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Approved By:
David G. Salmon
Prepared By:
Paris staff

Report Highlights:
Agricultural biotechnology is a very sensitive and controversial subject in France. Consumers lack objective information and mainly hear from extreme pro and con sources. Most French consumers say they are “worried” about agricultural biotechnology, and the government is opposed to it. There is better acceptance among grain producers, feed compounders, and the scientific community. No plants or animals derived from biotechnology are being produced commercially in France, but the country imports genetically engineered feed ingredients. Despite difficulties in conducting their work, basic and applied research in plant and animal biotechnology by French research institutions continues, as well as involvement in a variety of international programs.

Section I. Executive Summary

France does not produce any agricultural products derived from biotechnology, but it imports some, mainly for animal consumption. France's imports from the U.S. principally include soybeans and soybean meal.

In spite of threats by activists, national research projects continue to be conducted in public and private laboratories. French public research institutes are involved in several international projects like the G20 Wheat Initiative.

France's agricultural biotechnology policies are part of the European Union's (EU) policy and regulation framework. National legislation is more restrictive than EU legislation and includes a national ban on genetically engineered (GE) corn, a compulsory field register for GE crop fields, and voluntary non-biotech labeling on food products. In May 2014, the French Parliament passed a law that prohibits GE corn cultivation and authorizes the administration to destroy plots that do not respect this ban. A legal battle over this issue is still ongoing between the government and the French corn growers association. As for animal biotechnology, the government is opposed to it due to ethical and animal welfare concerns.

Overall, agricultural biotechnology is a very sensitive and controversial subject in France. Consumers who mainly hear from extreme pro and con sources say they are "worried" about it, and the government is opposed to it. There is better acceptance among grain producers, animal feed compounders, and the scientific community.

Acronyms used in this report are the following:

ANSES	Agency for Food, Environmental and Occupational Health and Safety
CEA	Atomic Energy and Alternative Energies Commission
CIRAD	French Agricultural Research Centre for International Development
CNRS	National Center for Science Research
DDGs	Dried Distillers Grains
EFSA	European Food Safety Authority
EU	European Union
GE	Genetically Engineered
HCB	High Council for Biotechnology
INRA	French National Institute for Agricultural Research
LLP	Low Level Presence
MT	Metric Ton
MMT	Million Metric Tons
NGOs	Non-Governmental Organizations

Table of Contents

Section II. Plant and Animal Biotechnology

CHAPTER 1 – PLANT BIOTECHNOLOGY

PART A – PRODUCTION AND TRADE

France is active in laboratory research on biotechnology, but no open-field testing is conducted in the country. The last French open-field research project (the Poplar tree species being tested as a bioenergy source) ended in July 2013 when all the trees were destroyed. No GE plants are commercially grown in France, but the country imports genetically engineered (GE) grains and feed ingredients for its breeding sector.

a) PRODUCT DEVELOPMENT

Some GE plants are under development in laboratories in France, but no open-field testing is conducted in the country due to repeated destruction of test plots by activists.

- ***International public research projects***

G20 International Wheat Initiative
During France's Presidency of the G20 in 2011, the action plan of the G20 Agricultural Ministries created the Wheat Initiative. This international consortium gathers public institutions and private companies to coordinate global wheat research. It "aims to reinforce synergies between bread and durum wheat national and international research programs to increase food security, nutritional value and safety while taking into account societal demands for sustainable and resilient agricultural production systems." The International Scientific Coordinator of the Wheat Initiative is a French researcher from the French National Institute for Agricultural Research (INRA).

In 2013, the Wheat Initiative issued a vision document, paving the way for action. This document specifically refers to the use of biotechnology, saying: "Increasing wheat production without agricultural expansion implies that we must increase wheat production on existing agricultural lands. This could be achieved partly by improving wheat yield genetic potential through a better understanding of the physiological traits involved and their interactions with the environment, and via their complementary introduction into new varieties by breeding and/or genetic manipulation".[1]

International Barley Sequencing Consortium
INRA's Genomic Resource Center is part of the International Barley Sequencing Consortium (IBSC), with the objective of physically mapping and sequencing the barley gene space.[2] In October 2012, IBSC published "A physical, genetic, and functional sequence assembly of the barley genome" in the journal *Nature.*

- ***National public research projects***

INRA's news about and actions on GE plants are summarized in the report "Green biotechnologies: paving new paths for agriculture" (available in English). It covers work on various GE techniques (including association genetics and marker-assisted selection, mutations, transgenesis and homologous recombination), the impacts of GE plants, and in vitro culture methods. It provides information on INRA's partnerships and programs, and gives a brief history of biotechnologies.

