure was 435 kg per person, and it is going down. Forty-four per cent of the waste generated is recycled, 28% is sent to landfill and 27% is incinerated.<sup>474</sup>

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<sup>469</sup> The DMC indicator is calculated by adding materials extracted and imported and subtracting exports. Industrial and construction materials account for almost half of DMC in Europe, while biomass accounts for 27%, fossil fuels 23% and metal minerals 4. Eurostat figures.

<sup>470</sup> Ratio between economic growth (measured in GDP terms) and the extraction of resources (DMC). <http://ec.europa.eu/eurostat/web/europe-2020-indicators/resource-efficient-europe>

<sup>471</sup> In some cases this decoupling is relative (DMC growing more slowly than GDP), but in most countries, and across the entire EU, it has been absolute (DMC and GDP both growing) [http://ec.europa.eu/eurostat/statistics-explained/index.php/Resource\\_productivity\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Resource_productivity_statistics)

<sup>472</sup> Eurostat is developing 'raw material equivalents' [http://ec.europa.eu/eurostat/statistics-explained/index.php/Material\\_flow\\_accounts\\_-\\_flows\\_in\\_raw\\_material\\_equivalents](http://ec.europa.eu/eurostat/statistics-explained/index.php/Material_flow_accounts_-_flows_in_raw_material_equivalents)

<sup>473</sup> See article by WIEDMANN et al. *The material footprint of nations*. PNAS. 19 May 2015. Vol. 112, n. 20. doi: 10.1073/pnas.1220362110

<sup>474</sup> [http://ec.europa.eu/eurostat/statistics-explained/index.php/Municipal\\_waste\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Municipal_waste_statistics)

The target proposed by the European Commission in the Circular Economy Package is to increase the volume of municipal waste that is recycled or prepared for reuse to 65%, and to gradually limit the waste sent to landfill to 10% by 2030<sup>475</sup>.

With regard to food waste, it is estimated that some 100 million tonnes of food are wasted each year<sup>476</sup>. In the Action Plan for the Circular Economy, the European Commission made a commitment to meet target 12.3 on food waste. The measures envisaged include establishing a common methodology for measuring waste at the different stages of the food chain and creating a platform for member states and stakeholders to examine how to achieve the targets set.

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are therefore detailed below, structured in line with the 2030 Agenda targets.

**12.1** Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries.

Catalonia does not participate in any programme under the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (10YFP), but it is implementing policies in this area.

The Government of Catalonia has various reference documents dealing with this area, including the Catalonia 2020 Strategy, the Catalan ecodesign strategy for a circular and eco-innovative economy, the Strategy to foster the green economy and the circular economy and the General waste prevention and resource management programme for 2013-2020<sup>477</sup>. The Catalan sustainable development strategy, approved in 2010, included two pillars related to this issue, one on production (*Pillar 4: (calling for an ecoefficient, competitive and innovative Catalonia)*); and one on consumption (*Pillar 5. Catalonia consumes wisely*).

On the international stage, the Government of Catalonia is a participant in the Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC), which has been an activity centre for the Action Plan for the Protection and Development of the Mediterranean Basin (MAP)<sup>478</sup> since 1996. The work of the SCP/RAC includes a key role in ensuring sustainable consumption and production are included in the measures agreed in the Barcelona Convention, with the approval of a Regional Plan on Sustainable Consumption and Production identifying common goals and actions for 21 Mediterranean countries.

<sup>475</sup> Proposal for a new directive on waste (COM(2015) 595 final): <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015PC0595>

<sup>476</sup> [http://ec.europa.eu/food/safety/food\\_waste/index\\_en.htm](http://ec.europa.eu/food/safety/food_waste/index_en.htm)

<sup>477</sup> [http://mediambient.gencat.cat/ca/05\\_ambits\\_dactuacio/empresa\\_i\\_produccio\\_sostenible/](http://mediambient.gencat.cat/ca/05_ambits_dactuacio/empresa_i_produccio_sostenible/)

<sup>478</sup> <http://www.cprac.org/ca/qui-som/scp/rac>



The main challenge facing Catalonia with regard to this Agenda target is to:

- ❖ Participate in the measures included in the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (10YFP).

## 12.2 By 2030, achieve the sustainable management and efficient use of natural resources.

Setting a specific date (2030) by which natural resources must be sustainably managed and efficiently used is an extremely ambitious exercise and a very wide ranging one, as an economy such as that of Catalonia uses a great many different resources. Taking the target as defined by the United Nations, the challenges would be enormous, and would require first identifying which are the key natural resources for the country.

The 2030 Agenda uses material flow indicators to quantify this issue, although there is no clear definition of what would be a 'sustainable' value for these indicators and, thus, what target needs to be met by 2030. The United Nations indicators for this target refer to the productivity of resource use based on various material flow analysis (MFA) techniques, such as material footprint (MF) and domestic materials consumption (DMC) (total, *per capita* and as a ratio of GDP).

Material flow analysis has been incorporated into official statistics at member state level but this is not broken down further. The Spanish National Statistics Institute prepares material flow accounts for the whole of Spain.

Apart from official statistics, a number of scientific works have been published on this matter<sup>479</sup>, including an extensive study published in 2015 analysing domestic materials consumption in Spain and in each autonomous community<sup>480</sup>.

According to this study, domestic materials consumption grew from 65.8 million tonnes in 1996 to 121.3 million tonnes in 2004. In 2010, however, this was down to 75.6 million tonnes, reflecting the impact of the economic recession on the extraction and consumption of materials by the Catalan economy.

Table 1 shows the figures of Catalonia for a range of United Nations DMC indicators and the materials productivity indicators used by the EU.

**Table 1. Selection of material flow indicators for Catalonia**

	1996	2004	2010
<b>DMC (million tonnes)</b>	65.8	121.3	75.6
<b>DMC (tonnes per capita)</b>	10.8	17.8	10.1
<b>DMC/GDP (kg/thousand euros GDP<sub>2000</sub>)</b>	649.5	902.0	528.3

<sup>479</sup> Notably the doctoral thesis of Cristina SENDRA (2008). *Anàlisi dels fluxos de materials de sistemes. Avaluació del metabolisme material a diferents escales*. Autonomous University of Barcelona (UAB). The author wrote a summary of her doctoral thesis for an unpublished chapter of a study commissioned by CADS (*Anàlisi del Metabolisme Energètic de l'Economia Catalana*).

<sup>480</sup> GONZÁLEZ, Ana C.; SASTRE, Sergio; RAMOS-MARTÍN, Jesús 'El metabolismo socioeconómico de Cataluña, 1996-2010'. A: CARPINTERO, Óscar (dir.), *El metabolismo económico regional español*, Madrid: FUHEM Ecosocial, 2015, p. 499-543.

Material productivity (euro/kg)	(GDP/DMC)	1.54	1.11	1.89
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Source: GONZÁLEZ et al. (2015). *El metabolismo socioeconómico de Catalunya 1996-2010*. Fuhem Ecosocial.

There are no figures for Catalonia's material footprint.

The main challenges facing Catalonia with regard to this Agenda target are to:<sup>481</sup>

- ❖ Move progressively towards more sustainable production and consumption practices, advancing towards a circular, eco-efficient and innovative economy.
- ❖ Identify the natural resources that are fundamental for the functioning of the Catalan economy and society and to develop a clear framework, with a potentially transformative programme of consistent measures led jointly by the public and private sectors, to ensure the sustainable and efficient management and use of these resources.
- ❖ Incorporate material flow indicators into official statistics in accordance with the methodologies developed by Eurostat.

**12.3** By 2030, halve *per capita* global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.

According to figures from a study by the Autonomous University of Barcelona and the Waste Agency of Catalonia, 262,471 tonnes of food were wasted in Catalonia in 2010 (equivalent to 35 kg *per capita*). This is a significant amount, equivalent to throwing out all the food consumed throughout Catalonia over 25.5 days<sup>482</sup>.

This waste is produced by households, restaurants, the catering trade, retailers and public authorities (without taking into account losses at the wholesale distribution stage, in the food transformation industry and on farms).

The 2020 General Programme for Waste Prevention and the Management of Waste and Resources (PRECAT20), which has not yet been formally approved, establishes two specific targets in this area, which tie in with the 2030 Agenda goal:

- Firstly, by 2020 to reduce by 50% compared with 2010 levels the waste produced by retailers, restaurants, the catering trade and households (PRECAT20 target 4b.1). This target corresponds to (and brings forward by 10 years) the target set in SDG 12.3 for reducing food waste at the retail and consumer levels (specifying a *per capita* target).
- Secondly, to establish before the end of 2018 a target for reducing food waste in the primary and agricultural sectors, including wholesale distribution (PRECAT20 target

<sup>481</sup> Taking into account that there is no definition for the sustainable value of these indicators.

<sup>482</sup> [Diagnosi del malbaratament alimentari a Catalunya](#), Catalan Waste Agency and Autonomous University of Barcelona, 2011.

4b.2). This corresponds to the second part of SDG 12.3, which refers to losses at the production and distribution stages, although it does not quantify a target.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Reduce food waste throughout the production, distribution and consumption chain, through the implementation of measures already established in current plans (or, as in the case of PRECAT 2020, pending approval).
- ❖ Measure effectively the level of waste occurring at each stage of the food chain.
- ❖ Raise public awareness of the problem of food waste and the impact it has, especially among the economic and social actors most responsible for current waste levels and, above all, among younger generations where there is the greatest potential for changing behaviour with regard to this problem.

**12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

The main instrument regulating the use of chemical products in the EU is the European regulation known as REACH (EC Regulation No. 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals), which came into force in 2007 with the aim of better protecting human health and the environment. It specifically establishes that companies must identify and manage the risks associated with substances manufactured and sold in the EU.

Spain is also a signatory to the main international agreements and treaties concerning chemical products and contamination, such as the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal, the Rotterdam Convention on hazardous chemicals and pesticides in international trade, the Stockholm Convention on persistent organic pollutants<sup>483</sup>, and the Strategic approach to international chemicals management<sup>484</sup>. It should be noted, however, that REACH is the strictest of the aforementioned international agreements.

In 2014 there were 1,217 sites with potentially contaminated soil in Catalonia (i.e., with indications that they may be contaminated). According to the Catalan Waste Agency<sup>485</sup>, 80% of this contamination is caused by industrial and commercial activities. The chemical and mentality industries, waste management and the oil industry account for 66% of the industrial contamination. Petrol stations and hydrocarbon distribution centres account for 88% of the contamination produced by commercial activities.

<sup>483</sup> BARREIRA, A.; OCAMPO, P.; RECIO, E. (2007). *Medio Ambiente y Derecho Internacional: Una Guía Práctica*. International Institute for Law and the Environment. Caja Madrid Social Fund.

<sup>484</sup> [Strategic Approach to International Chemicals Management](#).

<sup>485</sup> [Summary report of the technical conference El sòl com a recurs. Investigació i descontaminació sostenible](#). Ministry of Territory and Sustainability and Catalan Waste Agency, 2015.

The target also covers the generation of hazardous waste, which in 2014 totalled 412,000 tonnes (11% of all industrial waste), equivalent to 55 kg per person per year. These figures include the hazardous wastes declared by the centres listed on the Catalan register of industrial waste producers, including extractive and manufacturing industries, suppliers of energy, water and sanitation, and waste management and decontamination businesses<sup>486</sup>. They do not include radioactive waste which is handled by the public company Enresa.

The chemical and pharmaceutical sectors are the main generators of hazardous waste (around 60% of the total). Half of the hazardous waste generated in Catalonia is recycled (i.e. it is reused as a raw material in the same or another industry), 3% is used to generate power, and almost 25% is subject to physical or chemical treatment. The remainder goes for disposal or incineration<sup>487</sup>.

Turning to the treatment of waste generated, currently 53.9% of all waste is recycled (47.7% for material recovery, 6.2% for energy recovery)<sup>488</sup>.

Although the target is very broad, the main challenges for Catalonia with regard to this Agenda target are to:

- ❖ Minimise the volume of hazardous waste generated and ensure that 100% of that generated is correctly managed, developing where possible recovery systems in line with the aims of the circular economy.
- ❖ Minimise the population's exposure to pollution (air, water and land), improving control systems and reducing the areas contaminated by the dumping of hazardous chemical products.
- ❖ Confirm the sites containing contaminated soil in Catalonia and adopting measures to eliminate them (to be carried out by the companies responsible).

#### **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse policies.

The waste generated in Catalonia fell by 50% between 2007 and 2012, according to PRECAT20, coinciding with the economic recession<sup>489</sup>. A total of 10.5 million tonnes of waste were generated in Catalonia in 2014, of which construction accounts for 25%, industry for 34%, municipal waste for 34% and urban wastewater treatment plants for 5%<sup>490</sup>. This is in line with the PRECAT20 target for reducing total primary waste generated (municipal, industrial and construction) by 15% (by weight) by 2020 compared with 2010 [PRECAT20 target 4a.1].

<sup>486</sup> Figures from annual report [\*Els residus generats per les indústries inscrites en el registre de productors de residus a Catalunya\*](#). October 2015.

<sup>487</sup> Ibid.

<sup>488</sup> PRECAT20 figures for 2012.

<sup>489</sup> Construction waste was reduced by 76% while industrial waste decreased by 33% and municipal waste by 13%.

<sup>490</sup> Figures from the website of the Waste Agency of Catalonia.

One of the challenges in this area, therefore, is to ensure this downward trend continues and that economic recovery does not drive the generation of waste back up again in Catalonia. The primary method for reducing waste must be prevention, i.e. measures to prevent waste being generated. New prevention and reduction targets must also be set that are ambitious<sup>491</sup> and in line with those established in the European framework for policies on the circular economy.

With regard to municipal waste, according to the Catalan Waste Agency 485.5 kg per person were generated in 2014 (equivalent to 1.33 kg/person/day). Of this, 62% was non-segregated waste<sup>492</sup>. The proportion of segregated waste collected has grown since the implementation of selective collection systems in Catalonia. In 2000 just 14% of waste generated was segregated, in 2011 this was up to 40.6%, but has tailed off in recent years to 38% in 2014%)<sup>493</sup>.

Selective collection at source is vital for the subsequent recycling of recoverable materials. One of the PRECAT20 targets is to increase the selective collection of municipal waste to at least 60% and to also ensure that at least 55% of household and commercial waste is prepared for reuse and recycling (paper, metals, glass, plastic, biowaste and other recyclable fractions).

The generation of waste is closely linked to economic activity and, in general, to the 'linear' production model that is standard in industry. In recent years efforts have been made in many areas to switch to more circular forms of production, with waste recovered as a resource, the use of ecodesign to reduce a product's footprint throughout its life cycle, etc. Moving towards a circular economy will help reduce the environmental impacts associated with production, reduce waste generation and use resources more efficiently.

Changing the production model towards a circular economy is one of the challenges to be met in order to reduce waste throughout the economy and increase the proportion that is recycled of the waste that cannot be prevented. Some of the tools that could be used to change habits and opinions in order to advance towards a more circular economy include making the use of ecodesign concepts more widespread, the application of symbiotic industrial practices on industrial estates, new business models based on services rather than products (where the durability and recovery of materials and components is strategic for companies), and tax instruments.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Ensure the continuation of the downward trend in the generation of waste, setting new prevention and reduction targets that are ambitious and in line with those established in the European framework for policies on the circular economy, and which decouple the generation of waste from economic growth.

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<sup>491</sup> [4a.2] To establish, before the end of 2016, specific targets for reducing waste for specific flows and sectors. These targets by be global or expressed as population, economic or other ratios.

<sup>492</sup> Of the 2,240,400 tonnes of non-segregated waste and refuse (including from waste collection points, street cleaning, beaches, etc.), 32% was incinerated and 68% deposited in controlled landfill sites.

<sup>493</sup> The figure corresponds to the 'gross' volume collected. Excluding 'inappropriate' waste, i.e. waste not included in collection services, the net proportion would be 31.24%.

- ❖ Develop new systems that substantially increase selective waste collection (moving towards deposit, refund and return systems for packaging, door-to-door collection, payment for waste generation, etc.).
- ❖ Make decisive advances towards the effective implementation of the circular economy, making the use of ecodesign concepts more widespread, the use of tax instruments and innovative public procurement practices.

**12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.**

This target refers to companies building sustainability criteria into their practices and publishing sustainability reports, practices that fall under the heading of corporate social responsibility (CSR). CSR is defined as ‘a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders – customers, suppliers, employees, investors, and the community in which they operate’ on a voluntary basis<sup>494</sup>.

Catalan businesses have access to a Directory of CSR Experiences<sup>495</sup>, which lists companies that have published their good CSR practices and have been assessed by the Social Responsibility Commission of the Council for Labour Relations, whose members include representatives of trade unions, employers' associations and the Government of Catalonia in partnership with the CTEEC. From 2014 there were 71 companies listed in the directory, most of which (43) have more than 250 employees. It is worth noting, however, that this is not an exhaustive list of all the reports published in Catalonia, and is therefore not sufficient for measuring the indicator proposed by the United Nations for this target (12.6.1 *number of companies publishing sustainability reports*).

A range of public and private initiatives have been in place for a number of years to promote CSR in Catalonia. One of these is the RScat<sup>496</sup> portal, developed by the Government of Catalonia, the Foment employers' federation, the Catalan association of SMEs (PIMEC) and the CCOO and UGT trade unions, to foster a culture of social responsibility and give companies, organisations, individuals and the government itself an on-line reference site.

Furthermore a CSR week has been held each year since 2010<sup>497</sup>. In 2015 the Respon.cat association was set up, a business initiative intended to provide Catalan

<sup>494</sup> [Green paper on promoting a European framework for corporate social responsibility](#). COM(2001)366final.

<sup>495</sup> [Directori d'experiències de RSE \(Directory of CSR experiences\)](#). Council for Labour, Economy and Social Affairs of Catalonia (CTEEC).

<sup>496</sup> <http://rscat.gencat.cat/ca/>

<sup>497</sup> Organised by the Ingeniería Social company and the +responsables association. <http://www.setmanarse.cat/>



companies with a single point of reference for information on socially responsible corporate management and to have a high-profile international role in this field.<sup>498</sup>

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Ensure that a culture of social responsibility is fully incorporated into the day-to-day running of businesses and organisations.
- ❖ Improve the collection of data in order to assess progress in CSR in Catalonia.

#### **12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities.**

Public procurement is a tool that can be used to foster the development of products and services with reduced impact on the environment or which generate greater social benefits. The United Nations defines sustainable procurement as ‘a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment’.<sup>499</sup>

Public authorities in Catalonia have been incorporating sustainable procurement into their practices for some years, based on the mechanisms envisaged in Spanish *Law 30/2007 governing public sector contracts*, building social and environmental considerations into public procurement when both seeking tenders and awarding them.

The Government of Catalonia has included environmental criteria in the majority of tendering processes involving centralised procurement, such as for electricity<sup>500</sup>, paper, office furniture, stationery, cleaning services, postal and courier services, vehicles, IT equipment, toners and ink<sup>501</sup>. It has also prepared a guide to the inclusion of social clauses in the procurement processes carried out by each ministry, together with a range of guides to the green procurement of different types of products and services<sup>502</sup>.

<sup>498</sup> <http://www.respon.cat/>

<sup>499</sup> Definition established by the *UN Sustainable Procurement Task Force* in 2006 in the document ‘Procuring the future’ and adopted by the Multilateral Consultative Committee of the UN 10-Year Framework of Programmes on Sustainable Public Procurement. [UK version: <http://comprasostenible.net/>]

<sup>500</sup> Within the framework of the European GPP2020 project (procurement for a low-carbon economy) [the Government of Catalonia issued a call for tenders for a power supply contract](#) stipulating that at least 30% of the power must be generated from renewable sources or high-efficiency code generation (double the previous comment).

<sup>501</sup> [http://economia.gencat.cat/ca/70\\_ambits\\_actuacio/contractacio\\_publica/comissio\\_central\\_de\\_subm\\_instruments/acords\\_marc\\_i\\_contractes\\_centralitzats\\_en\\_execucio/](http://economia.gencat.cat/ca/70_ambits_actuacio/contractacio_publica/comissio_central_de_subm_instruments/acords_marc_i_contractes_centralitzats_en_execucio/)

<sup>502</sup> [http://economia.gencat.cat/ca/70\\_ambits\\_actuacio/contractacio\\_publica/junta\\_consultiva\\_de\\_contractacio\\_administrativa/informes\\_recomanacions\\_instruccions\\_acords\\_i\\_altra\\_documentacio/guies/guies\\_dels\\_grups\\_de\\_treball/](http://economia.gencat.cat/ca/70_ambits_actuacio/contractacio_publica/junta_consultiva_de_contractacio_administrativa/informes_recomanacions_instruccions_acords_i_altra_documentacio/guies/guies_dels_grups_de_treball/)



Since 2013 it has prepared reports on the inclusion or otherwise of social and environmental clauses in Government of Catalonia contracts.<sup>503</sup>

It should be noted that new legislation has recently been published, *Decree Law 3/2016, of 31 May, on urgent measures regarding public procurement*<sup>504</sup>, in order to transpose two 2014 European directives on public procurement which had not been transposed within the time limits established in Spanish legislation. Measures included in this law include making it compulsory to break contracts down into smaller batches to allow SMEs and non-profits to tender. It also requires that the assessment of tenders prior to awarding takes into account the life cycle of goods and services, including environmental and energy costs, maintenance requirements throughout their useful lives, from the procurement of raw materials to disposal and dismantling costs.

At the local authority level, of particular note are Barcelona City Council's pioneering role in fostering green procurement<sup>505</sup>, and examples of the centralised procurement of products and services through a local authority procurement hub<sup>506</sup>.

The main challenge facing Catalonia with regard to this target is to:

- ❖ Ensure that public procurement processes by all public authorities incorporate environmental and social clauses, as an effective mechanism for encouraging the development of a green, circular economy.

**12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.

The importance of education for sustainable development has been dealt with under various SDGs, in particular target 7 of [SDG #4](#) and target 3 of [SDG #13](#).

The Government of Catalonia has developed a website containing educational resources on issues related to sustainability, including consumption<sup>507</sup>, and there are extremely interesting private initiatives in this field.

