Animal Identification, animal breeding and international trade- the new EU Regulation on Zootechnics

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1. Bovine identification and traceability in the EU

The development of animal identification and traceability programs in the EU was closely linked with the occurrence of Bovine Spongiform Encephalopathy (BSE). BSE affects the brain and central nervous system of adult cattle. It was first diagnosed in Europe in 1986 in the United Kingdom, subsequently in other EU member states, and eventually in several countries outside the EU. As there is no in-vivo test for the early detection of BSE, eradication of the disease relies on an efficient system of Animal Identification (AI). In light of the BSE crisis (1997), the European Commission developed rules aiming to re-enforce individual identification and traceability of bovine animals. For example, monitoring through rapid testing of all bovine animals slaughtered above a certain age, and the need to ensure full traceability for beef meat ("from the farm to the table"). These two measures obliged the system to provide information on animal origin and age verification. Identification alone does not guarantee traceability. In the EU, traceability is ensured through a real time bovine-tracking-system, allowing all bovine movements from "birth to slaughter" to be individually traced. In addition, this traceability was extended to individual beef cuts, in accordance with the label at the level of retailer point.

The EU system is capable of identifying any other bovine at risk, which may have been in contact, or living (for any period) in the same holding as a positive animal. Furthermore, the EU system is able to trace back the genealogy of bovine animals, as information of the dam is also available. This is crucial in order to perform the identification, isolation and culling (destruction) of risk animals potentially linked to positive cases.

Regulation (EC) No 1760/2000 establishes a regime based on individual traceability of cattle by means of four main elements: individual identification of animals with two ear tags; registration of animals in each holding in a registry (e.g. farm, market, slaughterhouse); individual passport for each animal containing data on all movements; and the reporting of all movements on electronic format to a computerized database (managed by the competent authority of every EU Member State) that is able to quickly trace animals and identify cohorts in the case of disease. The role of the database is crucial since it must be able to supply, at any time, a list of identification numbers for all bovine animals present on a holding and a list of all changes of holding for each bovine animal, starting from the holding of birth or the holding of importation. The final test of an effective traceability system is reflected at the level of a computerized national database for bovine animals. The responsibility of providing the database with the necessary information is that of animal keepers.

In addition, for any labelling system to be credible, a comprehensive AI and traceability system is required. In order to extend traceability to individual beef cuts, the EU legislation contains special provisions for beef under Regulation (EC) No 1760/2000,

which include a reference number that allows the trace-back until the place of birth, as an obligation to provide precise information about the origin of the beef. Any piece of beef found at an EU supermarket must contain information on where the animal was born, raised and slaughtered.

Traceability cannot be achieved without cost and it is therefore necessary that identification and traceability systems are proportionate to the objectives or goals to be achieved. Setting an AI and traceability system will depend mainly on the purpose (e.g. animal health, food safety, market access objectives) and the animal species. In general, running a traceability system would be less costly and easier when implemented by batch (group of animals), rather than on the basis of individual identification. Generally, traceability of cattle is more complex than that of other animal species (e.g. pigs) due to the specificities of their production and marketing systems. For example, pigs are produced and marketed in large groups, as they tend to remain together throughout the production phase, whereas cattle production systems often involve considerable mixing of cattle from different sources. Furthermore, age verification, an important component of beef trade but not of pork trade, requires individual animal identification because animals are sorted and regrouped frequently under normal production practices.

The use of Electronic Identification (EID) has been demonstrated (e.g. Australia, Canada) to be effective in achieving movement tracing across property, and therefore guaranteeing full traceability.

In the EU, the major objective for initiating the sophisticated system of individual animal identification and traceability was to re-establish consumer confidence in beef and beef products through transparency and full traceability of bovine animals and their food products. Human health is an important focus as EU consumers are reassured that food products can rapidly be traced through the food chain and withdrawn from the market in the case that a public health problem has been identified (e.g. residues, dioxin). Other major goals are localization and tracing of animals for veterinary purposes (of crucial importance for the control of infectious diseases), crisis management and fraud prevention. An additional goal specific to the EU is the functioning of the internal market.

