



# Sustainable agriculture for the future we want

*How on earth are we going to feed 2 billion more people by 2050 as climate change depletes the land and water available? We will have to produce more food with fewer resources. **The question is how.** The European Union is developing its Common Agricultural Policy in ways that we believe are good for Europe, and good for the world: towards more sustainability in agriculture.*

Dacian Cioloș, EU-Commissioner for Agriculture and Rural Development, and Andris Piebalgs, EU-Commissioner for Development, are closely working together to find solutions. This paper sets out what we are doing to promote sustainable agriculture and why, in both the EU and in developing countries. It is also a **call to action**.

The **European Union** is moving towards sustainable agriculture. This has a pivotal place in both internal and external policies. We are making our agriculture greener, step by step, so that scarce resources can be managed more effectively. This is based on growth in sustainable productivity to ensure the continued existence of our production base to feed a growing population, also thanks to innovation, while enhancing rural livelihoods.

In many **developing countries**, agriculture is still the most backbone of the economy. It is crucial in helping to lift people out of poverty and hunger in rural areas by providing a stable source of income. It can serve as a catalyst for transition to the green economy, not only at national level, but also globally.

“*We strongly believe that agriculture that is environmentally, economically and socially sustainable can make a vital contribution in our response to the most urgent challenges: reducing poverty and ensuring food security.*”

*Commissioners Dacian Cioloș and Andris Piebalgs*

At the core of EU Development Policy is the investment in sustainable and inclusive agriculture and the development of supportive policies. Sustainable agriculture is key for long-term and inclusive growth, especially in developing countries, due to its strong multiplier impact on other sectors.

In Asia and Africa today, about 500 million smallholdings of less than 2 hectares provide direct livelihoods for 2 billion people. With the right kind of sustainable agricultural systems, taking into account local features, needs, traditions and capacities, these holdings can achieve substantial productivity gains.

We are convinced that sustainable agriculture will help us to face today's challenges, both in Europe and in the world as a whole. Joining forces is crucial- only together we can work towards achieving food security and poverty eradication.



### Why do we need sustainable agriculture?

- **Because more people will need more food in the future**

The number of people living in hunger today is approaching one billion. By 2050, there will be 2 billion people more to feed. In principle, the agricultural sector can provide nutritious food for all. But to meet future needs, we will have to boost sustainable agricultural production, especially in developing countries where most of the population growth is expected. Smallholder farms are an important part of the solution and they must be supported to achieve productivity gains.

- **Because farming is a key source of income that can help make poverty history**

For more than a third of the world's population, agriculture is the main source of income. In developing countries, it accounts for 29% of GDP and 65% of jobs. In many parts of Europe, farming is an indispensable part of the rural economy. To secure the livelihoods of rural populations, generate decent income and provide a basis for inclusive growth and poverty reduction, we will need to support farming systems that are viable long term.

- **Because agriculture has a dual role in adapting and mitigating climate change**

Today, agricultural systems worldwide are challenged by climate change and other threats, such as increased energy costs. Sustainable agricultural practices help farmers to adapt to changes and to reduce greenhouse gas emissions. Sustainable agriculture also means opening the door to innovation that can help to make farming cleaner, less exposed to volatility in the prices of inputs and more resistant to disasters.



- **Because agriculture uses natural resources that are becoming scarce**

Agriculture depends on the use of natural resources such as land, soil, water and nutrients. As demand for food increase and climate change and ecosystem degradation impose new constraints, sustainable agriculture has an important role to play in preserving natural resources, reducing greenhouse gas emissions, halting biodiversity loss and caring for valued landscapes.

### How does the EU define sustainable agriculture?

- Applied to agriculture, sustainability goes beyond being a purely environmental issue, and includes economic viability as well as social acceptability.
- The delivery of public goods such as environmental benefits is closely interlinked with the capacity of agriculture to be economically sustainable, generate adequate family income, and be socially sustainable. The thrust is to improve the quality of life in rural areas.
- We foster sustainable agriculture in the EU through our domestic policies, as well as in our cooperation with developing countries. Policy coherence for development matters for the EU.

### Sustainable agriculture aims to:

- **Produce safe and healthy food**  
Farms produce high quality, safe and healthy food.
- **Conserve natural resources**  
What is taken out of the environment is put back in, so that resources such as water, soil and air are kept in good condition for future generations. Chemical inputs such as fertilisers and pesticides are used judiciously. Sustainable agriculture also has a role to play in mitigating climate change and adapting to it.
- **Ensure economic viability**  
Farms generate enough income to keep going. Sustainable farms help to strengthen the economy and contribute to balanced territorial development.
- **Deliver services for the ecosystem**  
Biodiversity (habitats, genes, species) is protected. Agriculture delivers valuable services, such as water and nutrient retention, soil conservation, amenity and carbon storage.



