

This response was submitted to the consultation held by the Nuffield Council on Bioethics on Emerging biotechnologies between April 2011 and June 2011. The views expressed are solely those of the respondent(s) and not those of the Council.

Nuffield Council on Bioethics: consultation on emerging biotechnologies

An answer from France, 14 June 2011

Preliminary remarks. I am sorry because my contribution is a little short. I could not write a longer contribution as I was overwhelmed by work. In addition, I am not a specialist in ethics, social or legal issues. I work mainly in agricultural economics. My field of research and expertise deals more with agro-economic issues of GMOs and transgenic crops, their impacts, prospects, and related debates. I apologize also for my poor English.

9. Do you think that some social and ethical themes are commonly overlooked in discussions about emerging biotechnologies? If so, what are they?

The impacts of technologies notably depend on **the way in which they are chosen, oriented, used, and implemented in practice**. For example, many social impacts of GMOs do not come from genetic engineering itself, but from the characteristics and objectives they are given through the type of new traits introduced, from the context in which they are inserted and finally from the way they are used. At the economic level, are not the so-called "impacts of GMOs" actually the result of the impacts of the overall economic system? Strictly speaking, part of "the impacts of GMOs" does not in fact come from genetic engineering *per se*, but rather from the way in which it is oriented, used, regulated and implemented in practice. Thus **the overall economic system –and the main economic actors– play an important role**.

Today, orientation and direction of technology in the field of plant biotechnology seem mainly to come from the private sector. There is a kind of division of labour between the private and public sectors. The private research sector is dominated by financial return objectives, profitability goals, and competition between companies. Companies whose products succeed are not in general those seeking public good, or general welfare, or even the welfare of their clients. Indeed, today the situation is a little different from that described by Adam Smith in 1776 "*It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest...*" It seems that now successful products are beneficial for some people, but not for everybody; in addition some products can be detrimental to some part of the world population or to the natural environment. This is probably linked to the present dominance of financial capitalism.

Some or perhaps many citizens are concerned and worried because they have more or less the feeling that there is an onward and head-long rush into some thoughtless directions. Indeed short term economic issues seem predominant, even if they can have mid- or long-term detrimental effects for the natural environment or for some people. If competition between companies could be useful ("*let the best win*"), this is not always the case because the competition conditions are rather unfair (there are major inequalities).

Today, humankind is facing many challenges involving the ability to feed the world population, diminish poverty and malnutrition, preserve natural resources and fossil resources, reduce pollution, cope with climate change, etc. Among the means put forward to deal with these challenges, science and technology are often proposed. However, some people have the feeling that thoughtless applications of science and technology are a major cause of these issues. They wonder: "is it possible to solve these issues by the same kind of methods that led humankind into this impasse?" Of course, it is not science and technology that are responsible by themselves, but the way in which their

applications are oriented, used, and implemented in practice. Today the private sector plays a leading role (in the technological choices and technological applications), but its quest for competitiveness and immediate profit are not the best way to choose which technologies to develop and implement. Therefore one essential issue is governance, which is a very difficult one.