



Research Project: Sustainable Technologies and Responsible Innovation: Food.

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Background:

Responsible innovation and the management and regulation of technologies such as nanotechnology, synthetic biology and genetic manipulation creates particular challenges in terms of stakeholder relationships and corporate social responsibility when they relate to the production and consumption of food. From a production perspective the regulatory, ethical and sustainability implications of introducing genetically modified crops or seeking to apply intellectual property rights to genes and species raises many questions. From a consumption perspective, the rights of consumers to understand and be informed about exactly what they are eating has led to regulatory measures to ensure that companies disclose nano-ingredients, but whether that equates to greater consumer understanding is questionable.

Aims & objectives:

A consistent aim within this research project has been to examine the extent to which existing regulation and policy measures are appropriate for, and can cope with, the development of new food technologies such as genetic modification and nanotechnology. Other aims of the research include:

- Developing a better understanding of the role of consumers in the regulation of the use of nanotechnology in food production;
- Exploring the potential of labelling based measures to ensure consumer understanding of the use of technological innovation in food;
- Considering the application of intellectual property rights in the context of food production and producers, particularly in the case of patenting and the extent to which it can be applied to particular crops.

About the research:

Since the work was largely focussed on regulation, it has mostly involved the analysis of legislation and policy measures and their implications. This included a review of the role of the precautionary principle in managing the risks associated with new technologies (such as biotechnology in food production) that aim to contribute to ecological modernisation, an analysis of the implications of biopatenting, and an analysis of the potential for the implementation of mandatory labelling of nanomaterial ingredients (which is also linked into BRASS work on the regulation of nanotech, see A14, and technological innovation and food see A7).

Results and outputs:

The work on biopatenting has revealed that the extension of patent law to agriculture has created a new layer of institutional complexity to agriculture policy and has reinforced processes of an incremental paradigm shift from agricultural exceptionalism to market liberalism. The case has raised important questions about legitimacy, conflicting values, multiple orders and policy change in multi-arena governance for food production.

The work looking at the potential for mandatory labelling of nanotech ingredients in food revealed that although the potential benefits of nano labelling are substantial, the demands placed on nano labelling may be difficult to meet because of a range of limiting factors. The current emphasis on disclosure and consumer choice does not necessarily lead to intended outcomes given the limits of consumer understanding of the underlying technology.

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Google link to german original book:
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Impacts achieved/potential for impact:

The research work on biopatenting by Dr Peter Feindt has had particular impact in Germany where he is the Deputy Chair of the Advisory Council for Agrobiodiversity and Genetic Resources to the Federal Ministry of Food, Agriculture and Consumer Protection. Peter was the main author of a major report on biopatenting in agriculture submitted to the German State Secretary of Agriculture in July 2010. This report went from the German Agriculture Minister to the President of the European Patent Office (EPO) as part of an *amicus curiae* letter with regard to a pending key decision of the Board of the EPO, widely known as the “*Broccoli Case*”. This led to a meeting in late September between the President of the EPO and the German Minister which was largely based around the report and its recommendations. The subsequent final decision in December 2010 by the EPO Board to not allow the patenting of plants developed by conventional breeding techniques, completely reversed the decision from two years earlier.

During the early part of BRASS’s existence Professor Terry Marsden served on the advisory team for the Prime Minister’s Strategy Unit on the Commercialisation of GM crops, and work by Professor David Campbell on GM crops was also cited by Lord Walker of Gestingthorpe in the House of Lords. Groves gave oral evidence (following a BRASS written submission) to a House of Lords Select Committee on Nanomaterials in Food.