- **Manage the countryside**

Farms manage the land, preserving valuable habitats and biodiversity and maintaining attractive landscapes which would not otherwise exist.

- **Improve quality of life in farming areas**

Farming makes a contribution to quality of life, for example by providing employment and offering decent working conditions. Living conditions and social structures in rural areas improve, creating an environment that is also attractive for tourists.

- **Ensure animal welfare:**

Animals are treated with respect and are well cared for. They live in an as natural environment as possible, are fed an appropriate natural diet and do not suffer from epizooties.



## Addressing sustainable agriculture in the EU

The Common Agricultural Policy (CAP) has undergone substantial changes since its early days. It has become a policy that helps agriculture to respond to the requirements of sustainable development. The reforms of the last two decades have helped to **improve market orientation and foster sustainability in agriculture**.

### "Greening" of income support to farmers

Supporting producers rather than products: that has been one of the key features of extensive reforms. Support for farmers has been decoupled from production, so they have no incentive to over-produce, and they base their decisions on market factors. This contributes to the economic sustainability of EU agriculture.

Furthermore, 'decoupled' support is made available on condition that farmers manage their land in sustainable ways. 'Cross compliance' obliges farmers receiving payments to respect EU environmental and other legislation<sup>1</sup>, for instance, by protecting soils, to keep land in good agricultural and environmental condition. This contributes to the environmental sustainability of EU agriculture.

### Developing rural areas

The EU's rural development policy, whose programmes operate at national or sometimes regional level, help to boost the productivity of the farming sector, to care for the natural environment, stimulate economic diversification and raise the quality of life in rural areas. This is achieved for example by:

- *Agri-environment measures*

These integrate environmental concerns into the CAP by offering compensation payments to farmers who choose to make commitments

that go beyond legal obligations on soil, water, wildlife, landscapes and climate change. By encouraging farmers to voluntarily protect and enhance the environment on their farmland, agri-environment measures play a crucial role in meeting society's demand for environmental outcomes provided by agriculture.

- *Investing in science and technology*

This can help to increase productivity of agriculture and forestry in a sustainable manner, and to achieve the goals of food security and sustainability. Innovation can take many forms, from developing better plant protection products to improving agricultural practices, such as GSM-controlled irrigation or GPS-piloted tillage.

- *Responding to local challenges*

Under the so-called 'LEADER' approach, local partnerships can receive funding to draw up innovative solutions to local challenges.

- *Afforestation programmes and natural regeneration measure*

Europe's forest areas are expanding. They need to be carefully maintained, in the economic, environmental and social interests of our densely-populated continent.

Rural development policy has a remit that includes business development, promotion of diversified sources of income for farming households, rural tourism, conservation of the rural heritage and the provision of basic services in rural areas. Overall, the rural development policy not only directly supports sustainable farming, but also strengthens the economic, environmental and social fabric in rural areas.



<sup>1</sup> See [http://ec.europa.eu/agriculture/envir/cross-compliance/index\\_en.htm](http://ec.europa.eu/agriculture/envir/cross-compliance/index_en.htm) for further information.

## Sustainable agriculture in practice: Some success stories...

- **Organic farming** is a system of farm management and food production that combines the best environmental practices, a high level of **biodiversity**, the **preservation of natural resources**, and the application of high **animal welfare standards**. It delivers a high level of public goods. Rural development policy offers farmers support to help cover the extra costs of organic practices which are especially environmentally beneficial.
- **On-farm production of biogas from manure and agricultural waste** is a source of **renewable energy** and provides farmers with additional income. The remaining digestate is a valuable source of natural fertiliser and can **replace mineral fertiliser, reducing greenhouse gas emissions and odours**. Investment in on-farm biogas plants has significantly increased in the EU over recent years.
- **Extensive grazing practices** can raise levels of **biodiversity** by providing habitats (e.g. for wild flowers, birds and butterflies). Such habitats are an important component of agricultural landscapes. Water and soil quality are also improved by reducing the number of livestock grazing per surface area, as well as the volume of chemical inputs used. Permanent pastures perform an important role regarding **carbon storage**. They are often the source of premium traditional farm produce, such as high-quality labelled cheeses.
- Farmers are becoming increasingly involved in **renewable energy production** (e.g. wind, solar) and other types of business, such as direct marketing, with increasingly popular **farmers' markets**, or **tourism**. Such diversification of income sources for farmers helps to ensure a strong economic and social base for rural development.
- **Precision farming**, tailoring inputs to the real needs of specific crops, means better **resource efficiency**. Soils vary widely. Fertilisers and other agro-chemicals can be applied in precise doses taking account of this. Not only is this good for the **environment**, it **saves farmers money**.
- **Agro-forestry systems** combine trees and shrubs with crops and/or livestock production. They can provide **multiple agronomic and ecological benefits** (e.g. shade, erosion control, higher production stability, enhanced carbon sequestration, and habitats for birds, insects and other wildlife). From the point of view of the farmers, these systems also contribute to better **climate resilience** and **economic diversification**, particularly when combined with biomass production as a contribution to the bio-economy.