The internalisation of environmental costs (through specific legislation or green taxes) could prove to be a highly effective tool for increasing understanding about unsustainable consumption patterns and raise public awareness.

It is important to note that, given present levels of globalisation, the products we consume in one place may have been produced in distant countries. Procurement

<sup>503</sup> Annual reports on the inclusion of social and environmental clauses in Government of Catalonia contracts: <http://exteriors.gencat.cat/ca/ambits-dactuacio/contractacio-publica/direccio-general-de-contractacio-publica/-seguiment-i-avaluacio-dels-contractes/informes-tematics-de-les-adjudicacions-contractuals-anuals/>

<sup>504</sup> <http://portaldogc.gencat.cat/utillsEADOP/PDF/7133/1500250.pdf>

<sup>505</sup> <http://www.ajsosteniblebcn.cat/cat>

<sup>506</sup> <http://ccdl.cat/>

<sup>507</sup> [http://mediambient.gencat.cat/ca/05\\_ambits\\_dactuacio/educacio\\_i\\_sostenibilitat/educacio\\_per\\_a\\_la\\_sostenibilitat/suport\\_educatiu/recursos\\_educatius/consum/](http://mediambient.gencat.cat/ca/05_ambits_dactuacio/educacio_i_sostenibilitat/educacio_per_a_la_sostenibilitat/suport_educatiu/recursos_educatius/consum/)

decisions should therefore take into account labour conditions and the environmental and social impact at source. Labelling and certification schemes provide a means of ensuring traceability and monitoring the conditions under which a product has been produced.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Ensure that environmentally friendly lifestyles are a regular and normalised feature in the mass media and social networks, given their influence on large parts of the population.
- ❖ Roll out the use of environmental labelling and certification schemes which are easily identifiable by consumers.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 12

The CADS considers that the main challenges facing Catalonia with respect to SDG 12 are to:

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| <ul style="list-style-type: none"> <li>❖ Ensure an effective transition towards a circular economic model which is eco-efficient and innovative, through changing business models, the development of green taxes, etc.</li> <li>❖ Identify the key natural resources for Catalonia's economy and society and foster specific strategies for ensuring that they are used more efficiently.</li> <li>❖ Reduce food waste throughout the entire food chain.</li> <li>❖ Ensure the continuation of the downward trend in the generation of waste, decoupling the generation of waste from economic growth.</li> </ul>               |
| <ul style="list-style-type: none"> <li>❖ Increase the selective collection of different types of waste, setting ambitious targets and implementing the most effective instruments for driving changes in public behaviour in this area.</li> <li>❖ Ensure that public procurement processes by all public authorities in Catalonia incorporate environmental and social clauses.</li> <li>❖ Make progress on the internalisation of environmental costs, through specific legislation or green taxes, in order to encourage lifestyles and business practices based on the principles of the green, circular economy.</li> </ul> |





## 13 TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS<sup>508</sup>

### UNITED NATIONS 2030 AGENDA GOALS

- 13.1** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
- 13.2** Integrate climate change measures into national policies, strategies and planning.
- 13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

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<sup>508</sup> It is recognised that the United Nations Framework Convention on Climate Change is the primary international intergovernmental forum for negotiating the global response to climate change.

## INITIAL CONSIDERATIONS

Climate change is one of the main challenges facing the world. Its effects have been apparent around the world for many years now, with rising air temperatures, changes in rainfall patterns, retreating permafrost, rising sea levels, acidification, rising seawater temperatures, etc. These changes affect both ecosystems and people. Forecasts indicate that these effects will intensify in the coming decades.

The main causes of climate change are man-made greenhouse gas (GHG) emissions into the atmosphere, which have been increasing rapidly since the pre-industrial era due to demographic and economic growth based on the burning of fossil fuels (coal, oil, natural gas), and which are now greater than ever. This has resulted in higher concentrations of carbon dioxide, methane and nitrous oxides in the atmosphere than at any time in the last 800,000 years.

The effects of these emissions, combined with the loss of forestry mass and other man-made causes, are felt throughout the climate system and it is extremely likely that they have been the main cause of the rising temperatures recorded since the middle of the twentieth century<sup>509</sup>. This warming will increase the likelihood of serious, widespread and irreversible damage to populations and ecosystems. Substantial and sustained reductions in greenhouse gas emissions will be necessary to contain climate change. This, together with measures to adapt to global warming, could help limit the risks of climate change.

In [SDG #13](#) it is specifically noted that the United Nations Framework Convention on Climate Change (UNFCCC) is the primary international, intergovernmental forum for negotiating the global response to climate change. The last Conference of Parties (COP 21) was held in Paris, where governments agreed a long-term goal of keeping the increase in global average temperature to below 2°C above pre-industrial levels, ideally 1.5%, by reducing GHG emissions.

The Paris Agreement recognises that developing countries are especially vulnerable to the impacts of climate change and article 9 establishes that developed countries will continue to provide financial resources via contributions to the so-called green fund or climate fund, set at 100 billion dollars a year until 2025. The Agreement also affirms the importance of education, training, public awareness, and strengthening information mechanisms.

The SDG on climate change focuses on the impacts of climate change as one of the key factors limiting sustainable development and potentially preventing the achievement of the 2030 Agenda goals. For developed countries this SDG represents the greatest transformational challenge<sup>510</sup>.

These impacts include climate-related risks and disasters, these being the main focus of SDG 13, as the impacts on other areas or sectors (i.e. water, biodiversity, agriculture, etc.) are dealt with under their respective SDGs. The other challenges defined here refer

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<sup>509</sup> IPCC, 2014: Climate Change 2014: Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

<sup>510</sup> [Understanding the transformational challenge for developed countries. Stakeholder forum, 2015](#)

to our capacity to mitigate and adapt to climate change at the government, social and individual levels.

## INTERNATIONAL CONTEXT

Between 2005 and 2015 over 1.5 billion people were affected by disasters<sup>511</sup>. The figures are clear: 700,000 fatalities, 1.4 million people injured and over 23 million people made homeless<sup>512</sup>.

People's vulnerability to the effects of disasters is linked to the socio-economic level of the country in which they live and its capacity for resilience: while countries with high income levels were hit by 41% of the weather disasters recorded, they accounted for just 4% of deaths, while 89% of deaths occurred in middle to low income countries although they only suffered 26% of the total disasters.

The economic losses from these disasters were concentrated in the higher income countries (61%), compared with 10% in middle to low income countries, due to both the higher economic value of the assets affected and the lack of information available on poorer countries (where figures are not systematically collected). In relative terms, disasters cost the poorest countries 5% of their GDP while in more privileged countries the impact was just 0.2% of GDP<sup>513</sup>.

According to the United Nations Office for Disaster Risk Reduction (UNISDR) disasters are increasing in both frequency and intensity. Both the UNISDR and the UNFCCC recognise that climate change increases the risk of disasters. According to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), climate change will aggravate existing risks and create new risks for natural and human systems.

Ninety per cent of disasters occurring between 1995 and 2015 were weather related<sup>514</sup>, resulting in 606,000 deaths, an average of 30,000 per year, and 4.1 billion casualties (injured, left homeless or in need of emergency assistance).

Weather-related disasters have increased, mainly due to an increase in flooding and storms. **Floods** accounted for 43% of weather-related disasters between 1995 and 2015, affecting 2.3 billion people (95% of them in Asia) and causing 26% of all deaths. **Storms** (including cyclones, hurricanes and high winds) accounted for 28% of disasters and are responsible for the greatest number of deaths, 40% of the total. Eighty-nine per cent of the 242,000 deaths in this period occurred in lower-income countries, even though they experienced just 26% of all storms.

**Droughts** represented 5% of all weather-related disasters between 1995 and 2015, mainly affecting Africa (41% of droughts), where they contributed to perpetuating

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<sup>511</sup> A disaster is a serious disruption to the functioning of a community or society resulting in a large number of deaths, as well as material, economic and environmental damage and impacts that exceed its capacity to deal with the situation using its own resources. [Sendai Framework for Disaster Risk Reduction 2015-2030. UN, 2015.](#)

<sup>512</sup> [Sendai Framework for Disaster Risk Reduction 2015-2030. UN, 2015.](#)

<sup>513</sup> [The human cost of weather-related disasters 1995-2015. UNISDR, 2015.](#)

<sup>514</sup> [The human cost of weather-related disasters 1995-2015. UNISDR, 2015.](#)

famine, poverty and underdevelopment. Droughts may last for years and cause severe economic damage due to loss of crops and water shortages. A total of 1.1 billion people were affected by drought between 1995 and 2015 (26% of the total number affected by disasters). The numbers are difficult to determine as deaths from famine are recorded as indirect deaths. Such indirect deaths occur after the emergency phase of a disaster is over and are often not counted as deaths from drought.

Between 1995 and 2015, **extreme heat and cold** caused 27% of all deaths attributed to weather-related disasters, although they only accounted for 6% of all disasters. Overall, 92% of deaths from heatwaves were recorded in high-income countries, where they were the cause of 76% of all deaths in disasters. There is possibly some bias due to under-reporting in lower-income countries.

2015 was the hottest year on record, confirming that weather-related disasters top the ranking for disasters worldwide. The most severe was drought, with the annual average doubling over the last ten years, affecting more than 50 million people, most of them in Africa, many of whom continue to be affected in 2016<sup>515</sup>.

## EUROPEAN CONTEXT

The number and impact of disasters increased in Europe in the period 1998-2009<sup>516</sup>, affecting over 11 million people (causing nearly 100,000 deaths) and leading to economic losses of approximately 150 million euros. Sixty-four per cent of natural disasters in Europe were caused by hydrological and meteorological phenomena (storms, floods and landslides) and 20% by climatological phenomena (extreme temperatures, drought and forest fires)<sup>517</sup>.

**Flooding** was the natural risk that caused the greatest amount of economic damage (estimated at 52.173 billion euros, while annual flood losses can be expected to increase fivefold by 2050 and up to 17-fold by 2080. The major share of this increase (70–90%) is estimated to be attributable to socio-economic development as the economic value of the assets on floodplains increases, and the remainder (10–30%) to climate change (EEA 1/2016)<sup>518</sup>.

**Storms**, strong winds accompanied by heavy rain, were the natural risk that resulted in the greatest amount of damage to insured property (20,532 million euros), representing around half of total losses (44,328 million euros) in the period 1998-2009. This type of weather event also affected the greatest number of people (over 3,800), with a much smaller number of fatalities (729).

**Extreme temperatures** caused the greatest number of deaths due to heat waves. In the hot summer of 2003, over 70,000 additional deaths were recorded in Europe. Episodes of high temperatures have occurred more frequently in recent years. 2003, 2006, 2007, 2010 and 2015 were particularly hot.

<sup>515</sup> UNISRD. <http://www.preventionweb.net/news/view/47795>.

<sup>516</sup> [Mapping the impacts of natural hazards and technological accidents in Europe. EEA 13/2010.](#)

<sup>517</sup> [Damages from weather- and climate-related events \(1980-2011\). Indicator CSI 042, CLIM 039 EEA \(modified 09.2015\).](#)

<sup>518</sup> [Flood risks and environmental vulnerability. EEA 1/2016.](#)



Climate change will make such episodes more frequent and severe<sup>519</sup>. Combined with an ageing population, and therefore an increase in the number of vulnerable people, the impact on human health will be significant. Fatalities are estimated to increase by 1 to 4% for every 1°C increase in the temperatures in the comfortable seasons when mortality and morbidity figures are lowest.

Protection plans to combat the effects of heat have been implemented in many countries as a result of the devastating impact of the 2003 heatwave. By mid-century it is predicted that the deaths avoided due to warmer winters will be offset by the increase in summer fatalities<sup>520</sup>.

In Europe there are around 70,000 forest fires each year, 70% of which occur in the Mediterranean area. No significant trend was noted in the period analysed, but a recent study shows that improved prevention and firefighting methods have resulted in fewer fires in the Mediterranean<sup>521</sup>. In 1992 the EU approved regulatory instruments on the prevention of forest fires. As the majority of fires are caused by people, education and training are essential for preventing them. This does not take away from the fact that rising temperatures and more dry periods increase the risk.

Water stress and drought<sup>522</sup> are not just limited to southern Europe, they affect large parts of the continent, as the pressure on water resources increases. Eight droughts were recorded in the EU between 1998 and 2009, causing problems for agriculture, tourism, power generation and the management of water supplies for both domestic and industrial use.

Vector-borne diseases are a biological risk that may be affected by climate change, which could lead to geographical and seasonal changes in Europe<sup>523</sup>. Apart from climate, the spread of communicable diseases depends on a range of interconnected ecological, economic and social factors, such as land use patterns and fragmentation, biological diversity, the capacity of public health systems, travellers, international trade and migration, as well as the human behaviours that affect individual risk factors.

In 2013 the *EU Strategy on adaptation to climate change*<sup>524</sup> was approved, establishing a framework of mechanisms for limiting Europe's vulnerability to the impacts of climate change now and in the future. One of its main principles is to incorporate adaptation to climate change in policies such as the Common Agricultural Policy (CAP). The European strategy led to the creation of the European Climate Adaptation Platform

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<sup>519</sup> Special report on managing the risks of extreme events and disasters to advance climate change adaptation [SREX. \(IPCC, 2012\)](#).

<sup>520</sup> Ballester J, Robine JM, Herrmann FR, Rodó X. 'Long-term projections and acclimatization scenarios of temperature-related mortality in Europe.' *Nat Commun.* 2011 June 21; 2:358.doi:10.1038/ncomms1360.

<sup>521</sup> Turco, M., J. Bedia, F. Di Liberto, P. Fiorucci, J.von Hardenberg, N. Koutsias, M. C. Llasat, F. Xystrakis, A.Provenza, Decreasing Fires in Mediterranean Europe. *PLOS ONE* | DOI:10.1371/journal.pone.0150663.

<sup>522</sup> The terms water stress and drought are both used, as their effects are closely linked and it is difficult to separate the two concepts.

<sup>523</sup> [Vector-borne diseases. Indicator codes: CLIM 037. EEA, 2015.](#)

<sup>524</sup> [http://ec.europa.eu/clima/policies/adaptation/what/documentation\\_en.htm](http://ec.europa.eu/clima/policies/adaptation/what/documentation_en.htm)

(ADAPT)<sup>525</sup>, which contains a section devoted to reducing the risk of disasters, intended to act as a *single window* for the management of risks.

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

This SDG, as noted previously, focuses on the impacts of climate change on natural risks and increasing our resilience to the effects of climate extremes. For a greater understanding of the impact of climate change on human and natural systems in Catalonia, apart from other SDGs in this report, existing reports on climate change in Catalonia may also be consulted<sup>526</sup>.

The average annual air temperature in Catalonia increased by 0.23°C per decade from 1950 to 2014, with average summer temperatures up by 0.33°C per decade. 2015 saw the highest average annual temperatures since 1780 in the city of Barcelona. The number of days considered to be summer in terms of temperature, and the number of warm nights have also increased, as has the temperature of the sea, while the number of cold days and nights, and snowy days, have decreased to a statistically significant degree. The change in average annual rainfall for Catalonia as a whole is not statistically significant<sup>527</sup>.

In 2014 the sea temperature measured at l'Estartit had increased by a statistically significant amount, rising by 0.3°C per decade at up to 50 metres depth, the increase shrinking to 0.19°C per decade at 80 metres. Sea levels at the same point have risen by an average of 3.9 cm a decade since 1990 (2.6 cm and 5.2 cm)<sup>528</sup>.

Climate projections for Catalonia clearly indicate rising temperatures over coming decades, by up to 0.8°C in the current decade and up to 1.4°C by mid-century compared to the average for 1971-2000. The sharpest increases will be in summer and in the Pyrenees. Rainfall projections are more uncertain, but the indications are that rainfall volumes will decline<sup>529</sup>.

These new conditions will affect the frequency and severity of natural risks, although it is not clear to what extent they will be aggravated by climate change and to what extent the current model of socioeconomic development will increase vulnerability, due to an increase in the number of vulnerable people (ageing), the urbanisation of flood-prone areas, or greater demand for water as a result of higher temperatures (aggravating water stress in periods of drought).

<sup>525</sup> <http://climate-adapt.eea.europa.eu/>

<sup>526</sup> [Primer informe](#) sobre el canvi climàtic a Catalunya ([Llebot et al. 2005](#)) i [Segon Informe \(Llebot et al. 2009\)](#). A third report is due to be published in autumn 2016, prepared by over 150 scientists and experts commissioned by the Government of Catalonia and the Institute of Catalan Studies.

<sup>527</sup> Vide, J., Prohom, M., Busto, M. et al. Canvis observats en el clima de Catalunya. Tercer informe sobre el canvi climàtic a Catalunya. Government of Catalonia and Institute of Catalan Studies. Unpublished work expected to be published in September 2016.

<sup>528</sup> *Butlletí Anual d'Indicadors Climàtics (2014)*. Climatology Area. Meteorological Service of Catalonia. Barcelona. Available on-line from: <http://www.meteo.cat/wpweb/climatologia/>

<sup>529</sup> Calbó, J., Gonçalves, M., Barrera, A. et al. Projeccions climàtiques i escenaris de futur. Tercer informe sobre el canvi climàtic a Catalunya. Government of Catalonia and Institute of Catalan Studies. Unpublished work expected to be published in September 2016.

The main challenges for Catalonia with regard to this SDG are therefore detailed below, structured in line with the 2030 Agenda targets.

### 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

In Catalonia, the main risks that could be affected by climate change are extreme temperatures, drought, heavy rains and floods, fires, high winds and waves, and vector-borne diseases. There is still significant uncertainty concerning the potential impact of climate change on other risks that affect Catalonia, such as tornadoes and hailstorms.

**Floods and strong rains:** between 1981 and 2010 there were 219 recorded episodes of flooding, with a total of 110 fatalities in 42 of these episodes<sup>530531</sup>. Flooding also causes significant damage to infrastructures, homes, crops, services and so on, as well as indirect damage which is difficult to fully quantify as there are no specific records. For example, the recent floods affecting the Val d'Aran in June 2013 caused more than 20 million euros worth of direct damage.

CADS report 1/2012<sup>532</sup> points out that in recent years there has been an increase in ordinary and extraordinary flooding<sup>533</sup>, especially on the coast. This increase would appear to be related to changes in land use and reduced soil permeability, greater population density (especially in summer, which is the time of year when most storms occur) and urban pressure.

In addition rising sea levels negatively affect the run-off of accumulated flood waters. Although there is less certainty concerning rainfall than with regard to temperatures, climate scenarios point towards an increase in torrential rains leading to flash floods, leading to human and economic damage in Catalonia, especially in coastal areas.

Catalonia is currently developing its *Flood risk management plan for the Catalan river basin district*, on which the CADS issued report 1/2016<sup>534</sup>. Its recommendations included developing a deeper understanding of the effect of climate change on the risk of flooding, building risk management into legislation such as town planning instruments, and further action on informing the public, raising awareness, increasing our capacity for dealing with these situations and establishing early warning systems.

**Drought and water stress:** the Mediterranean climate is characterised by very irregular rainfall with wide variations between one year and another. The role of snow in

<sup>530</sup> [Informe sobre el Pla de gestió del risc d'inundació. CADS report 1/2016](#)

<sup>531</sup> Llasat, M.C.; Marcos, R.; Llasat-Botija, M.; Gilabert, J.; Turco, M.; Quintana-Segui, P. (2014). Flash flood evolution in North-Western Mediterranean. *Atmospheric Research* 149 (2014) 230–243.

<sup>532</sup> [L'impacte potencial del canvi climàtic en la planificació, prevenció i gestió d'emergències a Catalunya. CADS report 1/2012](#)

<sup>533</sup> Llasat *et al* (2005) distinguishes between ordinary, extraordinary and catastrophic floods on the basis of the damage caused. Ordinary floods are increases in water levels that may destroy temporary riverside infrastructures; extraordinary flooding refers to rivers bursting their banks and causing damage; and catastrophic flooding involves severe damage or the total destruction of one or more infrastructures or buildings.

<sup>534</sup> [http://cads.gencat.cat/web/.content/Documents/Informes/2016/Informe-CADS-1\\_2016.pdf](http://cads.gencat.cat/web/.content/Documents/Informes/2016/Informe-CADS-1_2016.pdf)

stabilising water resources will decrease as there will be less precipitation in the form of snow and it will melt more quickly. Furthermore, the expected increase in temperatures will push up demand, especially from the agricultural sector, which is the sector that uses most water (70-80%). Catalonia is especially vulnerable to water stress and drought, and it has been identified in the Catalan Strategy for Adaptation to Climate Change [ESCACC 2013-2020](#) as the main impact of climate change for Catalonia.

To manage demand for water, Catalonia has reservoirs and the El Prat desalination plant, the largest in Europe dedicated to supplying domestic water, with the capacity to supply 24% of the water consumed in the metropolitan area. The European Environment Agency has recognised this infrastructure as a measure for adapting to climate change<sup>535</sup>. However, this solution involves difficult issues in the balance between water production and energy use, especially in terms of sustainability. Other solutions must be explored, such as better resource management, reuse, etc.[see SDG #6]

Decreasing levels of domestic water consumption are a direct indicator of efficiency in the use of water and effective water saving. Water consumption in Catalonia has declined steadily since 2004 to 119 litres per person per day (106 litres in the Barcelona Metropolitan Area)<sup>536</sup>.

At the date on which this report was issued, the Catalan Water Agency is preparing its drought risk management plan, which must include adaptation to climate change and developing measures to train, raise awareness and inform the public and those responsible for sector planning.

**Forest fires:** the majority of forest fires occurring in Catalonia are caused by negligence or are started intentionally, and prevention and firefighting measures are essential for reducing their impact (such as the forest fires of summer 2012 in the province of Girona).

The risk of forest fires is exacerbated by lack of forestry management together with rising temperatures and droughts. However, in order to separate the influence of climate change from prevention and control plans, a simulation was performed that determined that forest fires are in fact declining, although climate influences should have led to an increase.<sup>537</sup>

This result highlights the importance of prevention and firefighting measures, as an example of an adaptation mechanism. However, worsening climate conditions make it necessary to strengthen these measures. As noted in the *Third Report on Climate Change in Catalonia*<sup>538</sup>, further work is required with regard to the areas affected (mountain wildfires) and times of the year (fires in winter).