The AI and traceability system in the EU aims to ensure free (and safe) movement of live animals and the placing on the market of animal products, between 28 Member States. Four to five million cattle are subject to intra-EU trade every year, with a trend to increase. The system in place has been successful, and not only contributed to the control of BSE the risk of which is increasingly moved from controlled to negligible in the EU, thereby regaining consumer confidence , its usefulness has also been demonstrated during the control of several other transmissible diseases (e.g. bluetongue, foot-and-mouth disease) and to ensure traceability of bovine food products .

2. Animal Identification, traceability and international trade

BSE risk status based on OIE standards and therefore the need of systems of animal identification and traceability is a substantial market access issue for international trade not only for meat but also for other bovine derivate products (e.g., dairy products, hides, meat and bone meal, skins, cosmetics, etc...).

AI systems "are becoming prerequisites to international trade" since they facilitate source and age verification. Delaying the adoption of traceability systems could reduce access to specific international markets. For this reason, many countries have developed animal identification and traceability systems. These systems differ in characteristics, protocols, technologies, implementation, depth, breadth, and precision.

Studies illustrate that animal traceability systems are expanding not only in the EU but also around the world; in more than 20 different countries (including the eight currently largest beef exporters worldwide).

It is difficult to analyse the full impact of animal and meat traceability on international trade and to quantify its benefits. However, the presence of a traceability system might facilitate exports to certain markets while its lack might limit or prevent the access. Most important is that its presence might contribute to lift temporary restrictions much faster.

The EU is not only an importer of beef. EU exports of beef to third countries amount between 170 and 220 million tons per year. The EU share of world beef exports (and other bovine derivate products) declined dramatically following the first cases of BSE. . Following this, most of EU trade partners imposed bans or import restrictions for beef and other bovine derivate products during the nineties. Since then, recovery of EU exports has been slow but many of these restrictions have finally been removed by major trade partners. A determining factor was the implementation of a proper animal identification and traceability system for bovine in the EU (from the "farm to the fork"). The EU was in a position to present to its trade partners one of the most developed systems for cattle identification and traceability worldwide, due in part to the experience gained in the eradication of BSE and other animal diseases. Indeed, BSE is a communicable disease for which the health status of an animal cannot be established until the post-mortem test is done so traceability is the only guarantee for live animals to trace-back to the mother. The EU cattle identification and traceability system was crucial to restore confidence to business partners in terms of food safety and animal health (both inside and outside the EU). However, until today, a minor number of third countries continue to impose restrictions to EU exports regardless of the recommendations contained in the OIE Terrestrial Animal Health Code.

Generally, identification and traceability systems were in the past, further developed in importing than in exporting countries. From the trade perspective, the requirements of major importers are the most important as they establish the minimum standards that exporters will need to satisfy to access their markets. For example, major importers with animal identification and traceability systems could establish similar or equivalent WTO-compliant standards for access to their domestic markets. Each importing country enforces its own system based on specific goals while those systems may not be necessarily the same among countries.
Traceability systems applied by major beef importing countries typically respond to needs such as animal disease control and food safety assurances (e.g. in the EU, Japan, Korea). Traceability systems applied by major beef exporters may respond to different needs like increasing market access or in a less extent food safety or animal health (mainly fight against foot-and-mouth disease in Brazil and Argentina or Tuberculosis in New Zealand).

Consumers in European and Asian markets increasingly require traceability protocols. Access to these markets will depend upon demonstrated individual animal traceability.
The EU system has influenced certain third countries in the development of red meat trace back system. However, the EU is not the only major importer demanding animal identification and tractability's import requirements. Some Asian countries (Japan, Korea, and Hong-Kong) ask for animal source and age verification. For many importing countries, the "place of dispatch" does not necessarily imply the source or origin of the animal, therefore not fulfilling the requirements of traceability, and may not be accepted as adequate origin documentation. In terms of traceability and labelling requirements, the consumers of major importing countries (e.g. Japan, Korea) can quickly access information about the animal's sex, breed, birth date and the location where it lived throughout its lifetime and where it was slaughtered by entering the 10-digit number of its unique identification code, which is documented on the package label.

