“Linking green growth and sustainable development in Spain”

LUIS M. JIMÉNEZ HERRERO
DIRECTOR EJECUTIVO DEL OBSERVATORIO DE LA SOSTENIBILIDAD EN ESPAÑA (OSE).
PROFESOR DE LA UCM
OSE was set up in 2005 as the result of a collaboration agreement between the Spanish Ministry of the Environment and Rural and Marine Affairs, the Biodiversity Foundation (Fundación Biodiversidad) and Alcalá University’s General Foundation.
The OSE’s mission is to stimulate social change towards sustainability by providing the best available information for decision-making and public participation.
The OSE’s goals

• The OSE aspires to become a reference centre for the whole of Spain that
• rigorously collects, processes and assesses basic information on sustainability in Spain (current situation, trends and future scenarios),
• always taking into account its different dimensions (social, economic and environmental, cultural, institutional and global).
Evolution and maturity of the OSE in the five years since it has been in existence, looking towards the future

Reports on Sustainability in Spain published so far

Informe de Sostenibilidad 2005
Informe de Sostenibilidad 2006
Informe de Sostenibilidad 2007
Informe de Sostenibilidad 2008
Informe de Sostenibilidad 2009
Evolution and maturity of the OSE in the five years since it has been in existence, looking towards the future.

Thematic Reports on Sustainability published so far:

- **Land Cover Changes in Spain. Implications for Sustainability (2006)**
  - Corine Land Cover, analysing the interrelations and processes of territorial sustainability.

  - looking at one of the main dangers to urban quality of life and one of the main risks of urban unsustainability.

- **Water and Sustainability. Water basin functionality (2008)**
  - highlighting the importance of the functionality of the river basins as “water factories”.

- **Local Sustainability: An Urban and Rural Approach (2009)**
  - surveying the new relations between urban and rural systems with a strategic countryside-city dialogue.

- **The Natural, Cultural and Landscape Heritage. Keys for Territorial Sustainability (2009)**
  - dealing with the intrinsic relations between natural and cultural capital in a territorial context.
Brief diagnosis of sustainability in Spain

- Spain is one of the countries most vulnerable to Global Change
- A complex phenomenon that includes several interdependent global phenomena constantly providing each other with positive feedback
Linkages and Feedback Loops among Desertification, Global Climate Change, and Biodiversity Loss

- Desertification
  - Reduced carbon sequestration into above- and below-ground carbon reserves
  - Increased in extreme events (floods, droughts, fires)
  - Reduced primary production and nutrient cycling
  - Soil erosion
  - Reduced carbon reserves and increased CO2 emissions
  - Loss of nutrients and soil moisture

- Climate change
  - Increases and reductions in species abundances

- Biodiversity loss
  - Change in community structure and diversity

- Decreased plant and soil organisms' species diversity
- Reduced soil conservation
- Reduced structural diversity of vegetation cover and diversity of microbial species in soil crust

Source: Millennium Ecosystem Assessment
In the course of the last 100 years, the average temperature:
- of the Earth has risen by 0.74°C.
- In the EU it has increased by 1°C.
- and in Spain by 1.3°C.
The impacts of climate change on terrestrial ecosystems in Spain during this century will lead to “Mediterraneanisation” of the north of the Peninsula and “aridisation” of the south.
Desertification is advancing and now affects 37% of the territory.
Brief diagnosis of sustainability in Spain

TERRITORIAL DESEQUILIBRIUM

The population and economic activities are concentrated along the coast ("littoralisation"). Inland areas are becoming depopulated. As a result, the rural regions, which occupy 90% of the country’s land area and contain 30% of the population are becoming unsustainable.
Brief diagnosis of sustainability in Spain

BIODIVERSITY LOSS

Spain is the country with the greatest biological wealth on the continent of Europe, but it is suffering an incessant loss of ecosystems and species biodiversity.

*Pinus sylvestris*  
*Haya agus sylvatica*

*Quercus pyrenaica*  
*Encina Quercus ilex subsp. ballota*
Brief diagnosis of sustainability in Spain

COASTAL URBAN SPRAWL

artificial surfaces in coastal zones

España tiene ya, en su tramo mediterráneo, el 34% de su primer kilómetro ocupado por las superficies artificiales.
Brief diagnosis of sustainability in Spain

COASTAL URBAN SPRAWL

artificial surfaces in coastal zones

Land take by built-up area by distance to the coast (Barcelona, Spain) in 1990 and 2000

% of urban surfaces

EN MÁLAGA, BARCELONA Y ALICANTE YA ESTÁ URBANIZADO EL 50% DE LA SUPERFICIE DEL PRIMER KILÓMETRO DE COSTA
What is the best way to fight against climate change and global change?