In the southwest regions of Spain and southern Portugal the Dehesa is a very specific Mediterranean **system of extensively grazed, wooded pasture** that shows the multifunctional role of forests. Their intrinsic characteristics and management practices ensure the provision of a wide range of **environmental services** (biodiversity, soil conservation, carbon storage). A typical economic activity in the Dehesa is the production of **iberian ham** (jamón ibérico). Farmers rear Iberian pig species known as '**pata negra**', which feed on acorns of oak trees. The production of iberian ham is protected under EU quality schemes.



In the region of Niedersachsen, Germany, an on farm 500kw **biogas plant installation** is operated using grass cuttings from old marshes and moorland. This contributes to the maintenance of permanent grassland in these biodiverse habitats, while being economically beneficial to the farmer. The biogas plant produces 2.7 million cubic meters biogas per year and co-generates heat and energy energy, which is fed into the energy grid. The fermented substrate is used as a natural fertiliser on the grassland.

## Sustainable agriculture and the EU development agenda

Developing countries face an unprecedented challenge in the first half of the 21st century. The world's population is expected to reach 9 billion by 2050, and 8 billion people will live in developing or emerging countries. Demand for food is likely to grow by at least 70 per cent<sup>2</sup>.

If we are to eradicate hunger and malnutrition, then agricultural production will need to be boosted, especially in the countries where populations are likely to grow most. In many of them, natural resources are already under stress, and this trend will be exacerbated by climate change. Resources will have to be used ever more efficiently.



### Time for change

Development partners agree that 'business as usual' is not an option if hunger is to be reduced and if agricultural development is to reach its potential for growth. Development needs to be more inclusive. It needs to improve availability and access to food, and to help smallholders to integrate into production chains.

At household level, people must have access to sufficient food of good quality. Agricultural production must help farmers earn enough to cover their food needs. This would help in achieving other Millennium Development Goals, especially those concerning child mortality, maternal health and basic education, malnutrition being the most important cause of children mortality. Women are the mainstay of the agricultural economy in developing countries. They play a pivotal role in efforts to achieve sustainable agriculture, and applying the right changes offers them a real opportunity.

### Smart use of resources

**Sustainable agricultural production** in developing countries means adopting more productive methods that are **ecologically efficient**, using inputs such as water, land, plant protection chemicals and fertilizers sparingly and effectively.

Resources are becoming increasingly scarce and costly, given the limited availability of natural resources and the steep rises in the price of energy and related industrial inputs. Boosting farm production while using resources more efficiently in ways that safeguard their availability for future generations is essential.

Climate change is anticipated to reduce yields while increasing risks to farmers. Agriculture will have to adapt, farming systems will need to adjust and suitable plant varieties must be developed or selected to counter such risks.

### Towards the evergreen revolution

The evergreen revolution will involve stepping up production with **sustainable agriculture**. This way, a given area of land will yield more food, while **conserving resources, reducing negative impacts on the environment and enhancing natural capital and the flow of ecosystem services**. It allows substantial yield increases while restoring a sustainable and diversified environment<sup>3</sup>.

About 2.5 billion smallholders will need the **know-how and techniques** to implement changes. A **governance system** will need to be fully set up, linking research, support services, farmers and their organisations, and markets.

### Our priorities in development cooperation

- The EU is the largest contributor to the G8 pledge in 2009 for the **l'Aquila Food Security Initiative**, delivering actively on its promises, and it is at the forefront of the combat against **malnutrition**, including in the Scaling Up Nutrition movement.
- The EU is an important actor in promoting **sustainable agriculture on the international development agenda** and advocates an economically, ecologically and socially sustainable agriculture in its development cooperation policy.