INRA conducts research programs involving several new plant breeding techniques, including cisgenesis (transferring genes between closely related organisms), agro-infiltration (the technique used to produce the experimental serum that helped cure Ebola victims, and that consists in inducing transient expression of genes in a plant to produce a protein by injecting a suspension of Agrobacterium tumefaciens into a leaf) and reverse breeding (directly producing homozygous parental lines from an hybrid individual).

France's public/private partnership research program, "Green Biotechnology," focuses on crop genomics.[3] More than 300 researchers are involved, from both public[4] and private sectors[5].

INRA is also involved in the national research program called "Invest for the Future" with a total budget of 35 billion euros.[6]

The **Crop Research Institute**[7], funded by farmers, is involved in research on genetically engineered grains. For more details on these projects, see the presentation of its biotech laboratory.

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[1] See INRA's press release
[2] See INRA's press release
[3] Launched in 1999 as "Genoplante" project
[4] INRA, CNRS, CIRAD, the Institute of Research for Development (IRD)
[5] Biogemma, Vilmorin, Euralis, RAGT, Sofiprotéol
[6] In French: *Investissements d'Avenir*
[7] In French: *Arvalis - Institut du Végétal*

The **French Alternative Energies and Atomic Energy Commission** (CEA) has a Life Science Division that combines basic and applied research in the fields of energy and healthcare. Within this division, the Institute of Life Sciences Research and Technologies (iRSTV) carries out projects to examine biological processes on a molecular scale (it especially focuses on proteins). It contributes to more finalized work that is carried out in biotechnologies and in technologies for life science and health.

The **French Agricultural Research Centre for International Development** (CIRAD) uses a number of tools including molecular biology and biotechnology in its research. For example, CIRAD is involved in a regional genotyping, sequencing and cloning platform.[8] Other examples are the Rice Functional Genomics Platform (REFUGE) and the research unit on genetic improvement and adaptation of Mediterranean and tropical plants (AGAP).

- ***Private research***

Several French companies in the seed sector conduct laboratory research on plant biotechnology. Currently, the GE seeds they develop are intended for non-European markets.

- ***Open-field testing***

France used to have the highest number of open-field test plots for GE plants in Europe, but continued destruction of these plots has discouraged both public and private research organizations from conducting research in open fields.

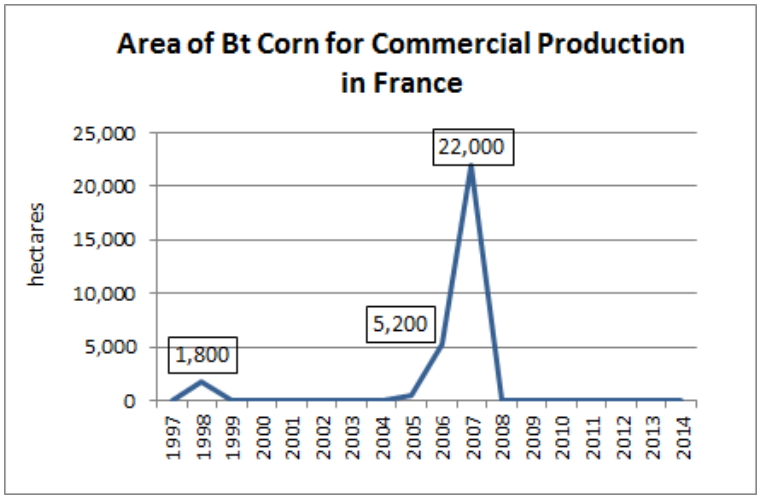
The last GE plant tested in open fields in France was the GE Poplar tree being tested as a bioenergy source by INRA. But their multi-year permit for open-field testing was not renewed by the Ministry of Agriculture and all the trees were destroyed in July 2013. The Ministry of Agriculture was supposed to make its decision based on the advice of the High Council for Biotechnology (HCB). However, the HCB struggled in giving a clear opinion on the renewal of the permit, since its two committees disagreed:

- The **science committee**, made up of 40 scientists, concluded that the test had "no impact on human health and on the environment," and proposed to continue the experiment.
- The **socio-economic and ethical committee**, which gathers jurists and members of environmental NGOs, opined that the objectives of the research were too vague and that it raised "many socio-economic and ethical questions." This committee consequently proposed to put an end to the test.

Despite the destruction of its last remaining open-field test plot, INRA expressed its wish to continue research on GE crops and to propose new field tests in the future.[9]

[8] Together with INRA, universities, CNRS and IRD
[9] More information available on INRA website

b) COMMERCIAL PRODUCTION



MON810 Bt corn is currently the only GE plant approved for cultivation in the EU.

There were 1,800 hectares of GE corn planted in France in 1998, then none during the European *de facto* moratorium between 1999 and 2004. Cultivation was reinitiated between 2004 and 2007 and reached 22,000 hectares before dropping to zero in 2008.

The technical results obtained by corn growers in 2006, with significantly higher yields and lower mycotoxin content than conventional corn, explain the rapid expansion of the planted area in 2007.

Since 2008, cultivation has been banned in France (see Part B - Policy). A legal battle on this issue is still ongoing between the government and the *Association Générale des Producteurs de Maïs* (AGPM), the French corn growers association.[10]

c) EXPORTS

France does not export GE crops/products.

d) IMPORTS

Most of France's imports of biotech products consist of animal feed ingredients, mainly soybeans, soybean meal and dried distillers grains (DDG). The table below gives the U.S. market share in French imports for the last three years (in volume).

	Total French imports 2012/13 (MT)	U.S. market share		
		2010/11	2011/12	2012/13
Soybean meal	2,957,931	1.7%	0.0%	0.5%
Soybeans	532,961	31.3%	6.8%	16.2%
Dried distillers grains	295,436	20.9%	0.0%	0.0%