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<sup>535</sup> [Adaptation in Europe: Addressing risks and opportunities from climate change in the context of socio-economic developments. EEA 3/2013](#)

<sup>536</sup> [Indicador global d'adaptació als impactes del canvi climàtic a Catalunya. Catalan Office for Climate Change, 2014](#)

<sup>537</sup> Turco M. [et al.], 2014. Climate change impacts on wildfires in a Mediterranean environment. *Climatic Change*, 369-380.

<sup>538</sup> Llasat et al, 2016. Tercer Informe del Canvi Climàtic a Catalunya. To be released September 2016 (unpublished)

**Extreme temperature and heatwaves:** the negative effects of temperature changes on health have long been recorded, and mortality rates are known to increase at times of excessive and sustained heat, especially among old people, babies and sufferers of chronic illnesses.

The people most vulnerable to extreme temperatures are the over-60s and babies, with the first week of life being when babies are most vulnerable to the effects of heat (Basagaña et al., 2011). Vulnerable people also include marginalised sectors of society and sufferers of chronic mental, cardiovascular and respiratory illnesses. Some studies also note that diabetics and women are especially sensitive. Those living in precarious conditions with limited resources also constitute a vulnerable group, as their ability to adapt to such conditions is minimal.

In Catalonia three consecutive days of exceptional heat increase the daily mortality rate by 19%, rising to 35% when the number of days extends to seven. During the heat wave that occurred between 3 and 6 August 2003, maximum temperatures averaged 35°C and the number of deaths was 53% higher than the previous year<sup>539</sup>. During that summer (June, July and August), in the city of Barcelona a total of 665 deaths due to heat were recorded<sup>540</sup>.

Forty per cent of deaths attributed to extreme heat do not occur in periods considered to be heat waves<sup>541</sup>. The impact of heat waves is more serious in urban areas, as a result of the Urban Heat Island effect. In the city of Barcelona the number of deaths increases considerably when temperatures go above a 30.5°C threshold.

**High winds and waves** pose an appreciable risk in Catalonia, due to their effects on the coast and the fishing and tourism sectors, and the damage caused to infrastructures and forests. For example, in the last episode from 9 to 11 December 2014, three people died, over 1,200 hectares of forest were severely damaged in El Vallès and 47,000 customers suffered power cuts. The municipalities in the El Vallès Occidental area alone applied for aid totalling 13 million euros, and Barcelona Provincial Council paid out 3 million euros to 28 municipalities affected by the winds.

The damage caused by the high winds generated by cyclone Klaus on 24 January 2009 was even more severe. Eight people lost their lives, 20,000 hectares of forest were damaged and the power network was severely affected (Endesa suffered losses of 21.86 million euros, a figure that was updated in 2013). In total, the state insurer, the Consorcio de Compensación de Seguros (CSS), paid out the equivalent of 547 million euros (2013) in compensation for the damage caused by the cyclone in Spain<sup>542</sup>.

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<sup>539</sup> *Pla d'actuació per a prevenir els efectes de les onades de calor sobre la salut (Action plan to prevent the effects of heatwaves on health) (POCS 2010). Ministry of Health*

<sup>540</sup> [Aurelio Tobías et al. Short-term effects of extreme hot summer temperatures on total daily mortality in Barcelona, Spain](#), 2010.

<sup>541</sup> Basagaña, Xavier et al. 'Heat Waves and cause specific mortality at all ages'. *Epidemiology*. Volume 22, number 6, November 2011. DOI: 10.1097/EDE.0b013e31823031c5.

<sup>542</sup> Llasat, M.C., J. Gilabert, M. Llasat-Botija, M. Cortès, 2015, Estudi de temporals de vent i nevades extraordinàries a Catalunya 1900-2015, Report DAM/250904-30/1511. Project to Document Historic Emergencies. Protecció Civil.

As noted by the IPCC, a key issue with regard to these risks is the unpredictability of scenarios involving wind and the lack of robust evidence, given the short-term and inconsistent nature of existing records. Climate change is likely to result in more severe sea storms hitting the Catalan coast from the south, with serious consequences for beaches and ports. The impacts of rising sea levels include increased coastal erosion, poorer coastal water quality, and increased saline intrusion, all areas of concern for Catalonia<sup>543</sup>.

**Vector-borne diseases:** the tiger mosquito, regarded as one of the indicators of climate change sensitive vector-borne diseases, was detected in Catalonia for the first time in 2004<sup>544</sup>. To coordinate prevention and control measures, in 2010 the Inter-institutional Commission for the Prevention and Control of the Tiger Mosquito in Catalonia was set up, whose members included various public bodies involved in this issue, and in 2011 a Strategy on the prevention and control of the tiger mosquito<sup>545</sup> was drawn up, containing a review of the situation, forecasts and prevention and control measures.

To improve **responses to emergencies and severe risks**, Catalonia's Civil Defence Plans<sup>546</sup> serve as planning tools mapping the operation and organisation of human and material resources. Civil defence plans include regional plans (general planning for emergencies in Catalonia), special plans (specific risks) and self-protection plans for specific companies, centres and facilities.

The general civil defence plan for Catalonia, PROCICAT, covers a range of risks including drought, heatwaves, freezing weather and severe disruptions to public services. PROCICAT is complemented by special emergency plans for specific risks such as INUNCAT for floods, INFOCAT for forest fires, ALLAUCAT for avalanches and NEUCAT for snow.

The Operations Coordination Centre for Catalonia (CECAT) is responsible for managing and coordinating the plans. According to this body<sup>547</sup>, in 2014 emergency plans were activated on 45 occasions, many fewer than the 66, 68 and 69 activations in 2011, 2012 and 2013 respectively. INUNCAT was the most frequently activated plan in 2014 (17 times) and 2013 (20), followed by PROCICAT for high winds, while in 2012 INFOCAT was activated practically the same number of times as INUNCAT.

PROCICAT for heatwaves was activated once in 2011 and 3 times in 2012, a year in which it was active for one in every three days during the main summer months (June, July, August)<sup>548</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

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<sup>543</sup> Sánchez-Arcilla et al, 2010. La variabilitat climàtica i la costa catalana. Segon informe sobre el canvi climàtic a Catalunya (Llebot et al, 2010). Institute of Catalan Studies and Government of Catalonia, Barcelona.

<sup>544</sup> [Vector-borne diseases. Indicator codes: CLIM 037. EEA, 2015](#)

<sup>545</sup> [Estratègia per a la prevenció i el control del mosquit tigre a Catalunya](#). Public Health Agency.

<sup>546</sup> [Catalan Civil Protection Plan. Catalonia Ministry of Home Affairs](#).

<sup>547</sup> [Memòria gràfica 2014. Operativa de Protecció Civil](#). Catalonia Ministry of Home Affairs.

<sup>548</sup> [Memòria 2012. Operativa de protecció civil](#). Catalonia Ministry of Home Affairs.



- ❖ Improve the collection of data on the losses and damaged caused by disasters and the management of emergencies from prediction to recovery.
- ❖ Keep records of significant events in order to improve understanding of risks and how to prevent and mitigate their effects among the general public and the public and private sectors.
- ❖ Implement the systematic analysis of and systems for managing the risk of serial failure in basic services (transport, energy supplies, telecommunications, water supplies, healthcare, etc). [see SDG #11 on cities].
- ❖ Protect open spaces and landscapes, based on supramunicipal planning and regulation principles, especially for peri-urban land, with a particular focus on green infrastructures and the ecosystem services they provide, taking into account risk zoning [see SDG #11 on cities and SDG #15 on biodiversity].
- ❖ Foster non-structural measures, i.e. soft adaptation initiatives such as nature-based measures, restricting construction in risk areas, restoring river areas, etc., rather than hard, or structural measures.
- ❖ Include adaptation to climate change in planning and develop measures to train, raise awareness and inform the public and those responsible for sector planning.
- ❖ Gain a deeper understanding of the effect of climate change on risks, and build risk management into instruments such as town planning.

### **13.2 Integrate climate change measures into national policies, strategies and planning.**

The Government of Catalonia, through the Interdepartmental Commission for Climate Change and the Catalan Office for Climate Change, has developed a planning framework on mitigating and adapting to climate change. This includes the Framework Plan for Climate Change Mitigation in Catalonia 2008-2012, the 2012-2020 Catalan Energy and Climate Change Plan (PECACC) and the 2013-2020 Catalan Strategy for Adaptation to Climate Change (ESCACC). Climate change has also been incorporated into environmental assessments for town planning purposes, as required by *Law 6/2009, of 28 April, on environmental assessment of plans and programmes*.

On 26 January 2016 the Government passed a bill on climate change which is currently before the parliament. It sets climate change mitigation and adaptation targets which form the basis for a sustainable, innovative and competitive model of sustainable economic development that will create wealth and jobs. The bill establishes two key targets: to reduce greenhouse gas emissions by 25% by 2020 compared to 2005, and reduce them by 80% or more by 2050.

In 1998 the Government created the Advisory Council for the Sustainable Development of Catalonia (CADS) to advise it on policies and measures related to sustainable development and, in particular, the integration of sustainability principles into policies, regional and sector planning instruments, draft legislation and regulations and in the Governments strategic projects and initiatives.



In 2004 the CADS' role was expanded to include analysing and formulating proposals with regard to the Government's strategic policies on sustainable development, specifically highlighting climate change<sup>549</sup>.

To promote research and increase understanding, the Government of Catalonia and the Institute of Catalan Studies have published three reports on climate change in Catalonia since 2005, studying the climate in Catalonia and recent and future trends from a scientific perspective, together with the effects of natural and human systems on climate change and vice versa.

At local level, Catalonia participates actively in initiatives on climate change mitigation (Compact of Mayors, with 600 affiliated municipalities), adaptation to it (Covenant of Mayors Initiative on Climate Change Adaptation) and the new Global Covenant of Mayors for Climate and Energy, which brings the two previous agreements together under a single initiative in order to develop synergies between mitigation and adaptation, with a new international dimension.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Make Catalan society and its economy more resilient to climate change, systematically identifying the main impacts of climate change and adapting planning and programming (in line with the principles established in the Catalan Strategy for Adaptation to Climate Change).
- ❖ Adapt regional, transport and territorial planning to reflect current GHG emissions reductions targets to ensure they are achieved in Catalonia, thereby reducing our contribution to climate change.
- ❖ Foster the implementation of flexible, robust measures that will continue to be effective in different future scenarios, ideally win-win measures that bring about other benefits in addition to those directly attributable to adaptation and mitigation (e.g. transport regulations to reduce GHG emissions also help improve air quality).
- ❖ To support public research into climate change trends in Catalonia and its current and future effects, building the results into decision-making processes on public policies and planning.

### **13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

The Government of Catalonia and various local authorities have been developing educational programmes on sustainability for over 10 years. Education for sustainability is built into the entire curriculum in public, grant-maintained and private schools and at every stage of schooling in Catalonia.

The Green Schools Programme, run jointly by the Catalonia Ministry of Territory and Sustainability and the Ministry of Education, supports schools that want to develop,

<sup>549</sup> Decree 41/2014, of 1 April.

incorporate, advance, systematise and organise educational activities to deal with the new challenges and values of sustainability.

A Schools Network for Sustainability (XESC) was created in 2009, incorporating the Green Schools Network and local networks that develop educational programmes for sustainability. Over 1,200 schools currently belong to this network, ranging from nursery schools to voluntary secondary and vocational training centres, representing around 25% of all schools.

With regard to higher education, most universities have sustainability managers and have developed sustainability plans to one degree or another. The EDUSOST initiative covering a range of universities is not currently operational.

Climate change and education on natural risks to improve responses to early warnings are not directly incorporated on educational curricula. Whether this subject is tackled or not is left to teachers' discretion and is usually covered within the environmental sciences.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Include content on climate change and mitigating and adapting to it, and understanding of the main natural risks, in educational curricula.
- ❖ Provide specialised education to improve public understanding.
- ❖ Take further measures to inform the public, raise awareness, increase our capacity for dealing with these situations and establish early warning systems.

### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 13

The CADS considers that the main challenges facing Catalonia with respect to SDG 13 are to:

- ❖ Fully integrate climate change (mitigation and adaptation) into public policy and the activities of the private sector.
- ❖ Build risk management into legislative instruments and private activities, with a particular focus on cascading it down to basic services such as transport, power supply, telecommunications, water supply, sanitation, etc]. [see SDG #11 on cities].
- ❖ Take further measures to inform the public, raise awareness, increase our capacity for dealing with these situations and establish early warning systems.
- ❖ Foster green non-structural measures and infrastructures, such as nature-based solutions that take advantage of ecosystem services.
- ❖ Foster win-win measures that bring about other benefits in addition to those directly attributable to adaptation and mitigation, such as traffic reduction measures to mitigate climate change and improve air quality.
- ❖ Promote flexible measures that will continue to be effective in different future scenarios and whose net costs are low because they generate additional, non-climate change-related benefits (no regrets options).



- ❖ Support public research into climate change trends and include the results in decision-making processes on public policies and planning.
- ❖ Improve the public's understanding of climate change and its potential impacts in order to encourage the adoption of practices that reduce GHG emissions and help the population to be more resilient.

## 14 CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

### UNITED NATIONS 2030 AGENDA GOALS

- 14.1** By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.
- 14.2** By 2020, sustainably manage and protect marine and Coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.
- 14.3** Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.
- 14.4** By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.
- 14.5** By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.
- 14.6** By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.<sup>550</sup>
- 14.7** By 2030, increase the economic benefits to Small Island Developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

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<sup>550</sup> Taking into account the ongoing WTO negotiations, the Doha Development Agenda and the mandate of the Hong Kong Ministerial Declaration.

## INTERNATIONAL CONTEXT

The oceans cover three quarters of the Earth's surface and contain 97% of the planet's water. According to the United Nations<sup>551</sup>, more than three million people depend on marine and coastal biodiversity for their subsistence. However, it is calculated that the impact of human activity on the oceans (such as pollution, the depletion of fish stocks and the loss of coastal habitats) is present everywhere<sup>552</sup> and up to 40% of oceans are seriously affected.

The pollution of seas and oceans, mainly from land based and maritime activity, is reaching alarming levels in both coastal and deep sea areas. In regard to solid waste, plastics are the most common type: according to the United Nations 13,000 pieces of plastic can be found in each square kilometre of ocean<sup>553</sup>. Pollution has a negative effect on both marine ecosystems and human activity (tourism, fishing). In recent years serious concern has been expressed about microplastics. It has been shown that they become part of the food chain and thus have effects on living organisms and potentially on human health.

The oceans also have a very important role in the carbon cycle, as it is calculated that they absorb 30% of CO<sub>2</sub> emissions. This fact is causing progressive acidification of the oceans, levels having increased by 26% since the start of the industrial revolution. The last Paris climate summit (COP21) recognised the role of the oceans and the need to conserve the functions of marine ecosystems to help mitigate climate change<sup>554</sup>.

According to the United Nations Food and Agriculture Organisation, world production of fishery products in 2015 was 168.6 million tonnes, of which 90.6 million came from extractive fishing and 78 million from aquaculture. The market value of marine and coastal resources is calculated to be 3 billion dollars (about 5% of global GDP). Fishing is also an important source of employment: 200 million people work directly or indirectly in the sector worldwide.

However, according to the FAO<sup>555</sup>, 30% of the world's fisheries are overexploited and only 10% are exploited below their maximum capacity. Around 60% of fisheries are fully exploited and there is thus no margin for increasing captures if effective management plans are not put in place.

One of the targets of the Convention on Biological Diversity (CBD), the Aichi targets [see [SDG #15](#)], establishes the goal of protecting 10% of the world's marine and coastal areas. It should be pointed out that the target refers not only to territorial waters but also

<sup>551</sup> Figures from: <http://www.un.org/sustainabledevelopment/oceans/>;

<sup>552</sup> HALPERN, B.S., FRAZIER, M., POTAPENKO, J., CASEY, K.S., KOENIG, K., LONGO, C., LOWNDES, J.S., ROCKWOOD, R.C., SELIG, E.R., SELKOE, K.A., WALBRIDGE, S. (2015) *Spatial and temporal changes in cumulative human impacts on the world's ocean*. Nature Communications 6:7615. DOI:10.1038/ncomms8615.

<sup>553</sup> <http://www.undp.org/content/undp/en/home/sdgooverview/post-2015-development-agenda/goal-14.html>

<sup>554</sup> The IPCC has agreed to draft a report on climate change and oceans (<http://www.iisd.ca/climate/ipcc43/>)

<sup>555</sup> FAO. 2014. *The State of World Fisheries and Aquaculture*. <http://www.fao.org/3/a-i3720e.pdf>

to international waters, for which coastal nations need to assume joint responsibility. The CBD envisages the designation of marine areas of ecological or biological importance, referred to as Ecologically or Biologically Significant Marine Areas (EBSA)<sup>556</sup>.

Although initially the EBSA process was designed to focus only on identifying areas of ecological or biological importance in the open seas and deep water habitats in areas outside territorial waters (as these are the least protected), in practice EBSA areas have been identified inside and outside national jurisdictions.

Finally, we should mention that within the United Nations work is in progress to draw up a legal instrument to improve conservation and the sustainable use of marine biodiversity in oceans outside national jurisdictions<sup>557</sup>.

## THE EUROPEAN AND MEDITERRANEAN CONTEXT

In 2015 the European Environment Agency published a report entitled *State of Europe's Seas*<sup>558</sup>, which asks whether European seas are *healthy, clean, undisturbed, and productive*. The report concludes that although European seas are productive, their state cannot be considered good.

Many economic activities are based on the seas, including fishing, aquaculture, the extraction or mining of minerals, transport, tourism and infrastructures. Fishing alone generates GVA of 3,400 million euros in the EU and over 127,000 jobs.

The pressures affecting seas and oceans in Europe are many. Examples include damage to the sea bed, overexploitation of fish stocks, the introduction of alien species and pollution from land and the air.

The presence of solid waste in the sea (known as marine litter) is receiving considerable attention in the European Union. The circular economy package<sup>559</sup> refers explicitly to the SDG and restates the 2020 target of a 30% reduction in the 10 main types of waste found on beaches and in the remains of materials used for fishing.

Regarding the protection of marine areas, according to the European Environment Agency, in 2012 protected marine areas in Europe accounted for 5.9% of Europe's seas, far short of the 10% established as a world target, and this percentage is considerably smaller if we refer to fully protected (non-take) areas, from which no marine product can be extracted.

In 2007 the European Union launched its Integrated Maritime Policy<sup>560</sup>, which aims at greater coordination between the different policies that affect the sea. The environmental aspect of the integrated maritime policy is set out in the Marine Strategy

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<sup>556</sup> <https://www.cbd.int/ebsa/>

<sup>557</sup> Within the framework of the United Nations Convention on the Law of the Sea. <http://www.un.org/depts/los/biodiversity/prepcom.htm>

<sup>558</sup> European Environment Agency (2015). [\*State of Europe's seas\*](#). EEA Report No 2/2015. Luxembourg: Publications Office of the European Union.

<sup>559</sup> 'Aspirational' goal of the 2014 circular economy package, referred to in the December 2015 Communication '*Closing the loop – An EU action plan for the Circular Economy*'.

<sup>560</sup> [http://ec.europa.eu/maritimeaffairs/policy/index\\_en.htm](http://ec.europa.eu/maritimeaffairs/policy/index_en.htm)

Framework Directive (2008/56/EC). Its aim is 'achieving or maintaining good environmental status in the Community's marine environment' to 2020 and it is implemented via strategies that individual states must draw up<sup>561</sup>.

One of the principles of Directive 2008/56 (and also of the Common Fisheries Policy) is the ecosystem-based management approach. According to the European Environment Agency definition (2015) ecosystem-based management is *an integrated approach to management that considers the entire ecosystem, including humans. The goal is to maintain ecosystems in a healthy, clean, productive and resilient condition, so that they can provide humans with the services and benefits they depend on*.

A generalised problem in applying the Directive is the lack of data regarding the marine environment. For example, 80% of the assessments of species and habitats carried out within the framework of the Directive in 2012 indicate that there is insufficient data<sup>562</sup>.

If we focus on the Mediterranean, the basic framework is the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, signed in 1976 and amended in 1995<sup>563</sup>. The Barcelona Convention involves 21 states, including Spain, and the European Union and incorporates seven protocols<sup>564</sup>, five of which focus on preventing and reducing pollution from different sources (ships and planes, activities on land, off-shore operations, preventing and dealing with emergencies, and the transport of hazardous substances). The other two protocols refer to biodiversity and the integrated management of coastal areas.

The Mediterranean is one of the seas with the highest levels of biodiversity in the world (it only occupies 1% of the total area of sea but is home to nearly 20% of marine biodiversity). It has a heavily urbanised coast, high levels of tourism and maritime navigation, and has for some time now been suffering problems of over-fishing and pollution. Climate change is an additional pressure, leading to acidification and rising sea levels and temperatures, which modify the composition of the species in marine ecosystems.

The *Protocol on Specially Protected Areas and Biodiversity in the Mediterranean*, in force since 1999, establishes measures for the protection and management of biodiversity and creates a list of Specially Protected Areas of Importance for the Mediterranean<sup>565</sup>, of which only one, the Pelagos Sanctuary in the Ligurian Sea, is outside waters subject to the jurisdiction of a single country<sup>566</sup>.

Protected marine areas occupy a total of 4.6% of the Mediterranean (1.1% if we exclude the Pelagos sanctuary). Less than 0.1% of the total area corresponds to no-take zones

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<sup>561</sup> The sea off the Catalan coast is included in the Marine Strategy for the Levantine-Balearic Demarcation: <http://www.magrama.gob.es/es/costas/temas/proteccion-medio-marino/estrategias-marinas/demarcacion-levantino-balear/default.aspx>

<sup>562</sup> European Environment Agency (2015). *Ibid*.

