

# Food related regulations and agricultural production

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## Introduction

The goal of this short module is to look at direct linkages between food-related regulations and agricultural production. Earlier in the course we argued that food-related regulations respond to consumer preferences, but for many of them plant and animal health are an important prerequisite; and food-related regulations, such as traceability, have impacts at the farm level, such as those discussed under the heading of private standards.

Agricultural production is seasonal: if farmers observe higher prices for some products or demand for certain attributes, it takes a production cycle to deliver to the market.

By its nature, agricultural production also responds to weather related conditions. Moisture soaked grains influence the quality of flour, which, in turn, influences the quality of baked products even though they satisfy all food safety requirements. On the other hand, in addition to quality, plant and animal health conditions at times influence even the safety of the final product.

In this module, we look at animal and plant health and some –not all– implications of food-related regulations for production. Animal and plant health are often behind many trade measures, as we have discussed in previous chapters.



## 1. Animal health and production

Animal health, although always of great importance, gained the spotlight after the BSE crisis in the mid-1990s, which caused a breakdown of consumer trust and confidence in the authorities, the food industry and the regulatory system and had impact on producers.

Examples of animal diseases are:

- **Foot and mouth disease (FMD).**
- **BSE** (bovine spongiform encephalopathy or, as it is known, *mad cow disease*).
- **Avian influenza.**

The BSE crisis serves as an example of the relationship between animal health and food safety. It was instrumental in adjusting the food safety system showing the economic impact on production as well as revealing a public health issue. Some animal diseases do not affect final consumers (such as bovine tuberculosis) but impact producer margins. Other diseases, such as *salmonellosis* (food poisoning) or (BSE) can cause human diseases and have significant public health implications. Some animal diseases have a potential for spreading rapidly irrespective of national borders. All animal diseases can have serious economic consequences.

Animal diseases can be spread by wind, insects, or using wildlife as carriers. If a disease is spread, measures for tracking and tracing and possibly a recall are needed. Increased sourcing of inputs, for example trading of live animals, increases the risks of communicable diseases.

A question remains as to how the costs are shared between producers, taxpayers, and consumers of the final product.

In case of an outbreak of a disease, the animals on the infected farm are killed. Animals which are believed to have been exposed to infection may also be culled in order to prevent the spread of disease. A concept of *regionalisation* is important. It implies the application of steps to control the disease to a specific area where the disease is known to exist, without applying restrictions on the movement of animals and animal products in the rest of the country. Regionalisation minimizes the effects of outbreaks of animal disease on the wider economy.

Animal husbandry practices and the treatment of animals can also be subject to veterinary checks from importing countries. Some importing countries only import from approved establishments. This step results in increased cost levels for farmers who might then be able to recuperate it in the form of price premiums on markets abroad.

A frequent complaint of farmers is that stricter regulations, identification and registration requirements for animals, policies of animal waste, environmental requirements, etc. are having impacts on their competitiveness, especially in cases where the requirements are mandatory and product differentiation on the basis of attributes is not possible.



## 2. Plant health and production

Rules guiding the movement of living organisms exist, although unlike animals, most of the plants are traded in their *finished* or *semifinished* form, such as grain or flour. Crop farmers, however, have their own set of issues arising from food related regulations to comply with. Among those are stricter pesticide limits and changing lists of approved pesticides in light of new scientific evidence.

Also significant is the risk of plant diseases which might be more likely to occur with:

- Climate change.
- Introduction of new diseases and pests related to globalisation.
- Growing resistance to existing pesticides and herbicides which can be damaging both economically and environmentally.

The rate of introduction and establishment of new plant pests and diseases has increased over the last century. The damage can be observed at the farm level in a form of reduced quality or quantity all the way up to national and global levels. In the worst cases crops can collapse. The spread of diseases, pests and other substances harmful to the natural environment with uncertain consequences is also concerning.

However, developments in world agricultural markets, especially the increase in prices of autumn 2007 and spring 2008 brought agricultural production and the Malthusian question of *how to feed the world* back into the spotlight. Despite the challenges climate change could bring, agricultural productivity will have to increase to meet the increasing demand for food, feed, and fuel, and deliver it in the desired quality and quantity if suitable arable land is limited.

### 3. Other issues

When consumers express their preferences and indirectly lobby for a standard, they might be, in fact, putting the competitiveness of their own farmers in jeopardy. Consider examples of animal welfare and GMOs. In the case of animal welfare, consumers (and NGOs) demand for more animal friendly practices gets translated into a standard that increases the costs of production. However, when properly differentiated, consumers are willing to pay a premium for products produced in an animal friendly manner. In the case of GMOs, consumers, at least in the EU, refuse GMOs, although studies fail to indicate the negative impact on human health. Some standards, such as the EU GM standard, are introduced following demands from consumers and not producers. Agronomic attributes of GMOs make them suitable for production, and in some cases lower the costs. Thus, consumer preferences and purchases can result in standards that are suboptimal from society's and the producers' point of view.

Traceability requirements, tracing inputs from farm to fork, also have important implications for primary commodity producers who are at the entry level to the system.