



Biotechnology: a tool to meet the moral responsibilities of EU agriculture*

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State of play

Today's world is facing one of the worst food crises of the last Century. Long-term food prospects are troubling and demand far greater attention. Global demand for agricultural commodities tends to increase due to a combination of factors, in particular population explosion with accelerated urbanization. Price levels and volatility are exacerbated by rising volatile energy and other input costs as well as currency fluctuations and speculation in the commodity markets. Over the last decade, annual crop yield increases have halved, public investment in agricultural technologies has plummeted and so has development assistance to agriculture. At the same time large cropland surfaces have been lost to urbanization and transportation infrastructure and cropland quality has been suffering from soil erosion and growing water stress, without unused quality cropland compensating for that. On top of all this, growing green house gas emissions (GHG) and climate change have made existing "green-revolution"-type solutions inappropriate to meet the challenge. The politics of food and feed has taken centre stage and it would be a serious mistake to neglect these topics whenever commodity prices diminish.

When food stocks are low, and food and feed demand tends to outstrip supply and focus on higher quality, the rural world is under huge pressure to increase productivity and yields while sparing natural resources, notably soil and water. It cannot do so without access to new technologies, including drought-resistant and other kinds of biotechnological applications. Biotech crop varieties are potentially one of the most cost-effective ways to increase food production, sustain farming in marginal areas and restore degraded land to production, provided they are duly assessed and authorized with the proper precaution. If we want to feed the world without destroying our resources, science and technology must drive the development of modern agriculture.

According to the Food and Agriculture Organisation of the United Nations (FAO), out of the world's total land area of 13 billion hectares, only 12% is cultivated and the future expansion of farmland for food production will be slower than in the past, while in the next 30 years, developing countries will need an additional 120 million ha for crops.

The latest UN projections predict that we will have a population of eight billion in 2025. If the number of cultivated hectares available remained the same, the estimated number of people fed by hectare would be 5 people, or an increase in mouths to feed per hectare of 25% compared to 1995. It is of course difficult to estimate how much net additional land might come into production by 2025, because land loss to urbanization and land degradation can be expected to continue and the net effects of climate change are unknown.

If we want to effectively tackle the world's interrelated food, environment and energy security challenges, land managers have a key role to play and an overriding responsibility to do so. But they need to be given the concrete possibility to fulfil their role with the required technological and financial support

Biotechnologies: an instrument of food and environment security

Agricultural biotechnology is a toolbox to engineer better crops with higher yields, lower inputs and better nutritional profiles. It offers farmers the opportunity to adopt more sustainable farming systems allowing less fuel consumption, increased carbon sequestration and reduced fertilizer use. "EU agriculture needs to move forward in considering biotechs, namely the drought resistant ones", Neil PARISH, President of the Agricultural Committee of the European Parliament

Biotechnology has the potential to make agricultural production more sustainable and help commodity supply match demand at reasonable prices by helping increase crop productivity and sustainability at the same time. According to a report by Graham Brookes and Peter Barfoot (2008), the global cultivation of genetically improved crops in 2006 allowed a reduction of CO₂ emission release into the environment by 14.8 million tons CO₂ equivalent to taking 6.6 million cars off the roads for 1 year. Other examples of potential benefits are such things as preventing insect feeding damage, improving weed control programs, averting crop loss to plant disease, decreasing crop protection product spraying, mitigating loss of soil organic matter, fighting erosion and compaction through less ploughing, sparing of water resources, improving food quality and nutritional benefits, and through a number of these, last but not least contributing to the alleviation of poverty and hunger. The new generation of biotech products will also be aimed at developing pharmaceutical products for human health or proteins for life-saving drugs, and to making "second generation" agro-fuel more efficient.

Until now most European farmers see no advantages from planting biotech seeds. Their demand for such seeds will not develop substantially until they detect significant profits or other benefits from doing so, and unless they are confident that consumers are ready to buy the new products farmers can produce. In Europe, consumer reluctance to buy can be overcome only if and when the new generation of biotech products is seen to provide clear benefits to them too.

Biotechnology is being applied at an accelerating rate. In 2007, there were 114 million hectares in the world planted with biotech crops, 12% more than in 2006, involving two million more farmers. According to a 2007 report of the International Service for the Acquisition of Agro-Biotech Applications, the global agricultural surface of genetically improved crops has been increasing by more than 10% each year since their introduction in 1996. In Europe, however, the up-take has been much slower, with a total of 110.000 ha in 8 EU Member States: Portugal, Spain, Germany, France, Czech Republic, Slovakia, Poland and Romania. But EU imports of biotech animal feed have been increasing sharply and domestic meat production would have to be slashed without them.

A need for more research, innovation and clearer political messages

In order to realize the potential benefits of biotechnology more research and development is needed. *"Science and technology must spearhead agricultural production in the next 30 years at a pace faster than the Green Revolution did during the past three decades,"* said Dr Jacques DIOUF, Director-General Food and Agriculture Organization of the United Nations (FAO).

We welcome research on genetically enhanced plants able to increase productivity in a sustainable manner, and make industrial processes more efficient and cleaner, while providing safer, healthier and tasteful food for consumers. The European Commission has developed a comprehensive legislative framework based on the precautionary principle to ensure that biotech crops grown, marketed and imported in the EU meet the highest standards of safety for the environment, and for human and animal health. These products are subject to a thorough risk assessment. Once they are approved, there should be no arbitrary bans restricting farmers' and consumers' access to authorized products, or discriminatory national or local coexistence rules.

Food, a moral duty

"The food challenge is a moral duty as the right to food is part of the dignity of the Human being", Hans-Gert PÖTTERING, President of the European Parliament said. Thanks to technology, Europe has been able to become a key granary of food for the world. Its role cannot be consolidated without applying new, authorized technologies and further research and development. This is not just a technical, but an ethical question. Hunger in the world cannot be defeated without biotechnology. We need to recognise this fact, authorize its application and ensure this is done with precaution in a safe way, in full respect of the legal framework and of farmers' right to choose.

At a time when the food price crisis is aggravating the difficult challenge of producing enough food and feed to support growing populations, EU farmers and livestock producers must be able to choose competitively from all safe technologies and products that can contribute to meeting global food, feed, and fuel demands in an environmentally sustainable way. This includes biotechnology. Political leadership by the Commission and Member States is urgently needed to ensure that Europe embraces safe innovation including plant science innovation to the benefit of Europeans, the environment, farming communities and consumers.