The agreement on animal identification and traceability standards between the EU and third countries is not limited to a BSE perspective, as some of the main EU trade partners enjoy nowadays an optimal health status for BSE. The perspective of regionalization in relation to animal diseases such as foot-and-mouth disease needs also to be taken into account. Regionalization is not only a disease control tool but also a Trade Facilitation tool. It allows trade in animals and animal products with a country or regions affected by a major disease from those regions which are considered to be free and are able to ensure safe trade. This policy allows trade flows to continue into the European market, particularly from developing countries or emerging economies, regardless of the presence of major animal diseases in their territory. Regionalizing a country implies that the system of animal identification and traceability is able to ensure that the animals (or their food products) to be exported, are coming only from safe areas. The EU has been one of the most proactive actors in promoting regionalization at the international level and it has provided regionalization to a large number of trade partners for important animal diseases. A clear example is the policy followed by the EU in certain South American countries regarding foot-and-mouth disease. With other trade partners, the EU has promoted a policy of regionalization for other animal diseases such as Classical Swine Fever, Newcastle Disease or Avian Influenza. Unfortunately, only a few of these trade partners have accepted to apply regionalization to EU exports despite the identification and traceability systems in place.

3. Major challenges for international trade of genetic material

The EU has always been a major exporter of genetic material and technology-related worldwide. Recently, new trade barriers are sometimes imposed based on animal health grounds making international trade in genetic material more difficult.

Currently there is a comprehensive set of animal health standards in place for conventional pathogens so that international trade is allowed without putting at risk the health status of the importing country. As a matter of sample we could refer to the recommendations contained in the OIE's Terrestial Animal Health Code (OIE is the World Organization for Animal Health). The OIE is recognized by the World Trade Organization (WTO) as the International Setting Standards Organization (ISSO) for animal health. In these cases when disputes between trading partners appear, ISSOs clearly state for these pathogens when (and when not) safe trade can take place.

In other cases, the problem does not lie in the lack of international standards, but on the fact that importing countries ignore these recommendations and decide to go "beyond" resulting in unjustified import restrictions. This is the case for "conventional pathogens" like BSE (Bovine Spongiform Encephalopathy, the so-called "mad cow disease"), Bluetongue, Bovine herpes virus infection , Infectious Bovine Rhinotracheitis, or Bovine Viral Diarrhoea (BVD) for which some international recommendations exist for safe trade of genetic material. In some cases the attitude importing countries can be understood from the perspective of consumer protection policy "in excess" however in other cases, this policy from a simplistic perspective of protectionism towards the domestic production vis-à-vis imports from third countries.

As a matter of sample, BSE has been a major problem not only for international trade of genetic material but also for live animals (selected breeds) and some third countries still continue to apply import requirements going beyond international OIE and imposing unjustified import restrictions or even worst, import bans.

Other "conventional pathogen" is FMD (Foot-and-Mouth disease) where during the outbreak occurred in 2001, some third countries refused to recognise zoning as applied in the EU and resulting on banning the whole Member State or even worse, the whole territory of the EU. Even if the EU managed quickly to re-establish its free status in relation to FMD, today, 10 years after the last outbreak, some third countries continue to impose unjustified restrictions on EU exports of genetic material and live animals.

However, in the recent years, EU exporters have noted an increase in trade barriers not based on conventional pathogens but on "emerging pathogens". For the latter, there would be a lack of international standards making it more difficult to solutionate trade disputes since no international trade recommendations or guidelines are available.

As an example we may cite the case of Leptospirosis (Leptospira interrogans and Leptospira borgpettersenii) where some third countries ask unjustified import requirements for certain products like bovine semen, including treatment with antibiotics for an excessive and prolonged time. In this case, There is no international standard set as the pathogen does not meet the criteria to for setting an international standard by the international standard organisation for animal health (OIE). In such a case, there should not be any trade conditions set in relation to leptospirosis. The EU is following this approach since the EU legislation does not require such a condition for imports of bovine semen into the EU. Unfortunately, some trading partners have set import conditions for leptospirosis without any justification, meaning that EU exporters are subjected to additional requirements in order to have access to such markets.