<sup>563</sup> <http://www.unepmap.org/index.php>; <http://eur-lex.europa.eu/legal-content/ES/TXT/?uri=URISERV:l28084>

<sup>564</sup> <http://www.unepmap.org/index.php?module=content2&catid=001001001>

<sup>565</sup> <http://www.rac-spa.org/spami>

<sup>566</sup> SPAMI created under an agreement between France, Italy and Monaco to protect cetaceans. <http://www.sanctuaire-pelagos.org/>



where protection is stricter. This data does not include the five restricted fishing areas created by the General Fisheries Commission for the Mediterranean (GFCM), which comprise 0.7% of the Mediterranean.<sup>567</sup>

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are therefore detailed below, structured in line with the 2030 Agenda targets.

It must be borne in mind that powers related to marine matters are mostly held by the Spanish government and it is therefore difficult to deal with Catalonia as a separate case. The Government of Catalonia only has powers regarding some aspects of coastal areas.

### **14.1** By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

The main sources of marine pollution are the disposal of urban and industrial wastewater and solid waste from land transported by rivers, and from ships. As mentioned above, within the framework of the Barcelona Convention five protocols were approved to prevent and reduce pollution in the Mediterranean Sea (referring to dumping by ships and aircraft, land-based sources, off-shore exploration and exploitation, emergency situations, and the transport of hazardous waste). However, the Mediterranean continues to be one of the world's most heavily polluted seas.

The Framework Directive on Marine Strategy measures good environmental status on the basis of eleven descriptors, four of which refer to pollution of the marine environment: eutrophication, pollution and its effects, pollutants in fishery products, and marine waste (including microplastics).

Target 14.1 focuses on pollution caused by an excess of nutrients and solid waste. Regarding the first of these, it should be remembered that the Mediterranean is oligotrophic (relatively poor in nutrients) and is negatively affected by reductions in the amount of water and nutrients flowing into it from rivers, which have a fertilising effect on coastal ecosystems and fish stocks. The movement of nutrients from land to sea has a positive fertilising effect but this should not be confused with the organic pollution from wastewater in coastal areas, which can have negative effects locally.

Aquaculture is one of the sources of contamination by organic matter that can have local impacts. In Catalonia this is a significant issue in the Ebro delta, where there is a concentration of centres producing molluscs and other marine invertebrates.

Only half of Catalonia's coastal water masses are in a good state according to Water Framework Directive criteria<sup>568</sup>. The 15 areas whose state is considered bad are mainly

<sup>567</sup> Figures from 2012 report by MedPan: Gabrié C., Lagabrielle E., Bissery C., Crochelet E., Meola B., Webster C., Claudet J., Chassanite A., Marinesque S., Robert P., Goutx M., Quod C. 2012. The Status of Marine Protected Areas in the Mediterranean Sea. MedPAN & RAC/SPA. Ed: MedPAN Collection. 256 pp. ([www.medpan.org](http://www.medpan.org)) An updated report will be published in 2016.

located off the shore of the Metropolitan Region of Barcelona and the bay of Tarragona, the most heavily urbanised areas where there is most industrial activity. It should be pointed out that the Catalan River Basin District Management Plan does not contain data for the Port of Barcelona or the Port of Tarragona, into which industrial waste from various sources is discharged. As these are probably the areas where there is most pollution from hydrocarbons and priority substances, it would be useful to monitor pollution there and publish the results.

Other potential sources of pollution include saline waste from desalination plants and mining.

In all the grid sectors of the Levantine-Balearic marine demarcation sampled between 2006 and 2010 solid waste was detected in at least one of the years<sup>569</sup>, with higher concentrations in the Barcelona area. The most frequently found material is plastic, followed by wood, glass and ceramics. Studies show that sea turtles, cetaceans, sea birds and many types of fish regularly swallow plastics, which can lead to digestive problems and even death.

There are also impacts because these creatures may be trapped by marine waste. Waste is found at all depths but tends to accumulate in deep areas such as submarine canyons. In the Mediterranean waste is found to depths of 2,000 and 3,000 metres, where it does not degrade easily<sup>570</sup>.

The quality of the water off our beaches is normally excellent for bathing<sup>571</sup> but the presence of waste is significant, especially in the Barcelona area. It consists predominantly of plastic objects related to household tasks and games.

Discharges from combined sewer systems in periods of heavy rain (i.e. drainage systems that cannot cope with the volume of water and discharge untreated waste into the sea)<sup>572</sup> are one of the main ways in which solid waste enters the sea.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Reduce the pollutants entering the sea from rivers and ocean outfalls by improving the treatment of urban and industrial wastewater and to prevent discharges from combined systems [see SDG #6.3 on sanitation].

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<sup>568</sup> From Portbou to Begur-Blanes excluding Roses-Castelló d'Empúries, Pineda de Mar-Mataró, Tarragona Nord, Cap de Salou, Vandellós and l'Hospitalet de l'Infant, and the three bodies of water forming the Ebro delta (Catalan river basin district management plan 2016-2021 [http://aca-web.gencat.cat/aca/documents/Pla\\_de\\_gestio/2n\\_cicle/PdG/ca/03\\_pdg2\\_plagestio\\_dcfc.pdf](http://aca-web.gencat.cat/aca/documents/Pla_de_gestio/2n_cicle/PdG/ca/03_pdg2_plagestio_dcfc.pdf)). The Ebro Delta water bodies are included in the Catalan river basin district management plan.

<sup>569</sup> MAGRAMA figures (2012) on the Catalan river basin district management plan: *Parte IV. Descriptores del buen estado ambiental. Descriptor 10: Basuras marinas. Evaluación inicial y buen estado ambiental.* [http://www.magrama.gob.es/es/costas/temas/proteccion-medio-marino/IV\\_D10\\_Levantino-Balear\\_tcm7-207253.pdf](http://www.magrama.gob.es/es/costas/temas/proteccion-medio-marino/IV_D10_Levantino-Balear_tcm7-207253.pdf)

<sup>570</sup> RAMÍREZ-LLODRA, E., DE MOL, B., COMPANY, J.B., COLL, M., SARDA, F. (2013) *Effects of natural and anthropogenic processes in the distribution of marine litter in the deep Mediterranean Sea.* Progress in Oceanography 118, 273–287.

<sup>571</sup> 94% in 2015 season, per ACA figures.

<sup>572</sup> [Sòlids flotants a les platges del litoral de Catalunya, Avaluació de la problemàtica.](#) Ministry of Territory and Sustainability, 2014.

- ❖ Monitor and reduce water pollution in the ports of Barcelona and Tarragona, and make information about water quality available to the public.
- ❖ Reduce the volume of waste generated, by fiscal measures or systems to facilitate recovery and recycling, such as return and reuse schemes, and limitations to the use of plastic bags [see SDG #12.5 on waste].

**14.2** By 2020, sustainably manage and protect marine and Coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.

The approach and timeline of the SDG (the protection and sustainable management of all marine and coastal ecosystems to 2020) is consistent with the Marine Strategy Framework Directive (MSFD), which stipulates that member states must adopt the measures necessary to achieve or maintain good conditions in the marine environment no later than 2020. As has already been mentioned, the Directive is implemented via marine strategies that have to be applied in each demarcation.

In the case of Catalonia the instrument that should ensure the protection of marine ecosystems is the Marine Strategy for the Levantine-Balearic Demarcation, drawn up by the Ministry of Agriculture, Food and Environment<sup>573</sup>. The initial assessment has been made, a report on good environmental status has been drawn up, environmental goals have been identified and monitoring programmes have been designed. The programme of measures to achieve the targets is still pending. It should not be forgotten that the Directive sets the deadline for achieving good status at 2020, only four years from now.

The main problems affecting the marine environment involve over-fishing, pollution, the degradation of habitats, and the impact of climate change – issues that are dealt with in connection with other targets in this report. Other aspects that need to be considered are the presence of alien species<sup>574</sup>, the possible impact of oil prospecting and the potential introduction of offshore wind farms.

Fifty-nine per cent of the Catalan coast is urbanised, either in compact nuclei (towns and cities) or scattered building<sup>575</sup>. In 2005 and 2006 the Government of Catalonia approved coastal development master plans to preserve areas where no development is permitted

<sup>573</sup> [Marine Strategy for the Levantine-Balearic Demarcation](#). Ministry of Agriculture, Food and the Environment

<sup>574</sup> The 2013 report on the 'EXOCAT' project identified 43 exotic marine species, of which two species of microalgae are considered to be invasive: *Asparagopsis armata* i *Caulerpa racemosa* var. *Cylindracea*. Source: ANDREU, J, AND PINO, J. (2013) *El Projecte Exocat. Informe 2013*. Centre for Ecological Research and Forestry Applications (CREAF) Ministry of Agriculture, Livestock, Fisheries and Food. Government of Catalonia.

<sup>575</sup> This percentage rises to 81% if one excludes the length of the Ebro Delta, from Sant Carles de la Ràpita to L'Ampolla (112 km), and the Cap de Creus coast from Cala Montjoi de Roses to Cala Tamariu in Port de la Selva (50 km). ([http://territori.gencat.cat/ca/06\\_territori\\_i\\_urbanisme/costes\\_i\\_muntanya/la\\_costa\\_catalana/la\\_costa\\_catalana/](http://territori.gencat.cat/ca/06_territori_i_urbanisme/costes_i_muntanya/la_costa_catalana/la_costa_catalana/))

and in a 500 metre undemarcated coastal strip, but there are still sectors where plans for development are being prepared<sup>576</sup>.

The progressive increase in artificial elements on the Catalan coast has modified the dynamics of the shoreline and the processes by which sediment is transported to create and maintain beaches, so that the artificial regeneration of many beaches has become necessary. Some of the techniques used to do this, such as dredging, have serious impacts on the sea bed, including the destruction of meadows of Neptune grass. Significant processes of erosion and regression have occurred in the Tordera and Ebro deltas, caused by factors which include a decrease in the amount of sediment washed down by rivers because of reduced flow and the presence of reservoirs upstream.

Among coastal ecosystems, the fields or meadows of seagrasses, especially *Posidonia oceanica*<sup>577</sup>, which have been protected in Catalonia since 1991, are of special ecological importance.

Climate change has important effects on marine and coastal ecosystems and these are already being seen, as described in [Target #14.3](#).

It must also be pointed out that the cumulative interactions and effects described in the previous points have led to a situation in which marine and coastal ecosystems are seriously degraded, so that improvement calls for a change in the way the marine and coastal environment is viewed and managed, with proper recognition of their values and fragility.

The indicator proposed by the United Nations is the proportion of the area of the exclusive economic zone that is managed using ecosystem-based approaches. This concept is reflected in the Barcelona Convention, in particular the *Protocol on integrated management of coastal areas*, which establishes a common framework for managing coasts in the Mediterranean<sup>578</sup> which has been ratified by both Spain and the EU. It is also referred to in the Framework Directive for Marine Strategy, which establishes the need for an ecosystem-based approach to the management of activities. However, the practical application of this principle is still at an early stage and currently in Catalonia no marine or coastal areas are managed in line with this approach.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Improve the extent to which marine and coastal natural spaces are protected, incorporating all existing European and international legislation (Marine Strategy Framework Directive, Regional Planning Directive for Maritime Areas, Barcelona Convention Protocols for Integrated Management of Coastal Areas and Biodiversity, and the objectives of the Convention on Biological Diversity marine and coastal programme).

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<sup>576</sup> Romagosa, F. (ed) (2016) *La governança i la gestió integrada del litoral a Catalunya. Reptes tècnics i normatius*. Bellaterra: Interface Research Group, Department of Geography, Autonomous University of Barcelona. *Minutes of the Conference held on 4 December 2015*.

<sup>577</sup> The Government of Catalonia has up-to-date maps of seagrass meadows [http://agricultura.gencat.cat/ca/ambits/pesca/dar\\_proteccio\\_recursos\\_litoral/dar\\_fanerogames\\_marines\\_mediterrani/delimitacio-praderies-marines/](http://agricultura.gencat.cat/ca/ambits/pesca/dar_proteccio_recursos_litoral/dar_fanerogames_marines_mediterrani/delimitacio-praderies-marines/)

<sup>578</sup> In force since March 2011. <http://www.unepmap.org/index.php?module=content2&catid=001001001>

- ❖ Integrate management based on ecosystem services in regulations and planning for marine and coastal areas.
- ❖ Raise awareness in the tourism sector and involve it in the sustainable management of coastal areas as envisaged in the 2013-2016 Catalan Strategic Plan for Tourism and the 2013-2020 Catalan Strategy for Adaptation to Climate Change.

#### **14.3** Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.

The effects of [warming and acidification](#) in the Mediterranean were studied in the project Mediterranean Sea Acidification in a changing climate (MedSeA)<sup>579</sup>, completed in 2014. The study concludes that the acidity of water has increased by 10% since 1995, and will rise by a further 30% by 2050 if CO<sub>2</sub> emissions continue at current levels. In a few decades acidity levels in the Mediterranean Sea will probably have increased by 60% since the beginning of the industrial revolution and by the end of the century the increase could have reached 150%.

With regard to the consequences of acidification, the study concludes that the warming and acidification of the oceans have serious effects on marine species and ecosystems such as coral reefs, sea snails, red coral and seagrass meadows. This affects tourism, fishing and aquaculture all the way along the coast.

The study also points out that the acidification of the Mediterranean may be more severe in areas where human activities such as the run-off of nutrients from agriculture contribute to it.

As well as acidification, as already mentioned, climate change has other important effects on the Mediterranean, such as rising temperature, changes in the dynamics of sea currents, rising sea levels, etc. A recent MAGRAMA<sup>580</sup> study identifies the effects. These may be physical and chemical (temperature of sea water, pH, stratification, outcrops, wave intensity) or biological (reduction in primary production associated with increased stratification in the water column, changes in plankton which reduce the sea's ability to absorb CO<sub>2</sub>, episodes of massive fatalities due to warming, changes in the distribution of species, effects on reproduction, growth, and survival in the early stages of life, etc). It should also be added that there are complex interactions and synergies between different effects and disturbances. The changes identified generally involve a reduction in biodiversity.

On a worldwide scale it is interesting to note that the IPCC has agreed to draw up a report on climate change and the oceans as a contribution to negotiations on the United Nations Convention on Climate Change.

The main challenges facing Catalonia with regard to this Agenda target are to:

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<sup>579</sup> The main results are summarised in the document [10 Fets sobre l'acidificació oceànica i l'esclafament al mar Mediterrani](#). MedSeA 2014.

<sup>580</sup> [http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/plan-nacional-adaptacion-cambio-climatico/Pesca\\_Ecosistemas\\_Marinos.aspx](http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/plan-nacional-adaptacion-cambio-climatico/Pesca_Ecosistemas_Marinos.aspx)

- ❖ Reduce man-made sources of sea acidification (such as nutrients from agriculture).
- ❖ Foster research into the effects of global and climate change on the sea and incorporate the results into marine and coastal planning and programmes.
- ❖ Increase the resilience of maritime activity to sea acidification and its effects (especially on fishing).

**14.4** By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.

In 2015 there were 837 fishing vessels registered in Catalonia<sup>581</sup> (514 fewer than ten years earlier). Catches totalled 27,500 tonnes, generating slightly over 100 million euros. These figures are 10% lower than those for 2014. In the 1980s and early 1990s catches were double the current levels but earnings were much lower, rising to a peak in 2007.

Powers regarding fishing are shared between the EU and members states but the EU has a very important role, as the conservation of marine biological resources is one of the six areas for which the EU is exclusively responsible<sup>582</sup>. The basic regulatory instrument is the Common Fisheries Policy, the latest revision of which came into force in 2014. In the Mediterranean context the General Fisheries Commission for the Mediterranean (GFCM)<sup>583</sup> is an organisation reporting to the FAO that promotes the rational development, conservation and management of marine resources in the Mediterranean.

The main aim of fishery management within the Common Fisheries Policy is to achieve 'maximum sustainable yield' (MSY), extracting the maximum amount of fish that can be maintained over time without reducing stocks. This level should be attained by 2015 if possible, or 2020 at the latest.

In the Mediterranean fishery management is usually conducted by regulating fishing effort, i.e. regulating the maximum power allowed for fishing vessels or the number of days on which fishing is allowed. There are also regulations governing the techniques used (size of nets, etc.). Only in a few cases, such as red tuna, are there prior limitations to the amount of fish that can be taken, quotas established by the International Commission for the Conservation of Atlantic Tunas<sup>584</sup>.

Currently 96% of the European fishery stocks studied in the Mediterranean are considered to be over-exploited<sup>585</sup>. Among the species known to be over-exploited are

<sup>581</sup> [http://agricultura.gencat.cat/ca/ambits/pesca/dar\\_flota\\_pesquera/dar\\_estadistiques/dar\\_situacio\\_flota\\_pesquera/](http://agricultura.gencat.cat/ca/ambits/pesca/dar_flota_pesquera/dar_estadistiques/dar_situacio_flota_pesquera/)

<sup>582</sup> According to Article 3 of the Treaty on the Functioning of the European Union (TFEU).

<sup>583</sup> <http://www.fao.org/gfcm/en/>

<sup>584</sup> ICCAT: <https://www.iccat.int/en/>

<sup>585</sup> *Communication from the Commission to the European Parliament and the Council Concerning a consultation on Fishing Opportunities for 2016 under the Common Fisheries Policy.*



many of interest to the Catalan fishing industry, such as hake, red shrimp and anchovy. Red tuna have recovered in recent years but numbers have not yet reached MSY levels. Levels of over-fishing in the Mediterranean are far above those in any other part of Europe and measures are thus needed to reverse the situation via effective management plans. The sector's compliance with regulations will need to be improved, as will government inspection and supervision.

In Catalonia some plans for joint management of fishing have proved successful. This is the case for the sand eel<sup>586</sup>, where government, the fishing industry, ecological NGOs and scientists agree on measures to ensure sustainable management of this resource. Self-management measures, an initiative of the fishing community, have also been introduced in the case of the Palamós prawn and hake caught off Roses.

The compilation of reliable data on fishing (such as total catch and species caught, fishing effort and fishery areas) in Catalonia is essential to make a scientific assessment of the quality of fish stocks and marine ecosystems and to contribute to resource management based on objective scientific data. Resource assessment and scientific work are made more difficult by problems such as the distribution of powers between different levels of government and a failure to share data.

In addition to captures recorded in official statistics, there are others that are not recorded because they are sold illegally or correspond to recreational fishing. If we also include fish returned to the sea when already dead before the vessel reaches port (discards) it is estimated that in Catalonia undeclared fish and discards amount to about 30% of the amount officially landed<sup>587</sup>. For some species, such as lobster or small hake, this percentage can be much higher. Undeclared fishing varies according to the time of year and the amount caught is higher during holidays and when there are more tourists.

Discarding fish before landing has been a common practice in Catalonia for many years. Discards normally comprise fish of no commercial value, or fish which are saleable but too small, fish damaged by fishing tackle or with a very low market value, and other species captured using less selective techniques which have no commercial value, such as marine invertebrates and sharks. The new Common Fisheries Policy (CFP) addresses this problem and will make it necessary to establish measures to reduce unwanted capture. Unavoidable unwanted capture will be managed in port and the CFP obliges ship owners to unload it.

It should also be pointed out that fishing has important impacts on non-commercial species whose conservation is at risk and which form part of the by-catch of fishing vessels. These include sea birds, sea turtles and marine mammals<sup>588</sup>.

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<sup>586</sup> [http://agricultura.gencat.cat/ca/ambits/pesca/dar\\_especies\\_calador\\_mediterrani/plans-gestio-cogestio/](http://agricultura.gencat.cat/ca/ambits/pesca/dar_especies_calador_mediterrani/plans-gestio-cogestio/)

<sup>587</sup> Coll, M., Carreras, M., Cornax, M.J., Massutí, E., Morote, E., Pastor, X., Quetglas, T., Sáez, R., Silva, L., Sobrino, I., Torres, M.A., Tudela, S., Harper, S., Zeller, D., Pauly, D. (2014) *Closer to reality: reconstructing total removals in mixed fisheries from Southern Europe*. Fisheries Research 154, 179-194.

<sup>588</sup> Abdul Malak, D., Livingstone, S.R., Pollard, D., Polidoro, B.A., Cuttelod, A., Bariche, M., Bilecenoglu, M., Carpenter, K.E., Collette, B.B., Francour, P., Goren, M., Kara, M.H., Massutí, E., Papaconstantinou, C., Tunesi, L. (2011) *Overview of the Conservation Status of the Marine Fishes of the Mediterranean Sea*. IUCN. vii + 61pp., Gland, Switzerland and Malaga, Spain.



Non-industrial fishing plays an important role in Catalonia and involves small vessels fishing near the coast with selective tackle. In 2011 a Mediterranean platform for small-scale fishing operations was founded: MedArtNet, which defends their approach to fishing<sup>589</sup>. It also reflects the fact that such fishing involves traditional and cultural practices that should be preserved.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Progress on the joint management of fisheries, with representation from the sector, experts and the government in order to ensure the sustainable management of fishing resources.
- ❖ Reduce discards (i.e. avoid unwanted captures).

**14.5** By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.

Although it is formulated a little differently, Target 14.5 reflects Aichi target 11 of the Convention on Biological Diversity<sup>590</sup>, which sets a goal of protecting 10% of the world's marine and coastal areas. These areas should be managed efficiently and form well-connected systems that are representative from the ecological point of view. Achieving the target thus involves above all the establishment of effective management measures to protect biodiversity and ecosystems as a whole, beyond the legal figure for protection that may be declared.

In Catalonia the marine surface with some type of environmental protection totals 85,614 hectares, equivalent to 9.5% of territorial waters (up to 12 miles offshore)<sup>591</sup>. This total includes different types of area, including areas of natural interest, Natura 2000 sites, natural parks, and partial and fully protected natural reserves (see the complete list at the end of the chapter).

Only two of these areas (Cap de Creus Natural Park and the Medes Islands, which form part of the Montgrí, Illes Medes and Baix Ter Natural Park) are considered specially protected natural areas with their own resources (albeit insufficient) to manage the area. Since 2011 these two areas have been included in the list of Specially Protected Areas of Mediterranean Importance (SPAMI)<sup>592</sup>, declared as part of the Barcelona Convention. The other areas form part of the Natura 2000 network and, as such, are governed by a

<sup>589</sup> <http://www.medartnet.org/ES/definitions.html>

<sup>590</sup> Aichi target 11 stipulates that *by 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape.* <https://www.cbd.int/sp/targets/>

<sup>591</sup> Data calculated by the natural environment planning service of the Directorate-General for Environmental Policy and Sustainability, Ministry of Territory and Sustainability (unpublished).