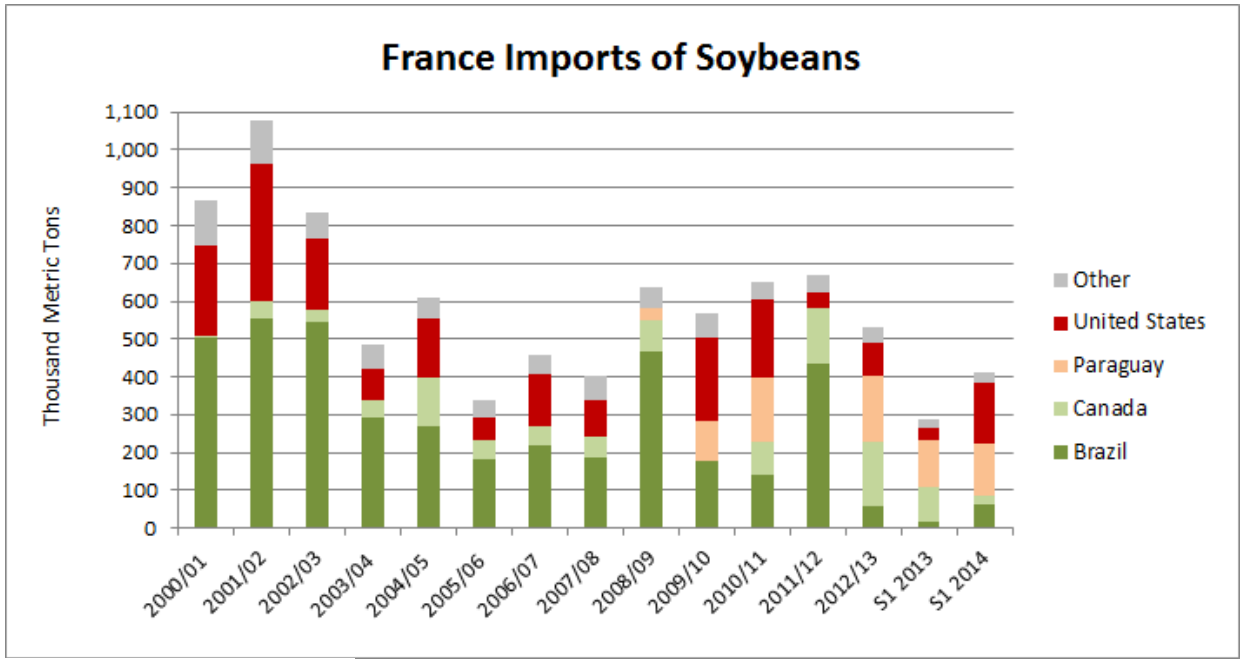
Source: Global Trade Atlas

[10] See Corn Growers Association website

- ***Soybean products***

France is a major importer of soybean products to feed animals in its poultry, swine and cattle sectors. The major drivers of soybean product imports and use in animal feed are limited domestic production of soybean products and substitutes and strong demand for protein to meet basic requirements of compound feed formulations.

France's imports of soybeans (see graph below) represent 500,000 to 800,000 metric tons (MT) per year. The U.S. (39 percent market share in 2009/10, 31 percent market share in 2010/11) and Brazil (73 percent market share in 2008/09, 65 percent market share in 2011/12) are the leading suppliers. In 2012/13, however, Paraguay and Canada topped all suppliers with 33 and 31 percent market shares, respectively. The decision on where to source soybeans from year to year is primarily based on price but quality can also be an element.