SUSTAINABILITY!

SUSTAINABLE DEVELOPMENT!
Analysis

Period of economic expansion.

A growth model: intensive in materials, energy, carbon and territory.
A growth model:

- **intensive in materials, energy, carbon and territory**;
- **concentrated in the construction and services sectors**;
- A model in which **economic activity and environmental degradation are strongly coupled**.
Present situation and trends in Spain

Current situation in the face of the ECO-CRISIS. UNEMPLOYMENT

SOCIOECONOMIC CRISIS
IMPROVEMENTS IN ENVIRONMENTAL SUSTAINABILITY.

There has been a reduction in artificial greenhouse gas emissions, resource consumption and waste generation as a consequence of the economic crisis and greater efficiency of the model.
Changing the production and consumption model

ECO-CRISIS

ECONOMIC AND REAL ESTATE CRISIS

Some of the strongest pressures associated with the Spanish development model, such as greenhouse gas emissions and the surface area for building, have been diminishing, but not all of them, nor to the extent expected after the fall in the growth of GDP.
Changing the production and consumption model
ECO-CRISIS

UNEMPLOYMENT: A NATIONAL PRIORITY

MAP E1.6. UNEMPLOYMENT RATE BY PROVINCES (2009).

UNEMPLOYMENT RATE: 19,5%

SOURCE: Produced by the Regional Development Studies Group (GEOT). University of Zaragoza.
The need to change the production and consumption model in the direction of ecoefficiency and sustainability.

Resources productivity in EU

- **Productivity in Spain:** 0.86 €/kg
- **Productivity in EU-15:** 1.5 €/kg

For every unit of GDP we use more energy and more materials than our European partners.

**An ecoinefficient and uncompetitive model**
Changing the production and consumption model
ECO-CRISIS

**reduction in greenhouse gas emissions** as a consequence of the economic crisis and greater efficiency model.

8% EN 2008/2007,
10% EN 2009 (ESTIMATED)

**FIGURE E1.15. GREENHOUSE GAS EMISSIONS IN SPAIN AND THE EU IN COMPARED WITH THE BASE YEAR (1990=100).**

Reduction in energy consumption

**FIGURA E1.11. EVOLUTION OF PRIMARY ENERGY CONSUMPTION IN SPAIN BY TYPE OF FUEL (KTOE).**

*SOURCE:* Produced by the OSE from data in Libro de la energía 2008 (Energy Book), Ministry of Industry, Tourism and Trade, 2009. *NOTE:* Does not include renewable energies.
Decrease in energy intensity of the economy.
Changing the production and consumption model

ECO-CRISIS

DECREASE IN EXTERNAL ENERGY DEPENDENCE

**FIGURE E1.13.** FOSSIL FUEL AND NUCLEAR ENERGY PRODUCTION IN SPAIN AND THE COUNTRY’S DEGREE OF ENERGY DEPENDENCY.

The increase in the production of electricity from renewable sources raised the degree of energy self-sufficiency to 21.6% in 2008, as against 20.7% the year before, bringing the goal of reducing the energy dependency of Spain’s economy a little nearer.
INCREASE IN RENEWABLE ENERGIES
20% OF ELECTRICITY IN 2008.
25% IN 2009 (ESTIMATED)

Changing the production and consumption model
ECO-CRISIS
Various improvements have been detected in environmental sustainability in Spain.

Increase in the number of healthy trees.

Increase in the amount of agricultural land dedicated to organic production.

Increase in the number of ecological stockbreeding farms.
THE NEW SYSTEMIC CRISIS: PROPERTY DEVELOPMENT, FINANCIAL, FOOD, ECONOMIC AND SOCIAL CRISIS.

IN THE MIDST OF THE ECONOMIC AND SYSTEMIC CRISIS, what is the best way to fight against the eco-crisis?

MORE SUSTAINABILITY FOR MORE SUSTAINABLE DEVELOPMENT!
Changing the model of production and consumption sustainable economy. An economy along sustainable paths: Integrated into the sustainable paradigm.