<sup>592</sup> <http://www.rac-spa.org/spami>

management instrument which establishes generic protection measures<sup>593</sup>, but there is a clear lack of management.

As well as areas declared according to environmental regulations, there are others where fishing resources are also regulated, such as the no-take area from Cap Negre to Pa de Pessic (Ses Negres), at Begur, and the Masia Blanca marine reserve at El Vendrell<sup>594</sup> (for which MAGRAMA is responsible), although they do not have sufficient resources to carry out inspections.

In 2014 the Spanish government approved a proposal to include various marine areas in the list of Sites of Community Importance (SCI) in the Natura 2000 network and declared new Special Protection Areas for Birds which include the Catalan coast<sup>595</sup>, areas which have not yet been incorporated into the Catalan system of protected natural areas.

In the context of the Convention on Biological Diversity Ecologically or Biologically Significant Marine Areas (EBSA) have been created. These are areas that are of special interest from the biological and ecological viewpoint, according to scientific criteria. Two of the EBSA approved in the Mediterranean in 2014 are in the sea off the Catalan coast, one focusing on benthic ecosystems<sup>596</sup> and the other on pelagic ecosystems<sup>597</sup>. Classification as an EBSA does not imply that these areas have any legal protection but it does indicate international recognition of the value of marine and coastal ecosystems in Catalan waters and highlights the responsibility of governments in guaranteeing their protection and continuity.

Another proposal in this area is the designation of the cetacean corridor between the Balearic Islands, Catalonia and Valencia as a SPAMI<sup>598</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Reinforce the protection of the Catalan system of protected natural areas with measures including the new marine areas proposed by the Spanish government (2014) as Sites of Community Importance (SCI) in the Natura 2000 network and Special Protection Areas for Birds that include the Catalan coast.
- ❖ Ensure the protection and continuity of the two Ecologically or Biologically Significant Marine Areas (EBSA) off the Catalan coast.

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<sup>593</sup> Instrument to manage Special Conservation Areas declared in the Mediterranean area (Annex 6 of Government Agreement 150/2014, of 4 November).

<sup>594</sup> [http://agricultura.gencat.cat/ca/ambits/pesca/dar\\_proteccio\\_recursos\\_litoral/dar\\_zones\\_protegides/](http://agricultura.gencat.cat/ca/ambits/pesca/dar_proteccio_recursos_litoral/dar_zones_protegides/)

<sup>595</sup> A new Site of Community Importance ('System of undersea canyons in the west of the Gulf of Lion') has been proposed on the north coast and a new Special Protection Area for Birds ('Empordà') has been declared. On the central section of the coast a new Special Protection Area for Birds, Baix Llobregat–Garraf, was created and in the south a new SPA was established at Delta de l'Ebre-Illes Columbretes <http://www.magrama.gob.es/es/costas>.

<sup>596</sup> <https://chm.cbd.int/database/record?documentID=204124>

<sup>597</sup> <https://chm.cbd.int/database/record?documentID=204125>

<sup>598</sup> <http://alianzamarblava.org/es/comunicados/medio-ambiente-debe-aplicar-regimen-proteccion-corredor-migracion-cetaceos-mediterraneo/>

**14.6** By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.<sup>599</sup>

According to the UN, one of the problems concerning the world's fisheries is the public subsidies that help to bring about an excessive increase in fishing capacity, in a context where stocks are already being overfished.

As a result, assistance such as the modernisation of tackle, the renovation of vessels, or fuel consumption have a negative impact on the sustainability of fishing. It is estimated that the subsidies that encourage over-fishing are equivalent to 20% of annual world captures, according to the NGO Oceana, which points out that eliminating these subsidies would be the simplest way to protect the oceans<sup>600</sup>.

In the European Union the European Maritime and Fisheries Fund (EMFF)<sup>601</sup> is responsible for subsidies to the fishing sector in the period 2014-2020. The EMFF operational programme envisages allocating nearly 1.6 billion euros to Spain, of which approximately 75% comes from the EU (1.16 billion, the largest amount of all member states).

MAGRAMA has just approved selection criteria for the award of these subsidies<sup>602</sup>, adapted to the changes that have taken place following the reform of the Common Fisheries Policy in 2014 and dealing with some of the criticisms levelled at them previously. The EMFF considers inadmissible operations that may contribute to increasing fishing capacity. It also establishes a prohibition on access to the fund for operators on whom serious administrative sanctions have been imposed in connection with the CFP and illegal, undeclared and unregulated fishing.

The Government of Catalonia manages the awarding of EMFF subsidies in Catalonia. In the period 2014-2020 over 50 million euros will be allocated to subsidies, 38 million euros of which will come from European funds and 12 million euros will be provided by Catalonia. Of the seven pillars of the EMFF the largest allocation of resources is to support the marketing, transformation and development of sustainable fishing.<sup>603</sup>

<sup>599</sup> Taking into account the ongoing WTO negotiations, the Doha Development Agenda and the mandate of the Hong Kong Ministerial Declaration.

<sup>600</sup> RUBIN, A. ET AL. (2015) *Paths to Fisheries Subsidies Reform: Creating sustainable fisheries through trade and economics*. Oceana.  
[http://oceana.org/sites/default/files/732/rockefeller\\_report\\_final\\_web-version\\_lowerrez.pdf](http://oceana.org/sites/default/files/732/rockefeller_report_final_web-version_lowerrez.pdf)

<sup>601</sup> [http://ec.europa.eu/fisheries/cfp/emff/index\\_es.htm](http://ec.europa.eu/fisheries/cfp/emff/index_es.htm)

<sup>602</sup> Document approved in May 2016: [http://www.magrama.gob.es/es/pesca/temas/fondos-europeos/criteriosdeseleccion\\_consolidadomayo-2\\_tcm7-420668.pdf](http://www.magrama.gob.es/es/pesca/temas/fondos-europeos/criteriosdeseleccion_consolidadomayo-2_tcm7-420668.pdf)

<sup>603</sup> Resources are also assigned to the following areas (from more to less): increasing occupation and cohesion in the region, encouraging sustainable aquaculture, technical assistance, support for application of the Common Fisheries Policy and support for the application of the Integrated

Subsidies for the temporary suspension of fishing activity amount to 2.3 million euros per year (figures for 2016). EMFF and MAGRAMA each provide half of the amount. It includes subsidies for the owners of fishing vessels whose home port is in Catalonia and subsidies for fishery employees affected by the suspension of fishing with purse seines and trawling. Activity was suspended for the months of December 2015 and January, February and June 2016.

Another channel via which fishing is subsidised is exemption from tax on fuel as specified in Spanish *Law 38/1992 on special taxes*. At the time of writing it has not been possible to quantify this indirect assistance.

The main challenge facing Catalonia with regard to this Agenda target is to:

- ❖ Ensure that subsidies from the European Maritime and Fisheries Fund (EMFF) awarded to Catalonia are focused on support for sustainable fishing.

**14.7** By 2030, increase the economic benefits to Small Island Developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

In view of the geographical scope of the target it is not considered to constitute a challenge for Catalonia.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 14

The CADS considers that the main challenges facing Catalonia with respect to SDG 14 are to:

- ❖ Reduce the pollutants entering the sea from rivers and underwater discharge pipes by improving the treatment of urban and industrial wastewater.
- ❖ Reduce man-made sources of sea acidification (such as nutrients from agriculture) and increase the resilience of maritime activities to this phenomenon.
- ❖ Reinforce the protection of natural marine and coastal areas, applying the currently existing corpus of international and European legislation and to guarantee the protection and continuity of the two Ecologically or Biologically Significant Marine Areas (EBSA) off the coast of Catalonia.
- ❖ Integrate the ecosystem services approach in regulations and regional planning and the management of marine and coastal areas.
- ❖ Foster research into the effects of global and climate change on the sea and incorporate the results into marine and coastal planning and programmes.



- ❖ Promote the joint management of fisheries, with representation from the sector, experts and the government in order to ensure the sustainable management of fishing resources.

## **15 PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS**

### **UNITED NATIONS 2030 AGENDA GOALS**

- 15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.
- 15.2** By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.
- 15.3** By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.
- 15.4** By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.
- 15.5** Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.
- 15.6** Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed.
- 15.7** Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products.
- 15.8** By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species.
- 15.9** By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

## INTERNATIONAL CONTEXT

The development of humanity is completely dependent on ecosystems and the services they provide (production of food, regulation of the water cycle, the enjoyment of landscape and the reservoir of biodiversity, among many others).

The international community has undertaken various initiatives in response to the loss of biodiversity, among them the Convention on Biological Diversity, approved in 1992, and the 2011-2020 Strategic Plan for Biodiversity, which contains five strategic objectives and twenty Aichi targets. However, despite these initiatives, the pressures on biodiversity are expected to continue increasing until 2020 and their status is expected to go on worsening<sup>604</sup>.

Over the last hundred years the number of protected areas and the space they occupy have increased considerably. Consequently nearly a quarter of countries have achieved Aichi target 11<sup>605</sup> for 2020 of conserving at least 17% of the land's surface and 10% of the sea and coastal areas. If current rates of growth continue, the target for land is expected to be met. Despite this, national strategies and plans indicate that not enough is being done in regard to the ecological representativeness, connectivity and effectiveness of the management of these areas<sup>606</sup>.

Forests, which perform many functions and provide a habitat for 80%<sup>607</sup> of all terrestrial species of plants and animals, currently occupy 30.8%<sup>608</sup> of the planet's land area and are receding slightly<sup>609</sup>. At the same time, in recent years, the area occupied by forests certified as being sustainably managed<sup>610</sup> has increased, from 14 million hectares in 2000 to 438 million in 2014<sup>611</sup>.

The soil performs numerous functions and services required by humans and is essential to most aspects of our lives<sup>612</sup>. For this reason the United Nations Convention to Combat Desertification (UNCCD) was adopted in 1994. However, each year 12 million hectares (23 hectares per minute) are lost because of drought and desertification<sup>613</sup> and

<sup>604</sup> [Global Biodiversity Outlook 4](#). Convention on Biological Diversity, 2014.

<sup>605</sup> Aichi target 11 in the Convention on Biological Diversity: By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape.

<sup>606</sup> [Global Biodiversity Outlook 4](#). Convention on Biological Diversity, 2014.

<sup>607</sup> UN data on the SDGs: <http://www.un.org/sustainabledevelopment/biodiversity/>

<sup>608</sup> World Bank figures (2013).

<sup>609</sup> According to these World Bank figures, in 2006 woodland occupied 31% of the planet's land surface in 2006.

<sup>610</sup> Woodland with internationally recognised certification.

<sup>611</sup> Global Forest Resources Assessment 2015. FAO.

<sup>612</sup> Beginning of the Vienna Declaration to mark International Soils Year, 2015. International Union of Soil Sciences and FAO.

<sup>613</sup> <http://www.un.org/sustainabledevelopment/biodiversity/>



52% of the land used for agriculture is severely or moderately affected by soil degradation<sup>614</sup>.

Mountains cover 25% of the planet's land mass and provide essential services not only for people who live in them (12% of the world's population) but also for those who live in the lowlands<sup>615</sup>. Mountain ecosystems are fragile and vulnerable due to extreme climate and biogeographical conditions, and they are home to 25 of the world's 34 biodiversity hotspots<sup>616</sup>.

Moreover, between 1996 and 1998 and 2015 the number of endangered species rose from 10,553 to 23,250, including an estimated 26% of mammal species, 13% of birds, 41% of amphibians and 40% of gymnosperms<sup>617</sup>. The Living Planet Index estimates that the size of vertebrate populations fell by 52% between 1970 and 2010<sup>618</sup>.

On 12 October 2014 the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization*, signed in 2010, came into force. To date it has been ratified by 73 countries<sup>619</sup>.

As international trade can be the reason why certain species of wild fauna and flora come to or continue to be exploited unsustainably, in 1973 the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was adopted. It came into force in 1975 and has been signed by 182 countries to date<sup>620</sup>.

Currently the CITES Convention includes approximately 35,000 species, 3% of which cannot be commercialised at all, while the remaining 97% can be commercialised but are subject to regulations. Despite the existence of this agreement, illegal trade in wild flora and fauna has reached unprecedented levels recently, contributing to the declining populations of many species. In economic terms it is estimated that this type of trade generates profits between 5,000 million and 20,000 million US dollars annually<sup>621</sup> and it is considered one of the main activities of organised crime.

On a world level, the number of species which can be considered invasive (in countries where they are not native) continues to grow, as does their impact on biodiversity and ecosystem services in the areas where they establish their presence and develop. In response to this situation, 55% of the signatories of the Convention on Biological

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<sup>614</sup> ELD Initiative (2015). [\*The value of land: Prosperous lands and positive rewards through sustainable land management\*](#).

<sup>615</sup> [\*Why mountains matter for forests and biodiversity. A call for action on the sustainable development goals \(SDGs\)\*](#). Mountain Partnership

<sup>616</sup> This concept was defined in 1988 by scientist Norman Myers as a place especially rich in endemic species, which make it irreplaceable, and one which is seriously threatened.

<sup>617</sup> [IUCN Red List, 2015](#)

<sup>618</sup> WWF. 2014. [\*Living Planet Report 2014: species and spaces, people and places\*](#). [McLellan, R., Iyengar, L., Jeffries, B. and N. Oerlemans (Eds)]. WWF, Gland, Switzerland.

<sup>619</sup> Braulio Ferreira de Souza Dias, Executive Secretary of the Convention on Biological Diversity on the occasion of the first meeting of the compliance committee under the Nagoya Protocol, Montreal, Canada, 6-8 April, 2016.

<sup>620</sup> <https://www.cites.org/eng/disc/what.php> [Consulted: 7/07/16]

<sup>621</sup> Excluding wood and marine flora and fauna. Figures from the CITES website: <https://cites.unia.es/cites/file.php/1/files/cites-40th-anniversary.pdf>

Diversity have drawn up national plans to deal with the problem and attempt to prevent, control and eradicate these species<sup>622</sup>.

Finally, important progress is being made in the inclusion of biodiversity in plans and strategies to reduce poverty and incorporate natural capital in national accounting systems, although there are still differences between countries in this area. Approximately 70% of the latest reports submitted to the Convention on Biological Diversity include information that suggests an improvement in connection with this target, such as the development of policies that take biodiversity into account with regard to land use, regional planning, local development and plans to reduce poverty<sup>623</sup>.

## EUROPEAN CONTEXT

The Natura 2000 network of protected areas together with protected areas in individual countries account for 21% of the European Union's land and inland water and most countries have achieved the 17% target for protected land area specified in Aichi 11<sup>624</sup>.

In contrast with the worldwide trend, the area of woodland in the European Union has increased in recent decades, occupying 40% of the land mass in 2015 (161 million hectares)<sup>625</sup>.

Over 95% of the forestry land in the European Economic Area is subject to some kind of management, with practices ranging from work on preserving biodiversity to single-crop forestry. Eighty per cent of the woodland in the EEA is managed for the production of wood. Over 60% of it is certified for sustainable management programmes, mainly complying with FSC and PEFC standards, although there are substantial differences between countries<sup>626</sup>.

It has been calculated that 11.4% of the area of the European Union is affected by soil erosion, agricultural land being affected most and forestry land least<sup>627</sup>. The main cause of soil degradation in European countries bordering the Mediterranean is erosion, while in the more densely populated industrialised countries of northern and western Europe the main causes are urbanisation and the construction of new infrastructures, because of sealing and possible contamination<sup>628</sup>.

The European Union's mountain habitats (mainly woodland and pasture) are estimated to be home to 73 priority species of birds and to contain 558 areas of special importance to birds<sup>629</sup>. Mountains account for 29% of the area of the EU. Their ecosystems generally feature a wider variety of habitats and species than lowland areas. For

<sup>622</sup> Secretariat of the Convention on Biological Diversity (2014). [Global Biodiversity Outlook 4](#). Montreal.

<sup>623</sup> Secretariat of the Convention on Biological Diversity (2014). [Global Biodiversity Outlook 4](#). Montreal.

<sup>624</sup> 'Biodiversity — protected areas'. *The European Environment State and Outlook 2015*. Cross-country comparisons. European Environment Agency.

<sup>625</sup> [European forest ecosystems. State and trends](#). European Environmental Agency, 2016.

<sup>626</sup> [European forest ecosystems. State and trends](#). European Environmental Agency, 2016.

<sup>627</sup> [Agri-environmental indicator - soil erosion](#). Eurostat. Figures for May 2015.

<sup>628</sup> [Soil degradation. Environment in EU at the turn of the century](#) (Chapter 3.6). European Environment Agency, 2011.

<sup>629</sup> [10 messages for 2010. Mountain ecosystems](#). European Environment Agency 2010.

example, the Alpine zone, which occupies only 3% of Europe's land area, is home to 20% of indigenous vascular plant species.

The state of conservation of 60% of the species and 77% of the habitats evaluated is considered to be unfavourable. For example, numbers of grassland butterflies fell by 50% between 1990 and 2011 with no sign of recovery, while there has been a 12% drop in numbers of common birds since 1990 (and a 30% decrease in numbers of farmland birds). Nevertheless, there seems to be a recovery in numbers of bats and large carnivores after a series of years in which numbers have fallen<sup>630</sup>. According to IUCN figures, of the 9,735 species of vertebrate and invertebrate animals and plants assessed in Europe, 1,677 are considered to be endangered, 4 extinct in the wild and 36 extinct in Europe (of which 7 still exist elsewhere). By way of example, 17% of mammals, 23% of amphibians and 13% of birds are considered to be endangered<sup>631</sup>.

In April 2014 the European Union became a party to the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization* and adopted EU Regulation 511/2014, which transposed the legislation relating to measures for compliance. The Regulation became applicable when the Protocol came into force.

The provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) have been incorporated in European legislation by the EU Wildlife Trade Regulations<sup>632</sup>.

Although most imports of wild flora and fauna into Europe are legal, the EU is also one of the largest markets for trafficking in endangered species<sup>633</sup>. Moreover, it is a region from which they may be sourced and through which they are transported. Trafficking involves birds, mammals, reptiles, fish, medicinal plants and timber. Some rare species of birds, coral and turtles are sent from member states to destinations outside the EU or to other member states. Ivory and rhinoceros horn from poaching in Africa are in great demand in Europe, from where they are sold on to China<sup>634</sup>.

The number of exotic species introduced into the European Union grew by 76% in the period 1970-2007<sup>635</sup> and it is estimated that currently there are some 12,000 alien species in Europe, 10-15% of which are invasive. Land plants are by far the commonest

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<sup>630</sup> ['Biodiversity'](#), The European Environment State and Outlook 2015. European briefings. European Environment Agency.

<sup>631</sup> *European species under threat. Overview of European Red List results*. IUCN Red List, June 2015.

<sup>632</sup> The European Union has not yet become part of the CITES Convention, as the agreement to allow this has not yet come into force, but all the EU member states are part of it. Nevertheless, the EU has incorporated the CITES convention in its legislation by means of Framework Regulation (EC) 338/97 of the Council on the protection of plant and animal species, which controls trade in them, and EC Regulation 865/2006 of the Commission, which establishes provisions for the application of EC Regulation 338/97.

<sup>633</sup> [Commission staff Working Document Analysis and Evidence in support of the EU Action Plan against Wildlife Trafficking](#). (Accompanying the document EU Action Plan against Wildlife Trafficking), 2016.

<sup>634</sup> [Threat Assessment 2013 Environmental Crime in the EU](#). Europol, 2013.

<sup>635</sup> [Commission Staff Working Document Impact Assessment Accompanying the document Proposal for a Council and European Parliament Regulation on the prevention and management of the introduction and spread of invasive alien species](#), European Commission, 2013.

exotic species (over 6,500 species), followed by land invertebrates (over 2,700 species) and aquatic marine species (over 1,000). Exotic vertebrate species, at a few hundred, are the least common category in the EU<sup>636</sup>.

Accordingly, in 2014 the European Union published new regulations<sup>637</sup> on invasive alien species, which include measures for prevention, early warning and rapid response, and for managing those that are already established.

In the medium-term review of the EU Strategy on Biodiversity for 2020, the Commission warns that its targets can only be met if efforts to implement and consolidate them are intensified. It also points out that, although considerable progress has been made in establishing framework policies, they need to be effectively integrated in a wide range of policies with coherent priorities, backed by adequate funding.

### THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are therefore detailed below, structured in line with the 2030 Agenda targets.

**15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

To analyse the challenges for Catalonia posed by this target, which is expressed in generic terms, we have referred to the Convention on Biological Diversity and, more specifically, to Aichi target 11 in the 2011-2020 Strategic Plan for Biodiversity, which establishes that at least 17% of land and inland water areas need to be protected by means of effective and equitable management.

Target 2 of the EU Biodiversity Strategy to 2020<sup>638</sup>, which refers to the need to maintain and restore ecosystems and their services, also needs to be borne in mind. It stipulates that by 2020 at least 15% of degraded ecosystems in the EU should be restored and the services they provide recovered.

In Catalonia the system of protected areas (including the Plan for Areas of Natural Interest – PEIN) includes a land area of 1,018,530 hectares, 31.7% of the area of the country<sup>639</sup>. Among the areas included in the Plan, the specially protected natural areas (ENPE) are of particular interest. The level of protection is higher and they have their

<sup>636</sup> Kerstin Sundseth, Ecosystems LTD. [Invasive Alien Species. A European Union response](#). European Commission, 2014.

<sup>637</sup> Regulation 1143/2014, on the prevention and management of the introduction and propagation of invasive alien species.

<sup>638</sup> [The EU Biodiversity Strategy to 2020](#). European Commission, 2011.

<sup>639</sup> [Dades del medi ambient a Catalunya \(Environment statistics 2015\)](#). Ministry of Territory and Sustainability.

own planning and management instruments. Currently they occupy 296,351 hectares and account for 9.23% of the area of Catalonia<sup>640</sup>.

