

A group of leading academics, covering agriculture, economics, sociology, environment, ecology, conservation, water and food consumption, from across Europe, met in the Polish Academy of Sciences on October 5th-6th 2011, to discuss the role of Europe in meeting the demands of sustainable global food security looking ahead to 2050. These are our conclusions:

Times of global change

We are in a period of rapid global change, encompassing climate, land use and population growth. Food security (obtaining enough calories) and nutrition security (obtaining a nutritionally balanced diet) are important global challenges as the demand for food has potential to outstrip the supply. This imbalance will be reflected in rising prices and more volatility in the markets. As the right to food is a central human right, as defined by the UN, food and nutrition needs to be central to societal and policy aims.

The EU in global context

The EU is one of the largest global importers and exporters of food, and therefore has considerable leverage in, and responsibility for, the global food and nutrition agenda. European food security is intrinsically linked to global food security. As such, the EU needs to break away from an inward-looking focus. While global food security will be most positively impacted by increasing production in developing countries, the EU must play its part in producing food for its citizens and people elsewhere.

Whilst changing human consumption patterns may change the demand for food, any growth in production should be undertaken in a sustainable way with full understanding and minimisation of environmental impacts both within Europe and on the rest of the world.

Sustainable intensification

In order to ensure food and nutrition security into the future, in the face of increasing competition for land, water and other resources, agriculture needs to protect the environment for future generations, produce a growing supply of food and also be socially sustainable. Sustainability must encompass assessing all the costs and benefits of agriculture, locally, regionally and globally, and in both the short and long-term future. Given the limited potential for expanding agriculture into new land, any increase in demand for food requires increasing average yields from existing land, but this must be undertaken sustainably.

"Sustainable intensification" is therefore about increasing the efficiency of production (producing more with less resources), whilst minimising and mitigating environmental impacts, near and far. Consequently there is an urgent need to develop ways of measuring the extent to which growing productivity is environmentally sustainable.

While biotechnology may play a role in global food security it is unlikely to be the main solution. Innovations and institutions concerning management of farming systems and agricultural landscapes in an environmentally sensitive way may well provide greater scope in addressing this issue globally.

Cross-sectoral institutions and policies

We recognise an urgent need to institutionalise sustainable intensification into the agricultural debate. Food production and consumption is a complex system that crosses many disciplinary boundaries. We therefore need to develop a cross-sectoral and interdisciplinary approach to research, public debate and policy formulation. For example, common frameworks that jointly consider nutrition and health, environment and agriculture are desirable.

The EU also needs to promote, within trade negotiations, environmental issues and the multiple roles of agriculture in society. Furthermore, education and research is required: linking food, nutrition, agriculture and the global food system; additionally governments need to invest in extension services to help farmers implement sustainable intensification.

Developing a trans-sectoral institutional framework necessitates consultation with, and the participation of, a very large number of stakeholders and organisations across global society. We also need to encourage consideration of human values and the widespread effects of our behaviour on the earth system.

From local to global

Global change arises from the sum of individual choices played out on local, regional and global scales. Therefore, as local actions can have distant impacts, a multiscale approach is needed such that local interests do not conflict with those at larger scales (regional, global). For example, under-production of food in one area inevitably means that other areas have to compensate in their food production, and these distant effects need consideration. Within the EU we need to encourage and assist local decision making according to a set of principles set at a larger scale in the governance hierarchy, such that there is subsidiarity but with reference to sustainability and equity across scales.

Coping with future uncertainty

The future is more uncertain than it has ever been, but we know that natural resources are increasingly constrained globally. The EU should maintain its productive agricultural land in order to meet future food demands, whether for the EU or the rest of the world.

Despite the uncertainty in the future, it is clear there are many "win-win" actions that are likely to make a positive difference whatever the future trajectory. These include taking a landscape view to manage agricultural systems (for example, to develop instruments to promote ecosystem service provision in agricultural landscapes), reducing food waste at all points in the supply chain, encouraging a diversity of agricultural products within regions, and encouraging a nutritionally balanced diet rather than one that only considers calorie sufficiency (for example, this may encourage demand for fruit and vegetables, locally and sustainably produced). On the other hand, one certain "lose-lose" solution would be agricultural intensification without being driven to be sustainable.

Only by having environmental sustainability at its heart will growth in food yields meet our future global responsibilities and needs.

Signed

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