But the clearest example can be found with previously unknown virus found in ruminants (cattle, sheep and goats), named "Schmallenberg virus" (SBV). This virus has been first identified in some EU Member States already in December 2011. It belongs to a group of known viruses widespread in many areas of the world, which do not represent a source of concern for international trade (SBV is part of the group of viruses of known as Simbu serogroup which includes Sathuperi, Shamonda, Douglas and Akabane). SBV causes mild and transitory non-specific clinical signs in cattle and congenital (present at birth) malformations, mainly in sheep and more seldom in cattle and goats. Affected EU Member States had, in full transparency and considering initial uncertainties, immediately notified the

disease to the OIE, as an emerging disease. Given subsequent scientific findings, the disease has been considered not to meet the criteria for being included in the list of OIE listed diseases. Nevertheless, some third countries continue to keep trade restrictive measures in place due to SBV. Despite that some third countries lifted the ban related to SBV, other third countries continued to impose unjustified restrictions to EU exports of live ruminants and its genetic material and all of these countries were not in a position to demonstrate they were free of the presence of SBV in its territory. Trade in live animals and genetic material has been particularly affected in the EU due to these unjustified restrictions.

Other in addition, barriers having an *"administrative"* nature have also appeared as a major problem for international trade (long delays at border inspection posts, excessive administrative requests and documentation at international border, etc). Not least, environmental and biodiversity reasons have occasioned unjustified trade restrictions in this sector. In some cases those restrictions have as main objective, the protection of national/domestic production against imports from EU Member States. It seems to be a legal gap in the Agreements concluded in the framework of the World Trade Organisation (WTO). For instances, it is not clear whether this type of restriction would fall under the SPS (Sanitary and Phytosanitary) or the TBT (Technical barriers to trade) Agreements or any other. Till the above-mentioned questions are not solved, it will be difficult to challenge these types of trade barriers at international level, resulting on incertitude & unpredictability for operators in terms of international trade.

Finally, certain EU breeder's organisations complain that genomic selection in the EU may be on disadvantage in relation to some third countries where a more important policy of governmental subsidies is in place. The last consequence of this allegedly unfair competition leads to an disadvantageous situation of EU products in certain Member States in relation to products imported from some third countries (usually at lower prices), not only in the EU market but also in markets located in third countries.

4. The future legislation on the zootechnical and genealogical conditions for trade in and imports into the EU of breeding animals and their germinal products

The European Commission recently adopted (2014) a legislative proposal (ref: COM (2014) 4 FINAL; 2014/0033 (COD)] with the objective to set up at EU level the zootechnical and genealogical conditions for trade in and imports into the European Union of breeding animals and their germinal products. This legislative proposal has been presented for discussions to the co-legislators (the European Council and the European Parliament) and it will take some time before a final agreement is reached and before such a proposal is applicable.

The basic principles and main rules of Union zootechnical legislation have shown to be adequate and sufficiently adapted to technical developments in the area of animal breeding and have therefore been maintained in the proposal. However, because the current Union zootechnical legislation is organised vertically according to species, the Commission proposal aims at streamlining existing provisions, drafted in a more precise and consistent language in the format of a Regulation, in order to avoid obstacles to trade resulting from national transposition.

Over the past twenty years, the Commission had regularly meetings with Member States to discuss zootechnical matters in the Standing Committee on Zootechnics, and the proposal considers the comments received by stakeholders. Cross border activities of approved breed societies have been a controversial issue because certain Member States pointed to the differences in national transposition of the underlying Directives. This situation has not changed until the last meeting of the zootechnical working group in February 2012 where the main content, the structure and the new elements of the proposal were presented and discussed. In addition, the Commission has been dealing with numerous problems raised by breeders, breed societies and competent authorities because of different interpretation of the existing provisions by competent authorities in Member States. The European Commission is therefore well aware of the needs of the breeding sector and of the supervising competent authorities. The proposed provisions on official controls in the zootechnical field are fully aligned, with the necessary adaptations, to those proposed, after intensive consultation with stakeholders, by the Commission for a Regulation on official controls and activities in the veterinary field.

The proposed regulation provides in a single legal framework the principles of recognition and listing of breeding organisations, breeders associations and private undertakings, approval of their breeding programmes, entering of animals in herd books, flock-books, stud-books and their classification according to merits, registration of hybrid breeding pigs in registers, performance testing and genetic evaluation as well as the content of zootechnical certificates for breeding animals and their semen, ova and embryos. In addition it provides rules on imports from third countries of breeding animals, their semen, ova and embryos, and the designation of reference centres for breeding of animals. Provisions are laid down in this Regulation to carry out official controls and zootechnical checks and to resolve disputes arising where zootechnical checks disclose non-compliance with zootechnical requirements.

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