Although the areas referred to above cover more than the 17% specified in Aichi target 11, it must be remembered that most of the locations in the protected natural area system have a low level of protection<sup>641</sup> and do not generally have management instruments or the resources necessary to provide them<sup>642</sup>. The only assessment carried out of the effectiveness of the system of protected natural areas in Catalonia, published in 2008, revealed that the degree of conservation of the key elements that had justified their creation had worsened in 30% to 50% of ENPE sites<sup>643</sup>.

The management of Catalonia's natural heritage, with the aim of maintaining the functions of ecosystems and thus ensuring the quality of the services they provide, is not possible based only on areas with a high level of protection but calls for the country to be planned and managed according to ecological criteria. In this respect attention needs to be paid to ecological connectivity. Although it is good in some parts of Catalonia (the eastern Pyrenees, the central pre-Pyrenees area, and the Serralada Transversal), standards are average or poor in areas on and near the coast, where approximately 85% of the population live and most tourists go, and are rated poor or very poor in the lowlands in the centre of Catalonia<sup>644</sup>.

In recent years progress has been made in the application of new formulas for the conservation of natural areas in Catalonia which go beyond the view of heritage managed exclusively by government bodies (with their limited resources). In this respect, special mention must be made of land stewardship, a model of management via agreements between private parties which was first applied in this country towards the end of the 1990s and has since been consolidated, so that 42,904.79 hectares (1.4% of Catalonia<sup>645</sup>) were being managed under agreements of this kind by 2015.

Finally, it should be pointed out that good management of our natural heritage calls for the recovery of areas of great natural interest affected by processes of degradation which have affected their ecological characteristics. In Catalonia there are a small, but very significant, number of cases where it has proved possible to reverse the degradation of natural areas. They include Ivars i Vila-sana Lake, the Tudela site in Cap

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<sup>640</sup> [Dades del medi ambient a Catalunya \(Environmment statistics 2015\)](#). Ministry of Territory and Sustainability.

<sup>641</sup> Mallarach, JM & Comas, E, coord. (2008). [Protegits, de fet o de dret?. Primera avaluació del sistema d'espais naturals protegits de Catalunya](#). Catalan Natural History Institution (ICHN). Fundació Territori i Paisatge. With contributions by over 130 authors. 303 p.

<sup>642</sup> [Informe sobre les nous reptes en la conservació dels espais naturals i de les espècies. Aportacions del Consell de Protecció de la Natura en relació amb els espais protegits](#). Approved by the Permanent Commission of the Catalan Nature Protection Council on 30 November 2011.

<sup>643</sup> Mallarach, JM & Comas, E, coord. (2008). [Protegits, de fet o de dret?. Primera avaluació del sistema d'espais naturals protegits de Catalunya](#). Catalan Natural History Institution (ICHN). Fundació Territori i Paisatge. With contributions by over 130 authors. 303 p.

<sup>644</sup> Informe sobre l'estat i tendències del medi natural a Catalunya. Catalan Natural History Institution (ICHN), 2013.

<sup>645</sup> Vila, D. and Masó, M. 2015. [Sisè inventari d'acords i entitats de custòdia del territori a Catalunya](#). Reports by the Xarxa de Custòdia del Territori, no.20, 83 pp.

de Creus Natural Park, the Tancada and l'Alfacada lagoons in the Ebro Delta and the dunes along the coast at Pletera, L'Estartit (currently in progress).

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Improve figures for higher levels of protection and, above all, actively manage sites that are already protected, with the tools and resources necessary to ensure this is done effectively.
- ❖ Design a dynamic system of natural areas (and a policy for managing the territory and its natural heritage) that will actively help ecosystems to adapt to the effects of climate change.
- ❖ Develop Catalonia's green infrastructure and incorporate, as a central feature, ecological connectivity and ecosystem services in spatial and town planning, thus reinforcing the effectiveness of policies designed to protect and manage our natural heritage.
- ❖ Identify and restore natural areas that currently suffer high levels of degradation, especially on and near the coast, such as the Barcelona metropolitan area or the Camp de Tarragona metropolitan area, where this type of measure can bring about a substantial improvement in the natural areas they contain.

**15.2** By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

According to the fourth edition of the Catalan land usage map, woodland occupies 40.23% of the country's land area<sup>646</sup>, the total rising from 1,218,573 to 1,284,253 hectares between 1993 and 2009, an increase of 5.39%. This growth is due mainly to the progressive decline in agriculture and livestock operations.

In Catalonia large areas of woodland are still unplanned (29.7% of public land and 70.5% of private land<sup>647</sup>) and the presence of sustainable forestry management is still very limited. Only 11.6% of woodland areas (238,707 hectares) has PEFC certification<sup>648</sup> (of which 17.3% are publicly owned and 82.7% private<sup>649</sup>). There is hardly any FSC certification in Catalonia, although there are 1,779 hectares in Les Gavarres.

Despite the continuing increase in the extent of woodland and its biomass in recent decades, mature forests, those which are least affected by human activity and contain the habitats with the greatest biodiversity, cover only about 2% of all wooded land and consist of small areas (0.5 to 10 hectares). Although most of them (over 90%) are in

<sup>646</sup> 4a edició del Mapa de Cobertes del Sòl a Catalunya (Catalan land usage map, 4th edition), September 2013 Figures for 2009.

<sup>647</sup> [Catalunya, un país de boscos](#). Ministry of Agriculture, Livestock, Fisheries and Food, 2014.

<sup>648</sup> Programme for the Endorsement of Forest Certification (PEFC).

<sup>649</sup> [Distribució territorial de la superfície forestal ordenada, del nombre de finques i del nombre de gestors adscrits de Catalunya al sistema PEFC](#), figures as at 9 February 2016 Ens Català Sol·licitant de la Certificació Forestal.



areas in the Natura 2000 network, few enjoy effective protection. In La Garrotxa, the county with the largest area of indigenous forests in Catalonia and the only one in which it has been valued quantitatively, it has been found that in only ten years approximately half of the mature woodland in the inventory has been felled and that of the remaining mature woodland only about 10% is effectively protected<sup>650</sup>. There is, therefore, a need for effective protection of the most representative mature woodland.

It is also interesting to note that the health benefits of woodland, especially mature forests, are beginning to be recognised [see SDG #3]. Interest in the Japanese practice of *shinrin yoku* (forest bathing or the medicine of being in the forest) is growing in many countries, including Catalonia. An example can be seen in the Selvans Project, which aims to create a network of therapeutic woodland itineraries in the province of Girona to promote people's well-being, conserve the remaining areas of mature woodland, and encourage health tourism.

It is thus necessary for woodland management to recognise all the values and services provided by the ecosystem and to be compatible with the conservation of biodiversity.

Another important element that must be taken into account is the effect that climate change [see SDG #13] may have on forests in Catalonia. With the envisaged increases in temperature, it is expected that the upper altitude limit for woodland will extend to high mountain areas and that pine forests and steppe will be replaced by deciduous trees in locations where there is sufficient water. At lower levels, increased levels of drought will lead to the expansion of xerophile vegetation and shrubs, to the detriment of mesophytic forest. Forest management (including policies for reforestation in degraded areas and the planting of trees on abandoned agricultural land) will therefore need to allow for the changes taking place now and those expected to occur in the immediate future<sup>651</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Improve the ecological structure of the extensive areas of degraded forestry land (coppiced or overgrown woods) or very young woodland (unbalanced undergrowth, shrubland and bushes), often very vulnerable to forest fires, and ensure sustainable use of their natural resources that prioritises maintenance of the ecosystem services they provide.
- ❖ Establish a network of naturally evolving forests to guarantee the preservation of Catalonia's most mature and biodiverse forests.
- ❖ Improve the system of governance and apply financial and tax incentives to make the above forestry policies possible.
- ❖ Incorporate knowledge of the current and anticipated effects of climate change in forestry management.

<sup>650</sup> Mallarach, JM, Vila, J. & J. Montserrat, J. coord, (2013) [\*Reptes per preservar els boscos madurs a Catalunya. II Jornades sobre boscos madurs a Catalunya\*](#). Catalan Natural History Institution (ICHN) and Silene Association. Anglès. 210 p.

<sup>651</sup> Peñuelas, J., Sardans, J., Filella, I. [et al.]. *Ecosistemes terrestres. Tercer informe sobre el canvi climàtic a Catalunya*. Government of Catalonia and Institute of Catalan Studies. Unpublished work expected to be published in September 2016.



**15.3** By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

Soil is an essential non-renewable resource for the production of food, the regulation of the water cycle and the biogeochemical cycle of many elements (it can act as a carbon sink, for example). It is also essential for conserving biodiversity on land.

In Catalonia the main cause of soil degradation is erosion (mainly affecting dry-farmed woody crops, areas where there have been recurring, intense forest fires and rocky badlands) and the loss of organic material. Salinisation (which affects the eastern part of the Ebro Valley, caused by the rising saline substratum in Lleida, and various coastal areas due to the over-exploitation of aquifers), compacting and sealing (total urban land grew from 133,757 hectares in 1993 to 198,809.50 hectares in 2009<sup>652</sup>) are also causes of soil degradation and destruction<sup>653</sup>.

In 2014 there were 1,217 potentially contaminated sites in Catalonia. Eighty per cent of cases of soil contamination have their origins in industrial activities (66% correspond to the chemical industry, waste treatment, metal and oil) and commercial activities (88% of cases of contamination are caused by petrol stations and fuel distribution centres)<sup>654</sup>.

In 2008, within the framework of the United Nations Convention to Combat Desertification (UNCCD), the Spanish government drew up a programme for national action to combat desertification with the aim of determining the factors that contribute to desertification and the practical measures necessary to combat drought and mitigate its effects. The plan is accompanied by various maps, where it can be seen that in Catalonia there are various areas with a very high risk of desertification, especially the south of Lleida and Tarragona, but also some parts of Barcelona. However, Catalonia does not have specific plans for measures to combat desertification.

In order to have a detailed soil map of the areas of greatest agricultural interest, in 1983 the Government of Catalonia's Ministry of Agriculture, Livestock, Fisheries and Food began to draw up a 1:25,000 map of soils in Catalonia. At present this project<sup>655</sup> includes maps of the areas irrigated by the Urgell canals, part of L'Empordà, irrigated land in Lleida and El Penedès (a total of 600,000 hectares). With this mapping, which needs to be completed, it would be important to include soil quality criteria in regional planning.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Have information and maps on the quality and state of soils in Catalonia and incorporate this information in regional planning.
- ❖ Establish a strategy for Catalonia to combat desertification.

<sup>652</sup> 4a edició del Mapa de Cobertes del Sòl a Catalunya (Catalan land usage map, 4th edition), September 2013 Figures for 2009.

<sup>653</sup> Degradació de sòls i desertificació. Àlvar Feliu and Inés Gueorguieva, 2003.

<sup>654</sup> [\*El sòl com a recurs. Investigació i descontaminació sostenible\*](#). Conference summary. UAB, 2015. Ministry of Territory and Sustainability.

<sup>655</sup> Currently the Institut Cartogràfic i Geològic de Catalunya is continuing work on the map of soils.

**15.4** By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.

Many goods and ecosystem services that are provided by mountains are vital for the whole population and essential for those who live in the lowlands. Thus, for example, as well as constituting a great reserve of biodiversity, mountains collect and regulate a large amount of the water that runs into rivers and aquifers.

Catalonia is a mountainous country. The Pyrenees are the most notable example but the Serralada Prelitoral and Serralada Litoral, Montseny, Montserrat, La Serra de Prades and Els Ports de Beseit are others which need to be taken into account. Catalonia has a few peaks higher than 3,000 metres (Pica d'Estats and the Besiberri Massif) and more than fifty are over 2,500 metres high. We may consider that between 30% and 50% of Catalonia's surface is in mountain areas<sup>656</sup>.

The parts of Catalonia that can be considered mountain terrain are specified in *Law 2/1983 on high mountain areas*. According to the text, mountain areas comprise counties and other areas located in the mountains. Taken together these account for 46% of the total area of the country, while their population is less than 5% of that of Catalonia<sup>657</sup>.

As in the rest of Europe, Catalonia's mountain regions are undergoing many transformations, including changes in land use and the loss of population living on or from the land, distance from economic centres and the lack of public services. To all these changes we must add the effects of climate change [see SDG #13], to which mountain areas are especially sensitive. To ensure the conservation of mountainous ecosystems it is thus indispensable to take into account not only ecological changes but also the social and economic changes taking place there.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ To ensure the conservation of mountain ecosystems and their services, taking into account the social, economic and ecological changes (including climate change) occurring there and involving the local population in decision-making and the management of these regions.

**15.5** Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.

<sup>656</sup> Rivera, M. G. López, F., Claramunt, B. *La interacció entre els sistemes naturals i humans en les àrees més vulnerables al canvi climàtic: sistemes muntanyosos. Tercer informe sobre el canvi climàtic a Catalunya*. Government of Catalonia and Institute of Catalan Studies. Unpublished work expected to be published in September 2016.

<sup>657</sup> Ministry of Territory and Sustainability website:  
[http://territori.gencat.cat/ca/06\\_territori\\_i\\_urbanisme/costes\\_i\\_muntanya/politica\\_de\\_muntanya/territoris\\_de\\_muntanya/](http://territori.gencat.cat/ca/06_territori_i_urbanisme/costes_i_muntanya/politica_de_muntanya/territoris_de_muntanya/)

The conservation of species requires the conservation of the habitats where these species carry out their life cycles. Catalonia boasts great ecological diversity thanks to a wide range of altitudes, distances from the sea and climates, and 523 natural and semi-natural CORINE habitats had been identified by 2015. However, 122 of these (23%) are considered to be endangered<sup>658</sup> and the necessary plans for their recovery are not in place.

The agriculture and forestry mosaic is very rich in biodiversity but a notable regression has been taking place as a consequence of the decline of family agricultural activity. The area of cultivated land fell from 1,106,782 hectares in 1993 to 935,206 in 2009, being replaced by forestry and urban development. This decrease is particularly pronounced in dryland farming<sup>659</sup>. In fact, the indicator for the abundance of common birds in wooded areas has increased since records began in 2002, because of the progressive growth of woodlands, while that for open areas has decreased and the indicators warn of a particularly sharp decrease in steppe birds. Between 2002 and 2013 there was a progressive decline in numbers of farmland birds but in the last two years (2014-2015) numbers have recovered to 2002 levels<sup>660</sup>.

Sandy beaches are among the scarcest and most endangered habitats, undergoing an average annual regression of 0.9 m, brought about by man-made factors (mainly because sediment is retained in reservoirs and its redistribution is blocked by marinas). These habitats are subject to enormous pressure from urbanisation and the presence in summer of tourists, whose number exceeds 10 million.

Catalonia has a Biodiversity Data Bank, which brings together information about all the species identified in the country. It currently contains data on 31,205 species<sup>661</sup>. Of these species 5.5% of vascular plants, 83% of indigenous inland fish, 19% of amphibians, 18-20% of birds, 15% of mammals living on land and 20% of marine mammals are considered to be endangered.

There is a Catalogue of Endangered Flora but the Catalogue of Endangered Fauna, although compiled, has yet to be published. A catalogue of endangered species for the whole of Spain is available. Although it is not sufficient to determine the situation of such species in Catalonia, it indicates that plans need to be adopted for the recovery or conservation of the species listed, according to the level of threat. However, of the 250 plans that should have been drawn up, only 6 have been approved<sup>662</sup>.

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<sup>658</sup> [\*Dades del medi ambient a Catalunya \(Environment statistics 2015\)\*](#). Ministry of Territory and Sustainability.

<sup>659</sup> According to IDESCAT data on land use, between 2001 and 2013 the total area of irrigated farm land fell from 266,112 to 265,860 hectares. while total dry- farmed land decreased from 661,200 to 570,876 hectares.

<sup>660</sup> ICO. 2016. [\*Catorzè informe del Programa de Seguiment d'Ocells Comuns a Catalunya \(SOCC\)\*](#). Catalan Ornithology Institute (ICO), Barcelona.

<sup>661</sup> [\*Dades del medi ambient a Catalunya \(Environment statistics 2015\)\*](#). Ministry of Territory and Sustainability.

<sup>662</sup> Motion of the Catalan Nature Protection Council. [\*Nous reptes en la conservació dels espais naturals i de les espècies II. Aportacions del Consell de Protecció de la Natura en relació amb les espècies protegides i amenaçades\*](#). Approved by the Permanent Commission of the Catalan Nature Protection Council on 9 March 2015.

Although different versions have been drawn up in recent years, Catalonia does not have a strategy for biodiversity conservation, an instrument that brings together all the policies for conserving biological diversity that need to be developed, and the legal framework in force has not been updated in line with current scientific knowledge and criteria for conserving and managing biodiversity on a worldwide scale.

In the area of agricultural biodiversity (indigenous plant varieties and livestock breeds), only very partial inventories are available but there is evidence that significant losses have occurred as agricultural production has become more intensive and industrialised. Only five Catalan counties have complete inventories of plant varieties. This matter is dealt with in greater depth under Target 5. *By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, see SDG #2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.*

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Update the legal framework in line with current scientific knowledge and criteria for conserving and managing biodiversity on a worldwide scale.
- ❖ Implement the commitments of the International Convention on Biological Diversity by means of a strategy for natural heritage in line with approved international goals (Aichi targets, EU strategy on biodiversity to 2020) to develop an agreed road map for which all parties assume responsibility.
- ❖ Have complete up-to-date information which allows the state of biodiversity in Catalonia to be monitored and assessed. Maps and databases will need to be produced to provide a detailed picture of the geographical distribution and conservation status of the main components of biodiversity (and geodiversity) and how they change over time, with special effort being made in coastal and marine areas.
- ❖ Achieve a favourable state of conservation for habitats, flora and fauna, via the approval and implementation of the necessary instruments and measures (such as the catalogues of endangered habitats and fauna, recovery plans and a strategy for the conservation of flora).
- ❖ Reverse the rapid loss of agricultural biodiversity in Catalonia and safeguard the traditional ecological wisdom associated with it.

<b>15.6</b>	Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed.
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The international agreement on access to genetic resources and the fair and equitable sharing of the benefits arising from their utilization constitutes the Nagoya Protocol,

which was adopted in 2010 and has been ratified by 73 countries to date, including Spain<sup>663</sup>.

In 2014 the European Union became part of this protocol and adopted EU Regulation 511/2014 on Measures for Compliance with the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization* in the EU.

Spain has incorporated the provisions necessary for compliance with the Nagoya Protocol and the above regulations in Law 33/2015, amending Law 42/2007 on Natural Heritage and Biodiversity.

A Royal Decree regarding access to genetic resources from wild taxa and controlling their use<sup>664</sup> is currently pending approval and this will establish the procedures needed for regulation. The draft Royal Decree also specifies the authorities responsible for its application and the role of the Autonomous Communities (basically inspection and sanctions).

As the Nagoya Protocol is relatively new and instruments to regulate it are still being developed in Spain, it is important for Catalonia to establish its own procedures in accordance with current legislation, ensuring that the Protocol and the measures derived from it are known by all those who could be affected by them, especially those managing natural heritage.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Establish the procedures necessary to ensure compliance with the Nagoya Protocol in accordance with current legislation.
- ❖ Ensure that the Protocol and the measures derived from it are known by all those who could be affected by them, especially those managing natural heritage.

#### **15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products.**

According to data from the Rangers (Agents Rurals) of Catalonia, reports of poaching have decreased in recent years: while 1,256 cases were reported in 2010, only 839 were reported in 2015.<sup>665</sup> The number of hunting permits has also fallen in recent years, from 74,366 in 2010 to 47,835 in 2015. A different trend can be seen in inland fishing, where numbers have risen slightly (from 53,077 in 2010 to 55,865 in 2015)<sup>666</sup>. This decline in the popularity of hunting together with the measures applied by the

<sup>663</sup> [Braulio Ferreira de Souza Dias, Executive secretary of the Convention on Biological Diversity on the occasion of the first Meeting of the compliance committee under the Nagoya Protocol](#), Montreal, Canada, 6-8 April, 2016.

<sup>664</sup> On 18 March 2016 the public information stage concluded.

<sup>665</sup> Data provided by the Subdirectorat-General for Rangers (Agents Rurals).

<sup>666</sup> IDESCAT figures: <http://www.idescat.cat/pub/?id=aec&n=222&t=2015> [Consulted: 19/07/2016].

Government of Catalonia in recent years are believed to have led to the reduction in poaching.

In the case of fringillidae there has also been a decline in the number of cases reported (from 70 in 2010 to 59 in 2015)<sup>667</sup>. In 2016 the Ministry of Territory and Sustainability decided not to issue any exceptional permits for the live capture of fringillidae and, in any case, with effect from 2018 their capture will be banned throughout the European Union.

Although attempts to breed these birds in captivity have proved unsatisfactory and the population of fringillidae in Catalonia is declining (especially greenfinches and goldfinches)<sup>668</sup>, there are many songbird contest enthusiasts, so an open discussion must be maintained with this group, scientists, conservationists and government bodies to ensure that this activity is not perpetuated by means of poaching or illegal trade.

In recent years there has been an increase in the number of exotic species purchased by private individuals<sup>669</sup> but there have also been more cases of such species being released into the environment with the risk that they will become invasive, creating problems for their management when they are recaptured. For this reason it is important to inform people and raise awareness [see SDG #4] about the problems associated with exotic species so that the owners act responsibly [see SDG #12].

However, the trade in exotic species is not always legal. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) prohibits international trade for some species and demands the use of official permits for others (export licences in the country of origin and import licences in the country to which they are sent). In Catalonia, the administrative authority for CITES is the SOIVRE<sup>670</sup>, a body belonging to the Ministry of Industry, Tourism and Trade<sup>671</sup>.

In some cases CITES permits do not allow the animals they cover to be identified individually or do not have an expiry date. This situation has led to an illegal market in CITES documents. A document corresponding to animals that have died can be used to justify the sale of others that have been bought illegally or taken directly from their natural habitat. The system for identifying individuals covered by CITES permits and the documentation controlling the operation thus need to be improved.

There is little publicly available information on the illegal trade in flora and fauna in Catalonia. Not only the Agents Rurals but also the Catalan Police Force (Mossos d'Esquadra) and the Spanish police have powers to deal with this matter. There is thus a need for closer coordination between these bodies to ensure effective action to combat this illegal activity.