The Commission is leading the EU policy debate on agriculture and food security with the policy framework adopted in 2010. The aim is to raise the incomes of smallholder farmers in countries that prioritise agriculture and food security in their development efforts.

*Worldwide experience with sustainable farming has shown it is possible to raise yields by nearly 80% in 57 Low Income<sup>4</sup> Countries*

<sup>2</sup> Save and Grow: a policymaker's guide to the sustainable intensification of smallholder crop production. FAQ. 2011. foreword.

<sup>3</sup> Ibid.

<sup>4</sup> Resource-conserving agriculture increases yields in developing countries, Environ. Science Technol. 2006.

The EU's development aid is intended to maximise social and environmental benefits by promoting ecologically efficient farming practices while ensuring compliance with international social standards and improving social and economic benefits for the communities concerned.

The communication '**An EU policy framework to assist developing countries in addressing food security challenges**'<sup>5</sup> sets out how the EU should target food security-related development aid, acknowledging that each food security challenge is different, so solutions should be tailored individually for each country.

### Small-scale farming is key

Most of the poor and hungry in the world live in rural areas where farming is the main economic activity, and where small-scale farming is dominant. Evidence has shown that the best way to reduce poverty and promote growth is to invest in smallholder agriculture. Our **key policy priorities are to raise the incomes of smallholder farmers and improve the ability of rural communities to withstand stresses** such as drought and floods.



Small-scale farmers need accessible, demand-driven **research and innovation** suited to their needs to raise production of food and develop sustainable farming systems. The policy framework supports research and innovation with clear benefits for small-scale farmers. Topics include strengthening adaptation to climate change and improving tolerance to stresses, droughts and floods, while maintaining a wide biodiversity of crops and varieties and access to them. The framework calls for a substantial increase (50%) in support for agricultural research for development over the coming five years, focusing on sustainable, systems-oriented, resource-efficient methods, including downstream valorisation: post harvest, value chain management, processing, nutrition.

The policy also advocates and supports policies on agriculture and land that stimulate the integration of smallholder farmers into production chains. **Securing access to land** through land tenure and land use rights, as well as equitable and sustainable access to resources (including water, micro credit and other agricultural inputs) are essential and prerequisites for sustainable agriculture practices to be successful.

At international level and in partner countries the EU supports the development of principles aiming at equitable and secure access to resources, in particular land, and at the responsible investments in agriculture, for the benefits of all, in particular vulnerable groups.

### Scaling up sustainable agriculture

The recently adopted "**Agenda for Change**"<sup>6</sup> confirms the central role of agriculture and food security in fostering inclusive and sustainable growth. The EU should support sustainable practices such as safeguarding ecosystem services, giving priority to locally-developed practices. It should focus on smallholder agriculture and rural livelihoods, encourage the setting up of producer groups, and address the supply and marketing chain, as well as government efforts to facilitate responsible private investment.

**Farming must be resource-efficient** and ready to adapt to climate change while being able to mitigate its most negative impacts. Equitable and sustainable access to natural resources and their management is critical.

**Smallholder farmers, particularly women,** are seen as likely to be the main agents in stepping up agriculture in EU food security cooperation policy.



<sup>5</sup> [http://ec.europa.eu/development/icenter/repository/COMM\\_PDF\\_COM\\_2010\\_0127\\_EN.PDF](http://ec.europa.eu/development/icenter/repository/COMM_PDF_COM_2010_0127_EN.PDF), endorsed by the Member States in May 2010.

<sup>6</sup> [http://ec.europa.eu/europeaid/news/agenda\\_for\\_change\\_en.htm](http://ec.europa.eu/europeaid/news/agenda_for_change_en.htm).

## On the ground: EU cooperation on sustainable agriculture

The wide range of programmes supported by the EU at the level of **governance, research, extension services and development projects** addresses the variety of challenges we are facing, for example:

- Agro-ecological systems sustainability, management of agro-ecological units (watersheds), restoring soil fertility (desalinisation)

**Research:** Consultative Group on International Agricultural Research (CGIAR) research programmes on drylands and on humid zones tropics systems. <http://www.cgiar.org/>

- Focus on smallholders and sustainable livelihoods systems, conservation agriculture and agro-forestry: minimize tillage, protect the soil surface, alternate crops with soil-enriching legumes.