An economy that must of necessity be innovative, efficient, competitive

A new sustainable economy with low materials, territory, water, energy and carbon intensity.

The strategies for overcoming the crisis must find management models in which employment, the environment and wellbeing positively reinforce each other.

There must be a commitment to generating “green jobs” in new employment sectors such as renewable energies and energy refurbishment of buildings.
a “win-win” situation

- We are in a “win-win” situation which, in the long term, makes everyone a winner and brings with it a raft of other benefits.
- Environmental goals, such as the fight against climate change, are reinforced by the economic goals of the fight against recession.
- An environmental policy aimed at protecting global common goods is an intelligent economic policy that also favours technological innovation.
a “win-win” situation
ECONOMIC OPPORTUNITIES IN THE FACE OF THE ENVIRONMENTAL CHALLENGE, CLIMATE CHANGE AND ECONOMIC CRISIS. “WIN-WIN” POLICIES. OPPORTUNITIES FOR SPAIN

THE GREEN GROWTH

THE CASE OF RENEWABLES.

RENEWABLE ENERGIES SELF-SUFFICIENCY, COST SAVINGS, FEWER GREENHOUSE GAS EMISSIONS.
ECO-nergy refurbishment of buildings provides a way to re-organise the construction sector and, therefore, reduce its heavy environmental load.
ECONOMIC OPPORTUNITIES IN THE FACE OF THE ENVIRONMENTAL CHALLENGE, CLIMATE CHANGE AND ECONOMIC CRISIS. “WIN-WIN” POLICIES. OPPORTUNITIES FOR SPAIN

- The chance to go from “forced” sustainability (“sustainable degrowth”, Latouche) -conjunctural sustainability-,
- To A “STRUCTURED SUSTAINABILITY” -“structural sustainability”-, which is permanent.
This requires bringing about a change in the “metabolism” of the real economy in keeping with the ecosystems’ load capacity and new ethical values.
**ESTIMATES OF GREEN EMPLOYMENT IN A SUSTAINABLE ECONOMY.**

*(A NEW REPORT BY THE OSE IN COLLABORATION WITH FUNDACIÓN BIODIVERSIDAD)*

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENT EMPLOYMENT</th>
<th>PROSPECTS FOR 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecoindustry</td>
<td>230,000 jobs:</td>
<td>490,000 jobs</td>
</tr>
<tr>
<td></td>
<td>• 84,000 in water capture, treatment and distribution (52,000 direct),</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 100,000 in waste management (85,000 direct),</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 50,000 in nature protection</td>
<td></td>
</tr>
</tbody>
</table>
### ESTIMATES OF GREEN EMPLOYMENT IN A SUSTAINABLE ECONOMY.
(A NEW REPORT BY THE OSE IN COLLABORATION WITH FUNDACIÓN BIODIVERSIDAD)

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENT EMPLOYMENT</th>
<th>PROSPECTS FOR 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Renewable energies</strong></td>
<td>198,000 jobs (89,000 direct)</td>
<td>140,000-180,000 more direct jobs – according to ISTAS (Trade Union Work, Health and Environment Institute)</td>
</tr>
</tbody>
</table>
ESTIMATES OF GREEN EMPLOYMENT IN A SUSTAINABLE ECONOMY.
(A NEW REPORT BY THE OSE IN COLLABORATION WITH FUNDACIÓN BIODIVERSIDAD)

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENT EMPLOYMENT</th>
<th>PROSPECTS FOR 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable building</td>
<td>535,000 jobs: • 345,000 in energy improvements and refurbishment, • 190,000 in new housing with high energy efficiency standards</td>
<td>More than 800,000 jobs</td>
</tr>
</tbody>
</table>
**ECONOMIC OPPORTUNITIES IN THE FACE OF THE ENVIRONMENTAL CHALLENGE, CLIMATE CHANGE AND ECONOMIC CRISIS.**

“WIN-WIN” POLICIES. OPPORTUNITIES FOR SPAIN

---

**ESTIMATES OF GREEN EMPLOYMENT IN A SUSTAINABLE ECONOMY.**

(A NEW REPORT BY THE OSE IN COLLABORATION WITH FUNDACIÓN BIODIVERSIDAD)

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENT EMPLOYMENT</th>
<th>PROSPECTS FOR 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable tourism</td>
<td>21,000 jobs</td>
<td>45,000 jobs</td>
</tr>
</tbody>
</table>
ECONOMIC OPPORTUNITIES IN THE FACE OF THE ENVIRONMENTAL CHALLENGE, CLIMATE CHANGE AND ECONOMIC CRISIS. “WIN-WIN” POLICIES. OPPORTUNITIES FOR SPAIN

ESTIMATES OF GREEN EMPLOYMENT IN A SUSTAINABLE ECONOMY.