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<sup>667</sup> Data provided by the Subdirectorate-General for Rangers (Agents Rurals).

<sup>668</sup> Data from the Catalan Ornithology Institute (ICO) website: <http://www.ornitologia.org/ca/> [Consulted: 19/07/2016].

<sup>669</sup> [http://agricultura.gencat.cat/ca/ambits/medi-natural/fauna-flora-animals-companyia/dar\\_especies\\_exotiques/dar\\_tinenca\\_animals\\_exotics/](http://agricultura.gencat.cat/ca/ambits/medi-natural/fauna-flora-animals-companyia/dar_especies_exotiques/dar_tinenca_animals_exotics/) [Consulted: 19/07/2016].

<sup>670</sup> Official Service for the Inspection, Surveillance and Regulation of Exports.

<sup>671</sup> Ministry of Agriculture, Livestock and Fisheries website dealing with the CITES Convention: [http://agricultura.gencat.cat/ca/ambits/medi-natural/fauna-flora-animals-companyia/dar\\_especies\\_exotiques/dar\\_normativa\\_consideracions\\_generals/cites/](http://agricultura.gencat.cat/ca/ambits/medi-natural/fauna-flora-animals-companyia/dar_especies_exotiques/dar_normativa_consideracions_generals/cites/)



Finally, it must be pointed out that Internet marketing of exotic species and the products derived from them has grown rapidly in recent years and is facilitating this type of trade, both legal and illegal, and making it difficult to control. Moreover, it is sometimes extremely difficult to take measures against websites that are not even managed by Catalan organisations and may be located in any part of the world.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Despite a decline in poaching in recent years, special attention must be paid to the capture of fringillidae and an open discussion must be maintained with songbird enthusiasts, scientists, conservationists and government bodies to prevent poaching or illegal trade.
- ❖ Inform people and raise awareness of the problems associated with exotic species that can be bought from physical or virtual supply points so that the owners act responsibly.
- ❖ Include individual identification and improve documentary control in CITES permits to prevent fraudulent use.
- ❖ Improve and centralise the data collected and published by the units responsible for combating the illegal trade in exotic species and to reinforce coordination between them.
- ❖ Make available the tools required to control the increase in Internet trade in exotic species.
- ❖ Set up reception and recovery centres for exotic fauna that have been abandoned or seized in the course of action to prevent illegal trafficking and sale.

**15.8** By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species.

In Catalonia 1,067 exotic species have been detected after they were released into the natural environment. 58% are plants, 14% birds and 13% land-dwelling invertebrates (the remaining 15% comprise the other groups). Of this total 1,025 live in inland habitats (land and water) and 43 are marine species. Only 109 (10%) of the total have been classified as invasive (only 2 are marine species). 38% of exotic species are not established and only 16% have come to form stable populations. The current status of the remaining 36% is unknown. We only know that they have been introduced in Catalonia and that some might be potentially invasive<sup>672</sup>.

Spain has a catalogue of invasive alien species<sup>673</sup>. There is no specific catalogue for Catalonia but the EXOCAT project has begun to develop an information system for alien species in Catalonia which brings together all existing information on the exotic species present in Catalonia. It will shortly be available for the public to consult on line.

<sup>672</sup> [El projecte Exocat. Informe 2013](#). Andreu, J. i Pino, J. Ministry of Agriculture, Livestock, Fisheries, Food and the Environment and CREA.

<sup>673</sup> *Royal Decree 630/2013, of 2 August, regulating the Spanish catalogue of invasive alien species.*



The Government of Catalonia is taking measures to deal with certain invasive species, including *Carpobrotus* spp, the tiger mosquito, Pomacea snails, the red-eared slider turtle and the American mink. Despite the specific measures taken and the experience accumulated, Catalonia still has no general strategy for preventing, controlling and eradicating invasive species including appropriate management of the impacts of climate change [see SDG #13] and the preservation of natural habitats.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Make exact information on the status and evolution of this problem available at all times by consolidating the information system for alien species in Catalonia.
- ❖ Establish a Catalan strategy to deal with invasive alien species which includes prevention, early warning, population control and eradication.
- ❖ Achieve effective control of species that have a significant impact by applying specific plans and other urgent measures, using the instruments referred to above.

**15.9** By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

After the Government of Catalonia was restored it began to develop initiatives to protect its natural heritage. For example, the Law on Natural Areas was passed in 1985 and the Plan for Areas of Natural Interest, which now also includes Natura 2000 sites was approved in 1992.

Nevertheless, a legal and planning framework for natural heritage and biodiversity still needs to be designed and developed as do certain instruments, such as the catalogue of endangered fauna and a strategy to deal with invasive alien species, among others.

All these instruments need to be integrated in the policies, regulations and plans for other sectors which affect the protection of locations and species, as most negative effects on the natural environment are the result of other sector policies which do not always take sufficient care regarding their environmental impact. As these instruments have yet to be approved and implemented we should take advantage of the opportunity to make them transversal.

For this integration of policies to be effective a modern, effective system of governance is needed. Processes for training and integrating those who are to develop and implement them need to be developed [see SDG #4]. It is essential to eliminate incentives that are prejudicial to the natural heritage and to have adequate funding. For this purpose innovative mechanisms are appearing which recognise the services of ecosystems that need to be studied and developed. Research into the state of biodiversity and the regular publication of trends is another key element which will provide the information needed to make the right decisions, while publicity and awareness raising are essential to gain greater social support.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Establish a modern, effective system of governance, so that the necessary legal and planning framework can be developed, integrating it in the policies, regulations and

plans of other sectors which affect the protection of natural areas and species (regional and hydrological planning, policies on agriculture, hunting and marine and inland fishing, transport and mobility, industry, energy and tourism, etc.).

- ❖ Incorporate the role of biodiversity in the fight against climate change, integrating the goals of conserving biodiversity where it is most vulnerable in its mechanisms for adapting to and mitigating climate change and promoting the management of natural systems as a tool for mitigation, following UICN guidelines on nature-based solutions.

## MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 15

The CADS considers that the main challenges facing Catalonia with respect to SDG 15 are to:

- ❖ Have complete up-to-date information on the state of biodiversity (maps and databases) in inland, coastal and marine areas.
- ❖ Develop Catalonia's green infrastructure and incorporate ecological connectivity and ecosystem services as a central feature of spatial and town planning, thus reinforcing the effectiveness of policies designed to protect and manage our natural heritage.
- ❖ To ensure active management of natural areas that are already protected with appropriate tools and resources to make this possible and, where necessary, increase the number with the highest level of protection.
- ❖ Achieve favourable conservation status for habitats, flora and fauna, via the approval and implementation of the necessary instruments and measures (such as the catalogues of endangered habitats and fauna, recovery plans, and a strategy for flora conservation).
- ❖ Put in place a strategic approach for responding to the introduction and spread of invasive alien species, especially in a context of climate change, which favours their arrival and progressive expansion in Catalonia.
- ❖ Establish a modern, effective system of governance that enables the development of a legal and planning framework regarding natural heritage and biodiversity in line with current scientific knowledge and criteria for conserving and managing biodiversity on a worldwide scale.
- ❖ Have information and maps on the quality and state of soils in Catalonia and incorporate this information effectively in regional and sector planning.
- ❖ Reduce soil loss and erosion in Catalonia, thus reducing the risk of desertification, especially in view of the scenario of climate change.
- ❖ Continue to reduce levels of poaching in Catalonia while maintaining an open discussion with interested parties.
- ❖ Improve the system for controlling illegal trafficking in species to respond to the problems detected and to new challenges, such as Internet trading and the lack of



reception centres for abandoned exotic fauna, and to increase coordination between the units dealing with these matters.





## **16 PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS**

### **UNITED NATIONS 2030 AGENDA GOALS**

- 16.1** Significantly reduce all forms of violence and related death rates everywhere.
- 16.2** End abuse, exploitation, trafficking and all forms of violence against and torture of children.
- 16.3** Promote the rule of law at the national and international levels and ensure equal access to justice for all.
- 16.4** By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime.
- 16.5** Substantially reduce corruption and bribery in all their forms.
- 16.6** Develop effective, accountable and transparent institutions at all levels.
- 16.7** Ensure responsive, inclusive, participatory and representative decision-making at all levels.
- 16.8** Broaden and strengthen the participation of developing countries in the institutions of global governance.
- 16.9** By 2030, provide legal identity for all, including birth registration.
- 16.10** Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.

## INTERNATIONAL CONTEXT

For the last 10 years levels of world peace have been deteriorating, mainly because of the intensification of conflicts in the Middle East and North Africa, according to the 2016 Global Peace Index<sup>674</sup>. The report points out that the difference between more and less peaceful countries is constantly growing and the number of refugees and displaced persons has increased dramatically in the last decade, rising to 60 million between 2007 and 2015.

Regarding people's sensation of personal safety, the residents of Latin America and the Caribbean are those who feel least safe in their communities according to the 2015 Gallup Index<sup>675</sup>. The countries with the highest safety indexes are Singapore, Uzbekistan, Hong Kong, Indonesia, Norway and Canada. Spain is seventeenth in the Gallup ranking.

The Global Slavery Index<sup>676</sup>, drawn up by the Walk Free Foundation, indicates that at least 45.8 million people currently live in modern forms of slavery linked to human trafficking, forced labour, debt bondage, commercial sexual exploitation and forced or servile marriage. Modern slavery affects the 167 countries covered by the study, 58% of these slaves being concentrated in five countries: India (18.35 million), China (3.39 million), Pakistan (2.13 million), Bangladesh (1.53 million) and Uzbekistan (1.23 million).

The Arms Trade Treaty (ATT) came into force on 24 December 2014. The ATT is the first legally binding international agreement to establish criteria to regulate trade in conventional arms and prevent illicit arms dealing. It imposes a series of obligations on signatories regarding the control of transfers of arms: countries are obliged to establish and maintain an effective system to control the transfer of conventional weapons, ban certain transfers of weapons and not authorise certain arms exports.

According to the Stockholm International Peace Research Institute (SIPRI), military spending in the world in 2015 reached 1,676 billion dollars, 1% more than the previous year. Although the increase is small in percentage terms, it is the first rise in world military spending since 2011, which accounts for 2.3% of world GDP. According to the SIPRI report<sup>677</sup>, with only 10% of this expenditure most of the 2030 Sustainable Development Goals approved by the UN could be attained, provided that other obstacles such as corruption could be overcome.

According to SIPRI data the volume of arms transfers in the world has grown continuously since 2004, with a 14% increase between 2011 and 2015. The United States and Russia continue to be the largest producers. United States arms are sold to 96 countries, the largest customers being Saudi Arabia, the United Arab Emirates and Turkey. Russia sells to 50 countries, its largest customers being India, China and Vietnam.

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<sup>674</sup> [2016 Global Peace Index](#). Institute for Economics & Peace.

<sup>675</sup> *Global Law and Order 2015*. Gallup.

<sup>676</sup> [2016 Global Slavery Index](#). Walk Free Foundation.

<sup>677</sup> [Military versus social expenditure: the opportunity cost of World military spending](#). Stockholm International Peace Research Institute (SIPRI, 2016).

It is interesting to note that the evidence shows that peace negotiations influenced by women are more likely to lead to a lasting agreement. Although the participation of women in peace processes has increased, a study of 31 major peace processes between 1992 and 2011 reveals that only 9% of the negotiators were women. Only 3% of those involved in United Nations military missions were women<sup>678</sup>.

The United Nations Convention against Corruption (UNCAC) was adopted on 31 October 2003. UNCAC is the first international treaty devoted entirely to the struggle against corruption throughout the world and currently has 178 signatories. As pointed out in the preamble to the UNCAC, corruption is a blight that undermines the institutions and values of democracy, ethics and justice, compromising sustainable development and the rule of law.

## EUROPEAN CONTEXT

Europe continues to be the most peaceful region according to the 2016 Global Peace Index but its ranking has worsened as a consequence of the terrorist attacks committed in Paris and Brussels in 2015, escalating violence and instability in Turkey and the deterioration of its relations with its neighbours. On the other hand, persecution, armed conflict and poverty forced a million people to flee to Europe in 2015, according to data from the International Organization for Migration<sup>679</sup>.

With regard to forms of direct violence, between 2008 and 2013 a reduction can be seen in cases of homicide and aggression recorded by the police in European Union member states, while there was an increase in the number of cases of rape<sup>680</sup>. During this period the number of cases of intentional homicide fell by 21%, whereas the number of rape cases rose by 16%. The prevalence of violence against women is still alarmingly high. A third of women in the European Union have experienced physical or sexual violence<sup>681</sup>.

The first European Commission Report on the progress made in the fight against trafficking in human beings (2016)<sup>682</sup> gives the number of men, women and children who are victims of human trafficking as 15,846. Trafficking with a view to sexual exploitation is the most widespread form, accounting for 67% of the victims recorded, followed by forced labour (21%). Over three quarters (76%) of recorded victims were women, while at least 15% were minors. The Commission's report warns of the marked increase in the number of children who fall victim to traffickers and the number of disabled and gypsy victims.

The Global Slavery Index, drawn up by the Walk Free Foundation, gives figures that are even more alarming: it is estimated that 1.2 million people in Europe currently live in modern forms of slavery linked to human trafficking, forced labour, debt bondage, commercial sexual exploitation and forced or servile marriage.

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<sup>678</sup> [\*Preventing Conflict, Transforming Justice, Securing Peace: A Global Study on the Implementation of UN Security Council resolution 1325\*](#). UN Women (2015).

<sup>679</sup> [\*Press release 22/12/2015\*](#). International Organization for Migration.

<sup>680</sup> [\*Crime and criminal justice statistics\*](#). Eurostat (May 2016).

<sup>681</sup> [\*Report on equality between women and men 2014\*](#). European Commission.

<sup>682</sup> [\*Report on the progress made in the fight against trafficking in human beings 2016\*](#). European Commission.



In regard to the participation and representation of women, while some state parliaments and governments are close to achieving gender parity, women still represent less than one third of ministers and members of parliament in the majority of Member States<sup>683</sup>.

The first EU Anti-Corruption Report (2014)<sup>684</sup> reveals that corruption continues to affect all EU member states, although there are differences between them regarding its nature and scope. Corruption costs the European economy 120,000 million euros every year. The report shows that, although member states have developed anti-corruption measures in recent years, the results are still unsatisfactory.

According to the results of the Eurobarometer (2013), 76% of Europeans consider that corruption is a generalised disease in their country. The countries in which most people have expressed this opinion are Greece (99%), Italy (97%), Lithuania, Spain and the Czech Republic (95% in each).

## THE CATALAN CONTEXT: DIAGNOSIS AND CHALLENGES

The main challenges for Catalonia with regard to this SDG are therefore detailed below, structured in line with the 2030 Agenda targets.

### 16.1 Significantly reduce all forms of violence and related death rates everywhere.

According to the 2015 report on security in Catalonia<sup>685</sup>, crime known to the police in Catalonia is decreasing. This tendency is confirmed by the results of the 2013 Survey of Public Security<sup>686</sup>, which indicate an improvement in the public perception of security.

Over the last 7 years there has been a falling trend in both homicides and attempted homicides. Figures for 2015 are 44% lower than those for 2009. The rate of homicides per 100,000 population in Catalonia is 0.57, lower than that for Spain (0.65) and Europe as a whole (EU28), where it is 1.02. Luxembourg is the only European country with a lower rate than Catalonia (0.19)<sup>687</sup>.

Although Catalonia has a high index for security, there are still challenges for us in this area, such as [eradicating gender violence \[see SDG #5\]](#). In the period 2009-2015 55% of the victims of murders or homicides were women, mostly in cases of domestic or gender violence. Sixty-two per cent were Spanish nationals while the remainder came from a wide range of nationalities. From 2008 to 13 June 2016, 85 women were fatal victims of gender violence inflicted by their partners in Catalonia.

The annual average for sexual aggression<sup>688</sup> between 2009 and 2014 was 712 cases, 96% of the victims being women. It should be pointed out that, according to crime

<sup>683</sup> [Report on equality between women and men 2014](#). European Commission.

<sup>684</sup> [EU Anti-Corruption Report 2014](#). European Commission.

<sup>685</sup> [Informe 2015 sobre la seguretat a Catalunya](#). Catalonia Ministry of Home Affairs.

<sup>686</sup> [Enquesta de Seguretat Pública \(Public Security Survey\), 2013](#). Catalonia Ministry of Home Affairs.

<sup>687</sup> [Balanç de seguretat i activitat policial 2015](#). Catalan Police Force.

<sup>688</sup> [Balanç de seguretat i activitat policial 2015](#). Catalan Police Force.

figures for 2015, offences against sexual freedom and integrity are one of the few categories to have increased: sexual aggression increased by 2.26%, while sexual abuse rose by 7.12. It is also believed that there may be a high percentage of hidden cases of this type of offence and there is therefore a need to raise awareness and encourage the public to report these cases.

The risks associated with the use of new information and communication technologies must be considered in relation to gender violence. These technologies may enable perpetrators to harass victims in a more omnipresent and dangerous way, with a greater risk of overstepping boundaries due to the lack of direct contact with the victim and thus reduced awareness of the harm caused.

It is therefore necessary to develop and disseminate understanding of the deep roots of this social blight and to make progress on moving away from traditionally patriarchal social structures towards a new, freer and more egalitarian social model in terms of gender. The training and coordination of all those involved in tackling this issue is also necessary, together with raising awareness and involving the wider society via the media, the Internet and social networks.

Other forms of direct or symbolic violence include [violent extremism](#) and [crime based on hate and discrimination](#). These are more important qualitatively than quantitatively, as they endanger our model of coexistence and social cohesion. In connection with violent extremism we find crimes associated with a particular ideology (anarchist, jihadist or extreme right-wing).

In crimes based on hate and discrimination, the victim, the place or the object attacked is chosen because they belong (really or supposedly) to a group defined by its race, national or ethnic origin, language, religion, physical or mental disability, sexual orientation or other similar factors. Of incidents reported in 2015, the largest number are related to ethnic or racial origin (121 cases), followed by political orientation (115) and homophobia (69). However, it is considered that many cases are not reported and campaigns have thus been launched with a view to encouraging the public to report cases related to discrimination.<sup>689</sup>

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ [Eradicate gender violence](#). Co-education, research and the dissemination of knowledge of this problem must be fostered, together with the training and coordination of all those involved in tackling it.
- ❖ [Reinforce the prevention of violent extremism and crimes rooted in hatred and discrimination](#), ensuring the protection of the most vulnerable sectors of society.

## **16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children.**

In Catalonia there are 4,736 cases of children and adolescents (0 to 17 years old) who are separated from their families as a protective measure because of [child abuse](#),

<sup>689</sup> [‘T’escoltem’ \(We listen to you\) campaign](#). Government of Catalonia.

according to data for the third quarter of 2015.<sup>690</sup> The most frequent type of mistreatment is neglect, which accounts for 71.6% of cases, followed by psychological and emotional abuse (12.2%), physical mistreatment (5.4%), pre-natal mistreatment (4.2%), abandonment (4.2%), sexual abuse (1.4%) and forced labour, criminal or sexual exploitation (0.6%). In recent years an average of over 800 new cases of child abuse have been detected annually<sup>691</sup>. However, the phenomenon is only visible to a very limited extent.

Sexual crimes against minors are also a phenomenon which is little known. In 2015, 423 cases of sexual abuse were recorded (8.46% more than in 2014) and 197 cases of sexual aggression (7.07% higher than 2014)<sup>692</sup>. It is important to raise public awareness of this type of violence against children and draw attention to the phenomenon, as has been done with gender violence, with a view to analysing this social blight and taking appropriate measures to deal with it.

There are also forms of violence between peers, such as bullying and cyberbullying, which need to be prevented. According to the Save the Children report *Yo a eso no juego*<sup>693</sup>, 8.8% of the students interviewed in Catalonia consider that they have experienced bullying in the last two months and 6.8% consider themselves victims of cyberbullying. Six point five per cent of students admit that they have bullied someone, while 4.2% admit that they have done so via the Internet or social networks.

Children and young people are the most frequent victims of the new crimes that have proliferated via the Internet in recent years. To tackle this problem, the Catalan police force (Mossos d'Esquadra) have launched the project 'Internet Segura de tu a tu', with a view to raising awareness of the problems and risks associated with the Internet and creating healthy habits in the use of the Internet and social networks. To achieve this, the involvement of the three fundamental groups that play a part in the overall education of minors and young people has been necessary: the students themselves, teachers and parents.

With regard to [torture](#), the Catalan Ombudsman<sup>694</sup> has detected a lack of knowledge of the Istanbul Protocol, the international manual approved by the Office of the United Nations High Commissioner for Human Rights for investigating and documenting torture and other forms of mistreatment. As this protocol constitutes a very useful guide to scientifically documenting reports of torture and mistreatment, professionals working in this area (especially health professionals) need to be familiar with it.

With regard to the [exploitation and trafficking of human beings](#), it is difficult to determine the number of victims. The cases reported to the police, arrests and identifications do not begin to expose the extent of this hidden world, but they do help us to guess at it.

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<sup>690</sup> [Dades de maltractament infantil \(child abuse statistics\), 2015](#). Ministry of Labour, Social Affairs and Families, Government of Catalonia.

<sup>691</sup> [Informe sobre els drets de l'infant 2014](#). Catalan Ombudsman.

<sup>692</sup> [Balanc de seguretat i activitat policial 2015](#). Catalan Police Force

<sup>693</sup> [Yo a eso no juego](#). Save the Children.

<sup>694</sup> [Informe anual del mecanisme català per a la prevenció de la tortura 2015](#). Catalan Ombudsman.

Reports received by the Catalan Police Force from January 2010 to September 2013 totalled 282 cases of trafficking for sexual exploitation and 342 for forced labour<sup>695</sup>.

The Global Slavery Index, drawn up by the Walk Free Foundation<sup>696</sup>, gives figures that are even more alarming: it is estimated that 8,400 people in Spain currently live in modern forms of slavery linked to human trafficking, forced labour, debt bondage, commercial sexual exploitation and forced or servile marriage.