**Research:** CGIAR Research Program on Forests Trees and Agroforestry CRP6.

**Development:** Creating an Evergreen Agriculture in Africa: Scaling-up Conservation Agriculture with Trees for Improved Livelihoods and Environmental Resilience in Eastern and Southern Africa, 2010-2013, as part of the Evergreen Agriculture initiative promoted by the World Agroforestry Centre (formerly ICRAF), EU funding 2 million €. [www.worldagroforestry.org/evergreen\\_agriculture](http://www.worldagroforestry.org/evergreen_agriculture)

- Precision irrigation and water management: save production resources through precision irrigation, precision placement of insecticides and integrated pest management, all of them increasing yields, saving resources and costs, and reducing the impact on environment<sup>7</sup>.

**Development:** Conservation Agriculture, through Farmer Input Support Response Initiative (FISRI) in Zambia (EU funding total 16.9 million) Phase 2 under preparation. [http://www.fao.org/europeanunion/eu-in-action/euff\\_countries/zambia/en/](http://www.fao.org/europeanunion/eu-in-action/euff_countries/zambia/en/)

- Support rural development to enhance local food security by increasing the productivity of production systems, focusing on sustainable agriculture, and to improve farmers' revenue and rural employment

**Development:** Under its renewed European Neighbourhood Policy, the EU has set up the European Neighbourhood Programme for Agriculture and Rural Development (ENPARD) in the southern Mediterranean.

- Use of information systems and knowledge for pest controls and smart use of insecticides.

**Extension on crops:** CABI, EU funding 10 million €, 2012-15. [www.plantwise.org](http://www.plantwise.org),

**Extension on livestock:** Global Rinderpest Eradication Campaign, FAO-OIE, 1961-2011.

- Climate-smart agriculture projects

**Research:** CGIAR Research Program on Climate Change, Agriculture and Food Security, CRP 7,

**Development:** Capturing Synergies between Agricultural Mitigation and Adaptation, FAO, 2012-2014, EU funding 3.3 million €.

- Land rights and equitable access to natural resources

**Global governance:** International Land Coalition International Land Coalition (ILC), EU funding 5.5 million € (2006-15), Voluntary Guidelines on the Governance of Tenure of Land, Fisheries and Forests (CFS).

**Development:** Securing rights and restoring lands for improved livelihoods, International Union for Conservation of Nature (IUCN), EU funding 1.6 million €. <http://www.iucn.org>

In 2011 for the first time in history, the world has been declared free from an animal disease: rinderpest. The EU has been a main partner and donor of the Global Rinderpest Eradication Campaign in collaboration with the World Organisation for Animal Health (OIE) and FAO, contributing 390 million € over the last 50 years. ([www.oie.int/en/for-the-media/rinderpest/](http://www.oie.int/en/for-the-media/rinderpest/))



In diverse dryland areas of Jordan, Mali, Botswana and Sudan, the EU is supporting local communities in building capacities to restore and sustainably manage their dryland ecosystems, improve their marketing "activities" as well as support dialogues among stakeholders to share knowledge, ideas and priorities.



Through a rapidly expanding network of community based Plantwise plant health clinics, CABI transfers knowledge to smallholder farmers to help them lose less and feed more. Supported by a comprehensive scientific knowledge bank, Plantwise is strengthening the national plant health systems of many countries (20 to date) by providing an authoritative local and global source of information on plant health.



<sup>7</sup>Op. cit. FAO 2011, foreword

## The way forward to the future we want

### The EU is leading by example:

- The EU's own efforts to reform agriculture on sustainable lines provide success stories that can offer ideas for others elsewhere in the world, acknowledging that a locally adapted approach is always required.
- EU practices can serve as best practices elsewhere.
- The concept of sustainability takes into account the specificities of each region and helps to develop their potential. This applies not just to Europe, but to the rest of the world, too.



### With our partners, we will continue to work on:

- **Increasing productivity of** resource-efficient farming that can adapt to climate change and mitigate its worst impacts. Equitable, sustainable access to natural resources is crucial, as is managing them well.
- **Focusing on smallholder farmers, particularly women**, who are likely to be the main agents of change.
- **Promoting research** in sustainable agriculture, which needs to be scaled up.
- **Advocating sustainable agriculture**, which needs to be a political priority. Both public and private investment in sustainable agriculture needs to be optimised.

*Sustainable agriculture offers solutions to the challenges we face worldwide. We are ready to join forces with our partners to work together to make it happen: reducing poverty and ensuring food security for all.*

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