(A NEW REPORT BY THE OSE IN COLLABORATION WITH FUNDACIÓN BIODIVERSIDAD)

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENT EMPLOYMENT</th>
<th>PROSPECTS FOR 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological agriculture</td>
<td>78,000 jobs</td>
<td>290,000 jobs</td>
</tr>
</tbody>
</table>
**ESTIMATES OF GREEN EMPLOYMENT IN A SUSTAINABLE ECONOMY.**

*(A NEW REPORT BY THE OSE IN COLLABORATION WITH FUNDACIÓN BIODIVERSIDAD)*

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENT EMPLOYMENT</th>
<th>PROSPECTS FOR 2020</th>
</tr>
</thead>
</table>
| Sustainable transport | 560,000 jobs:  
• 200,000 in sustainable transport services,  
• 135,000 in the industrial sector,  
• 230,000 in railway and ports civil engineering | 770,000 jobs in  
• services (250,000),  
• industry (300,000) and  
• infrastructure construction (220,000) |
ECONOMIC OPPORTUNITIES IN THE FACE OF THE ENVIRONMENTAL CHALLENGE, CLIMATE CHANGE AND ECONOMIC CRISIS. “WIN-WIN” POLICIES. OPPORTUNITIES FOR SPAIN

ESTIMATES OF GREEN EMPLOYMENT IN A SUSTAINABLE ECONOMY.
(A NEW REPORT BY THE OSE IN COLLABORATION WITH FUNDACIÓN BIODIVERSIDAD)

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENT EMPLOYMENT</th>
<th>PROSPECTS FOR 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,622,000 jobs</td>
<td>2,775,000 jobs</td>
</tr>
</tbody>
</table>
Environmental Sustainability:

• energy and water savings and efficiency;
• accessibility and use of renewable energies;
• sustainable mobility and less polluting means of transport.
A Sustainable Energy Model

• Comprehensive planning to 2020 based on guaranteed supply, economic efficiency and respect for the environment.
• National goals in keeping with the European Union’s commitments up to 2020 (20/20/20: energy savings, renewables, emissions)
• Energy efficiency targets for the Administration: 20% energy savings by 2016 compared to the tendential level.
Emissions Reduction

• Emission reduction certificates.
• Creation of a “stamp” recognising the use of low-carbon technologies.
• Energy Efficiency and Renewable Energy Law (2nd quarter 2010): revision of the support framework in accordance with the criteria in the Sustainable Economy Law.
Sustainable Transport and Mobility

• Planning transport infrastructures.
• Modification of the Infrastructures and Transport Strategic Plan to prioritise actions favouring goods transport, intermodality, connecting high speed trains with conventional lines and metropolitan public transport.
• 10% renewables in transport.
• Sustainable mobility plans.
• Procurement of ecological vehicles by public administrations.
Housing Refurbishment
Promotion of building refurbishment to improve accessibility and energy and water refurbishment.
It is about development that is also sustainable, which is not exactly the same thing as growth.

Growth ≠ Development ≠ Wellbeing ≠ Happiness
Growth ≠ Development ≠ Wellbeing ≠ Happiness

• We need a
  • New development measures. “Beyond GDP”
  • broadening the scope of the National Accounts by means of Integrated Ecological Economic Accounting.
  • “Index of sustainable socioeconomic wellbeing”.
  • Gross Happiness Index.
measuring economic progress, Wellbeing and sustainability

Sustainable Society Index, SSI

- ISEW
- GPI
- IEWB
- Genuine Savings
Growth ≠ Development ≠ Wellbeing ≠ Happiness

The change of cycle holds out a great opportunity for the “ecological refounding” of the economy on a comprehensively sustainable basis.

There is still a long way to go to achieve all this, but the opportunities exist here and now. Do we want to? Can we? Yes, we want to and we can.

To Link green growth and sustainable development could be a reality in Spain”
THANK YOU

http://www.sostenibilidad-es.org