The protocol for protecting the victims of trafficking human beings in Catalonia, issued on 17 October 2013, establishes guidelines for detecting, identifying, assisting and protecting the victims and coordinating the response of the Catalan institutions involved. The Catalan Police Force are doing valuable work in this area both in policing and in ensuring that social assistance is provided, by fostering cooperation with organisations that pursue the well-being of these victims.

The identification of the victims and their removal from the organisations responsible for exploiting them are the priority target in police investigations. However, it is also important to provide comprehensive support, giving victims personal assistance after they have been freed.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Publicise and combat situations in which minors are the victims of sexual crimes, so that the most appropriate measures can be taken.
- ❖ Prevent the mistreatment of children and peer violence before they occur, via emotional education and professional training (particularly in the educational community).
- ❖ Promote the training and specialisation of the agents involved in tackling cyberbullying and coordination, the exchange of information and the adoption of appropriate measures for intervention.
- ❖ Disseminate and promote training in the Istanbul Protocol, approved by the Office of the United Nations High Commissioner for Human Rights.
- ❖ Reduce the number of cases of human trafficking and exploitation, reinforcing their detection and ensuring that victims receive comprehensive attention and support.

### **16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all.**

Catalonia is governed by the **rule of law** and all its citizens and public bodies are therefore subject to legislation. The rule of law also implies the equality of all in the eyes of the law, the separation of powers, the prohibition of the arbitrary use of authority,

<sup>695</sup> Sellart, Xavier (2013): 2nd Seminar on organised crime (2013: Mollet del Vallès). [\*La situació del tràfic d'éssers humans a Catalunya\*](#). Mollet del Vallès, Institute for Public Security of Catalonia (ISPC).

<sup>696</sup> [\*2016 Global Slavery Index\*](#). Walk Free Foundation.

judicial certainty, an independent and impartial judiciary, and respect for and the protection of fundamental rights.

In Catalonia, [to ensure equal access to justice](#), the right to free legal assistance is recognised for those who lack resources to engage in litigation, as established in *Law 1/1996, of 10 January, on free legal assistance*. The recognition of this right includes, among other benefits, the appointment of a lawyer and legal representation in court, free legal advice and guidance before a court case and mediation in family matters. For example, in 2014 lawyers providing free legal aid acted on 300,912 occasions, at a cost of 51.5 million euros. In the same year legal representation in court was provided on 162,057 occasions, at a cost of 5.4 million euros<sup>697</sup>.

To make the entitlement to legal protection effective the Ministry of Justice provides translation and interpreting services for judicial bodies and Prosecutor's Offices in Catalonia. With a view to eliminating barriers to communication and facilitating access to justice on equal terms for those with hearing difficulties, a sign-language service is also available for legal procedures.

In connection with the rights of persons arrested by the police, the Catalan Ombudsman<sup>698</sup> has emphasised the importance of guaranteeing legal assistance in police stations before the police question suspects and the availability of an interpreter if those under arrest cannot speak Catalan or Spanish. Nevertheless, the European Directive on the rights of those arrested has not been correctly transposed, infringing their right to have access to the essential elements to challenge the legality of the arrest.

In connection with foreigners whose administrative situation is irregular held in internment centres for foreigners, the Ombudsman<sup>699</sup> has criticised the lack of official information regarding numbers held, expulsions, complaints, etc., as well as unsatisfactory physical conditions and insufficient social support, especially the lack of legal assistance.

Royal Decree Law 1/2015, of 27 February, suppressed legal fees for private individuals in all courts and jurisdictions, previously imposed by the Spanish government under Law 10/2012, of 20 November. In Catalonia there were numerous demands by lawyers, trade unions, and consumer and user associations for the suppression of these charges, which were considered a serious infringement of people's right to have access to justice.

It is worthy of note that Catalonia is in the process of implementing a judicial office and introducing new information and communication technologies with a view to modernising justice.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ [Guarantee legal assistance, the protection of fundamental rights and access to justice for all, especially the most vulnerable groups, such as foreigners whose administrative status is irregular.](#)

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<sup>697</sup> [Assistència jurídica gratuïta 2014](#). Ministry of Justice, Government of Catalonia.

<sup>698</sup> [Informe anual del mecanisme català per a la prevenció de la tortura 2015](#). Catalan Ombudsman.

<sup>699</sup> [Resolució sobre el centre d'internament d'estrangers de 28 d'octubre de 2015](#). Catalan Ombudsman.

- ❖ Ensure compliance with the European Directive on the rights of persons under arrest.
- ❖ Accelerate the modernisation of the administration of justice in order to increase the transparency, efficiency and effectiveness of the judicial system.

**16.4** By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime.

In connection with the [arms trade](#), Catalonia has given substantial social and institutional support to the process leading to the signing of the Arms Trade Treaty, which came into force on 24 December 2014. Via the 'Control Arms' campaign, promoted by FundiPau (Fundació per la Pau), Intermón Oxfam and Amnesty International, attention was drawn to the problem and a high level of social and institutional support was given: local councils, the Catalan Parliament, NGOs, leading figures in culture and communication, etc. all showed their support for regulating the arms trade.

The Catalan Parliament issued a declaration of support for the Arms Trade Treaty<sup>700</sup>, in which it commented that the absence of a binding international agreement regulating the transfer of conventional arms encouraged the intensification of conflict, the displacement of populations, organised crime and terrorism, to the detriment of peace, reconciliation, security, stability, and the sustainable economic and social development of many peoples. In this declaration the Catalan Parliament stated that the Arms Trade Treaty should do the following:

- a) Refuse authorisation for transfers of arms when there is a substantial risk that they may be used to commit, or enable others to commit, serious violations of human rights and international humanitarian law (the 'golden rule').
- b) Allow exhaustive monitoring of all transfers, including controls on arms, munitions and related material.
- c) Set out solid regulations for the concession of licences, transparency and the presentation of reports.

[Organised crime](#) is a first-level threat to people's security and freedom and constitutes a direct attack on the basic principles of countries governed by the rule of law, their structures and their business and financial fabric. A wide range of activities are conducted by those involved in organised crime. They include the trafficking and exploitation of human beings, illicit arms dealing and the use of opaque financial structures for money laundering. It is estimated that over 3,000 criminal groups and organisations exist in Europe, 400 of which operate to some extent in Catalonia<sup>701</sup>. The Catalan Police disband approximately 120 such organisations each year but they have considerable powers of regeneration.

<sup>700</sup> [Declaració del Parlament de Catalunya de suport al Tractat sobre comerç d'armes](#) (13 June 2012). Parliament of Catalonia.

<sup>701</sup> Data from Serious and Organised Crime Threat Assessment. EUROPOL.



The Catalan Police deal with these threats by means of a transversal approach based on networking and developing a flexible, functional organisational structure. Decision-making is based on intelligence drawn up with information from operational units, while a communication channel with other police forces is kept open. The presence of the Catalan Police Force in the Intelligence Centre against Terrorism and Organised Crime (CITCO), and the exchange of information with other police forces and security agencies thus constitutes a step forward in the fight against organised crime.

The economic power of top-flight criminal organisations means that they have at their disposal all the technology they need to extend their activities to networks and even the Deep Web. In this scenario arms dealers enjoy the anonymity offered by this medium and the difficulty of carrying out investigations.

It has also been found that there are alliances between these criminal organisations and synergies with terrorist groups on an international level. It is therefore indispensable to strengthen links with other police organisations, both regionally and internationally, and to work with institutions tackling this phenomenon. The exchange of information between security forces and those working in the academic world or journalism is also useful.

One of the latest initiatives of the Catalan Police Force is the launch on its website of a section devoted to the identification and return to their rightful owners of stolen items which have been recovered as a result of investigations into and the subsequent disbanding of criminal gangs in Catalonia.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Increase checks to prevent illegal arms dealing in Catalonia.
- ❖ Guarantee maximum cooperation between agencies to tackle the threat of terrorism and organised crime.
- ❖ Intensify cooperation with regional, national and international security organisations.
- ❖ Promote the exchange of information, experience and good practice between security services in countries with democratic systems based on the rule of law.

#### **16.5 Substantially reduce corruption and bribery in all their forms.**

The Government of Catalonia recently approved a code of conduct for senior post holders and managerial staff in its administration and in organisations belonging to its public sector, together with other measures regarding transparency, interest groups and public ethics. This code of conduct is an important link in the system of institutional integrity that the Catalan government hopes to develop to combat corruption. It is based on action in two areas: exemplary conduct in the public interest and maximum transparency and accountability in public decision-making.

The regulations include a stricter and more precise definition of conflict of interest; the obligation to refrain from accepting gifts or accept payment for travel and accommodation by private companies or individuals; the presentation on appointment



and leaving office of a statement of assets; publication in the official diary of meetings with interest groups (meetings cannot be held if the group is not listed on the Register).

The code also regulates the discharge of duties in the public service and key issues such as public records management; efficient and responsible use of resources; cooperation with the media; respect for public service employees; a record of cooperation with other institutions and raising public awareness of the code.

The code sets up an advisory committee on public ethics, which will respond to queries, comments and suggestions, and will receive complaints about the conduct of senior post holders and any irregular situations detected. It will also inform and provide guidance for responsible bodies regarding situations that may justify initiating procedures for sanctions.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Take effective measures to punish corruption.
- ❖ Implement exhaustive regulation of the financing of political parties, and establish obligations for regular accountability which is strictly monitored.
- ❖ Encourage exemplary ethical conduct among those holding public office, politicians, entrepreneurs and the public.
- ❖ Consolidate a social culture that completely rejects any form of corruption.
- ❖ Promote the concept of fiscal reputation and for this to be a mark of prestige for companies.
- ❖ Improve the judicial system so that it responds quickly and effectively to corrupt conduct.

#### **16.6** Develop effective, accountable and transparent institutions at all levels.

Seventy-four point eight per cent of respondents to the 2014 Barometer survey carried out by the Catalan Anti-Fraud Office believe that there is insufficient transparency in public decision-making processes and 65.5% consider that Catalonia's public authorities are not very transparent or not transparent at all.

Given the low levels of public trust in political institutions and bodies, on 6 and 22 February 2013 two summits on regenerating democracy were held, attended by the heads of the Catalan Parliament, the Public Prosecution Service, the Catalan Ombudsman, the Public Audit Office and the Catalan Anti-Fraud Office.

Following these summits, the President of the Government of Catalonia presented a document containing 51 proposals and thoughts on transparency and regenerating democracy, included in the Government of Catalonia's 2015-2017 Strategic Plan for transparency policies<sup>702</sup>.

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<sup>702</sup> [http://transparencia.gencat.cat/web/.content/docs/Pla-estrategic\\_vdef.pdf](http://transparencia.gencat.cat/web/.content/docs/Pla-estrategic_vdef.pdf)

The document set out specific measures related to transparency which have been implemented or set in motion, including the following:

- Creation of a transparency portal<sup>703</sup>. This portal was awarded maximum points in the 2014 index published by Transparency International. This index measures and publishes information on the level of transparency in the information issued by the governments of Spain's autonomous communities. Catalonia moved up from tenth place in the ranking in 2012 (with 78.8 points) to head the index in 2014 (with 100 points out of 100).
- Approval of *Law 19/2014, of 29 December, on transparency, access to public information and good governance*.

The new legal framework and transparency portal (together with other open data sites<sup>704</sup>) represents a step towards a new culture of transparency which must permeate all public services.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Raise awareness and inform the public of the opportunities and guarantees provided by the recently approved legislation on transparency.
- ❖ Publish clear, structured, comprehensible, reusable and accessible information and to improve procedures for reporting complaints.

#### **16.7** Ensure responsive, inclusive, participatory and representative decision-making at all levels.

One of the indicators proposed by the United Nations with regard to this target is the distribution of employees in public institutions compared to the country in general, i.e., the similarity between representatives and the represented according to parameters such as gender, age, disability and population group.

The **number of women** in Catalonia's public institutions is tending to increase, but does not reach 50% in most institutions. The number of women deputies in the Catalan Parliament has increased from 7 in 1980 (5.2% of seats) to 57 in the current legislature (42.2%). In town councils the number of female councillors has increased significantly but there are still worryingly few female mayors, with 174 compared to 772 male mayors<sup>705</sup>.

The preamble to *Law 17/2015, on the effective equality of men and women*, states that 'the equal representation and involvement of men and women in all areas of decision-making is essential to a truly democratic country. Catalonia's public authorities must therefore take the measures needed and adopt appropriate strategies to ensure this is

<sup>703</sup> <http://transparencia.gencat.cat>

<sup>704</sup> [Dadesobertes.gencat.cat](http://dadesobertes.gencat.cat)

<sup>705</sup> [Indicador d'Igualtat de Gènere de Catalunya \(Gender equality indicator for Catalonia\) 2015. Observatory for Women, Business and Economics of the Barcelona Chamber of Commerce.](#)

the case'. The law establishes that neither gender should have more than 60% or less than 40% representation in any area, and the target must be equal representation.

The rights of the LGBTI community are reflected in *Law 11/2014, of 10 October, on guaranteeing the rights of lesbian, gay, bisexual, transgender and intersexual individuals and eradicating homophobia, biphobia and transphobia*. This law establishes that public authorities must protect the rights of LGBTI persons to participate in society, be visible and be represented, together with their specific situations and needs in both the public and private spheres.

With regard to [age](#), it is necessary to ensure that all age groups participate and are represented in society and that the interests of certain age groups (such as the elderly) are not under-represented.

With regard to [people with disabilities](#), in 2011 the UN Committee on the Rights of Persons with Disabilities recommended that electoral rules be amended to protect disabled people's right to vote. The Catalan Ombudsman recommended a review and reform of existing legislation to ensure everyone has the right to vote and participate in public life, restricting any limits on rights applied to persons recognised as disabled in line with the need to protect them and with the minimum possible effect on the limited right, as established in a number of Supreme Court rulings.

[Public participation and involvement](#) must also be taken into account as a mechanism for allowing people and civil society to take part in public decision-making processes in a transparent and orderly manner. New public participation mechanisms are appearing throughout Catalonia to enable citizens to become involved in its governance<sup>706</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ [Guarantee the equal representation and involvement of men and women in all areas of decision-making and the rights of LGBTI persons to participate in society, be visible and be represented.](#)
- ❖ [Guarantee the rights of disabled people to vote and participate in political and public life \(as recognised in the International Convention on the Rights of Persons with Disabilities\).](#)
- ❖ [Foster change in government and public culture to encourage citizens to become as involved as possible in public decision-making, thereby strengthening our democratic system.](#)
- ❖ [Ensure that decision-making is as inclusive as possible and is responsive to the needs of the people.](#)

## **16.8** Broaden and strengthen the participation of developing countries in the institutions of global governance.

<sup>706</sup> [Participa gencat](#) portal and the [decidim.barcelona](#)

Catalonia is a country traditionally committed to the construction of a juster and more peaceful world order. Catalonia has contributed actively to discussions on reforming the multilateral system and has pushed for the involvement of sub-state bodies in global governance via organisations and networks of regions, such as the Network of Regional Governments for Sustainable Development (nrg4SD) and the United Regions Organisation (ORU-FOGAR).

Catalonia has also cooperated in indirectly strengthening the institutional capacity of certain developing countries, for example via the subsidies of the Catalan Agency for Development Cooperation (ACCD). In recent years the ACCD's subsidies have provided indirect support for groups in developing countries (peasant movements, women's organisations) to make their presence felt in international organisations.

For example, the ACCD has provided support by granting subsidies to:

- Peasant movements in Mali and Mozambique with the aim of, on the one hand, strengthening the African peasant movement linked to the international Via Campesina movement and its strategies to restore food sovereignty to villages and communities and, on the other, to help them participate in the summits and meetings of multilateral organisations and regional and/or international organisations, networks and bodies.
- Organisations of African women taking part in the World March of Women with the aim of supporting the work of the WMW across sub-Saharan Africa, helping the development of new coordination mechanisms and assisting these organisations to communicate and network on an international level and be more effective.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Guarantee support for the most vulnerable actors in developing countries, such as peasant movements and women's organisations, so that their presence is felt more in international organisations.
- ❖ Strengthen the institutional capacity of developing countries using indirect means such as ACCD subsidies.
- ❖ Consolidate Catalonia's international role and ensure its effective participation in the institutions of global governance, thereby increasing its powers of influence to achieve a more just and democratic world.

#### **16.9** By 2030, provide legal identity for all, including birth registration.

Under Catalan law, people acquire legal personality at birth, in line with article 7 of the Convention on the Rights of the Child, adopted by the UN General Assembly on 20 November 1989 and ratified by Spain on 30 November 1990.

In Catalonia, birth is the first life event that must, by law, be recorded on the Civil Register. The record includes the date, time and place of birth, the sex of the child and the names of the parents. The birth must be registered within the first eight days of the child's life, although this may be extended to 30 days in exceptional circumstances.

Under Law 19/2015, of 13 July, citizens can register the birth of a child electronically from the hospital. This measure, which is being progressively introduced in public hospitals, will help people with the process of registering births.

Finally, the legal identity of transsexual minors has become an issue recently. Following a number of complaints, the Catalan Ombudsman has recommended that the Ministry of Education ensure that the sexual identity of transsexual students is respected, with schools addressing transsexual students in accordance with their appearance and gender identity, even if the name used is not that which appears on their National Identity Document<sup>707</sup>.

The main challenges facing Catalonia with regard to this Agenda target are to:

- ❖ Roll out electronic birth registration to all health centres in Catalonia.
- ❖ Articulate the measures needed to protect the gender identity of transsexual minors.

#### **16.10** Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.

*Law 19/2014, of 29 December, on transparency, access to public information and good governance* defines the right to [access public information](#) as a legal right held by all individuals and legal entities. This right is not subject to the existence of a personal interest and may be exercised without giving a reason by any person over the age of 16.

According to this law, the right to access public information covers all information prepared by the government and any information it holds as a result of its activities or in the exercise of its duties. This right is in addition to the information that members of the public may obtain under transparency rules.

A Committee for the Guarantee of the Right of Access to Public Information was created to ensure that this right can be effectively exercised. It is an independent, professional body responsible for handling complaints and determining the basis for any limits that may impede or restrict the right to access information.

With regard to the [protection of basic freedoms](#), the Parliament of Catalonia<sup>708</sup> has declared that the internment centres for foreign nationals set up by the Spanish government constitute a clear breach of the basic right to dignity. It also declared that the systematic internment for preventive purposes of foreign nationals whose legal status is irregular but who have committed no crime is contrary to the right to liberty and security of person enshrined in article 3 of the Universal Declaration of Human Rights and article 9 of the International Covenant on Civil and Political Rights. The Parliament of Catalonia has therefore demanded that the Spanish Government progressively close the internment centres for foreign nationals in the shortest time possible.

The main challenges facing Catalonia with regard to this Agenda target are to:

<sup>707</sup> <http://www.sindic.cat/ca/page.asp?id=53&ui=4112> (May 2016).

<sup>708</sup> Parliament of Catalonia Official Gazette no. 662 of 29 July 2015. [Resolution 1156/X](#) of the Parliament of Catalonia, approving the conclusions of the Report of the Working Group to Review the Model of Internment Centres for Foreign Nationals.



- ❖ Raise public awareness of citizens' rights to access public information. This information must also be provided in a form that is clear, structured, comprehensible, reusable and accessible.
- ❖ Guarantee the protection of fundamental rights and freedoms for all, especially the most vulnerable groups, such as foreigners whose administrative status is irregular.

#### MAIN CHALLENGES FOR CATALONIA LINKED TO SDG 16

The CADS considers that the main challenges facing Catalonia with respect to SDG 16 are to:

- ❖ Eradicate gender violence in all its forms.
- ❖ Reduce the number of cases of human trafficking and exploitation, reinforcing their detection and ensuring that victims receive comprehensive attention and support.
- ❖ Intensify cooperation with regional, national and international security organisations to tackle the threat of terrorism and organised crime.
- ❖ Consolidate a robust system of institutional integrity and a social culture that completely rejects any form of corruption.
- ❖ Guarantee the equal representation and involvement of men and women in all areas of decision-making.
- ❖ To encourage citizens to participate in public decision-making and subsequent accountability processes.

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- Josep A. Pujante Conesa, head of International Relations and Cooperation Area, Catalonia Ministry of Health.
- Samuel Reyes, directors' assistant, Catalan Water Agency.
- Sergi Rovira, sustainability consultant.
- Sergi Sabater, professor of Ecology at the University of Girona (UdG) and coordinator of the Research Group on the Functioning and Conservation of Continental Aquatic Systems (GREFCO) at the Catalan Institute for Water Research (ICRA).
- Lluís Sala, head of supply and reuse, Consorci Costa Brava.
- Eduard Sallent i Peña, head of the General Committee on Institutional Relations, Prevention and Mediation of the Directorate-General for Police, Government of Catalonia.

- Sergio Sastre, environmental consultant at ENT environment and management.
- Jordi Sunyer, head of the Child Health Programme, ISGlobal.
- Carme Trilla, president of the Habitat III Foundation.
- Eduard Vallory, President of the UNESCO Centre of Catalonia.

## **Institutions**

- Catalan Water Agency (ACA).
- Catalan Agency for Development Cooperation (ACCD).
- Waste Agency of Catalonia (ARC).
- Catalan Association of Public Universities (ACUP).
- Nature Protection Council.
- ConservacióCat.
- Directorate-General for Cooperation, Catalonia Ministry of Transparency and Foreign and Institutional Relations and Affairs.
- Directorate-General for Rural Development, Catalonia Ministry of Agriculture, Livestock, Fisheries and Food.
- Directorate-General for Fisheries and Maritime Affairs, Catalonia Ministry of Agriculture, Livestock, Fisheries and Food.
- Directorate-General for Forests, Catalonia Ministry of Agriculture, Livestock, Fisheries and Food.
- Directorate-General for Police, Catalonia Ministry of Home Affairs.
- Directorate-General for Environmental Quality and Climate Change, Catalonia Ministry of Territory and Sustainability.
- Directorate-General for Environmental Policy and the Natural Environment, Catalonia Ministry of Territory and Sustainability.
- Forestal Catalana.
- Jaume Bofill Foundation.
- Catalan Institute for Women.
- L'Era Agroecological Resources Area.
- Catalan Transport Service.
- Round Table for the Tertiary Social Sector entities in Catalonia.