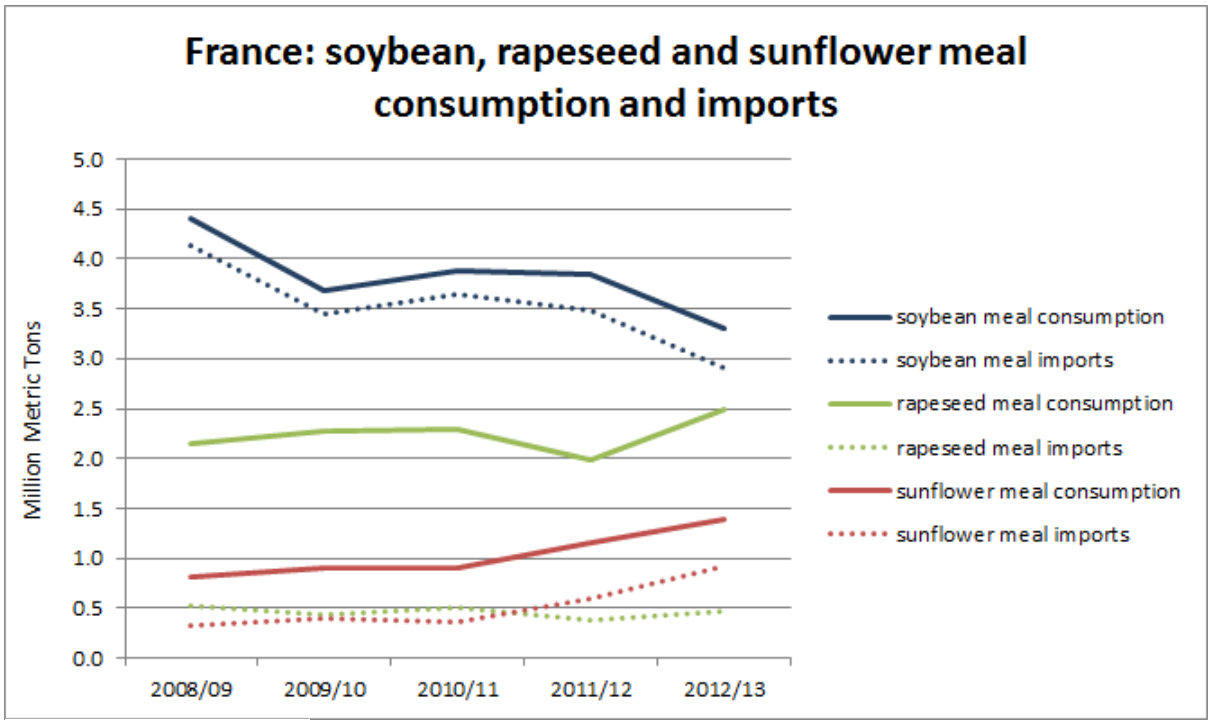


Source: Global Trade Atlas

For the past ten years, the main protein source for France's livestock sector has been soybean meal imported from the Americas. Recently, economic factors, the non-biotech rapeseed meal produced in Europe, and the limited domestic production of soybean meal have favored the diversification of protein sources. The chart below shows that soybean meal still dominates the protein market for feed in France, although annual consumption has declined in favor of rapeseed and sunflower meals during the past few years (25 percent decrease between 2008/09 and 2012/13, from 4.4 to 3.3 million MT). The large majority of it is imported (88 percent or 2.9 million MT in 2012/13), mainly from Brazil (Brazil accounted for 65 percent of total imports of soybean meal on average for the past five years). Around 80 percent of total imports are GE and are labeled as such.

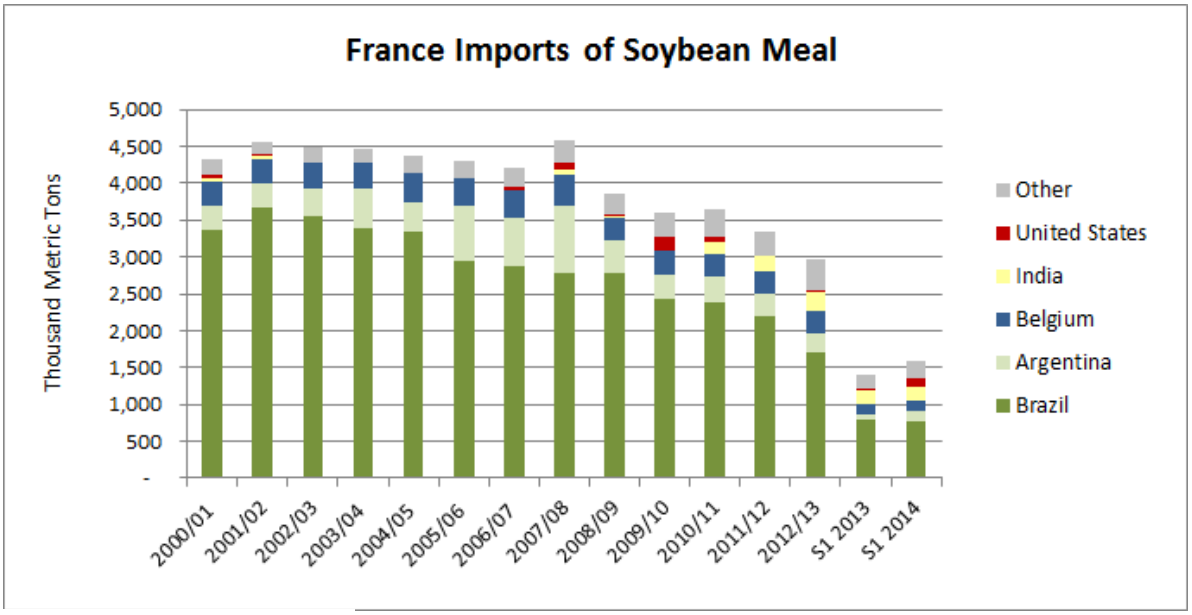
The Government of France seeks to promote domestic sources of protein feed, including domestically-grown rapeseed meal and field pea production. Domestically-grown soybeans remain

marginal relative to imports, but domestically-sourced rapeseed meal has increasingly replaced soybean meal in animal feed. Overall, soybean meal and rapeseed meal accounted for 46 and 35 percent of total meal consumption, respectively, during the 2012/13 October-September marketing year (MY). Sunflower meal has become a direct competitor of soybean meal in recent years in animal feed rations, given its improved digestibility and supply availabilities from the Black Sea area (Ukraine and Russia), which reduced prices. In MY 2012/13, it accounted for 19 percent of vegetable meals consumed in animal feed.



Source: FranceAgriMer

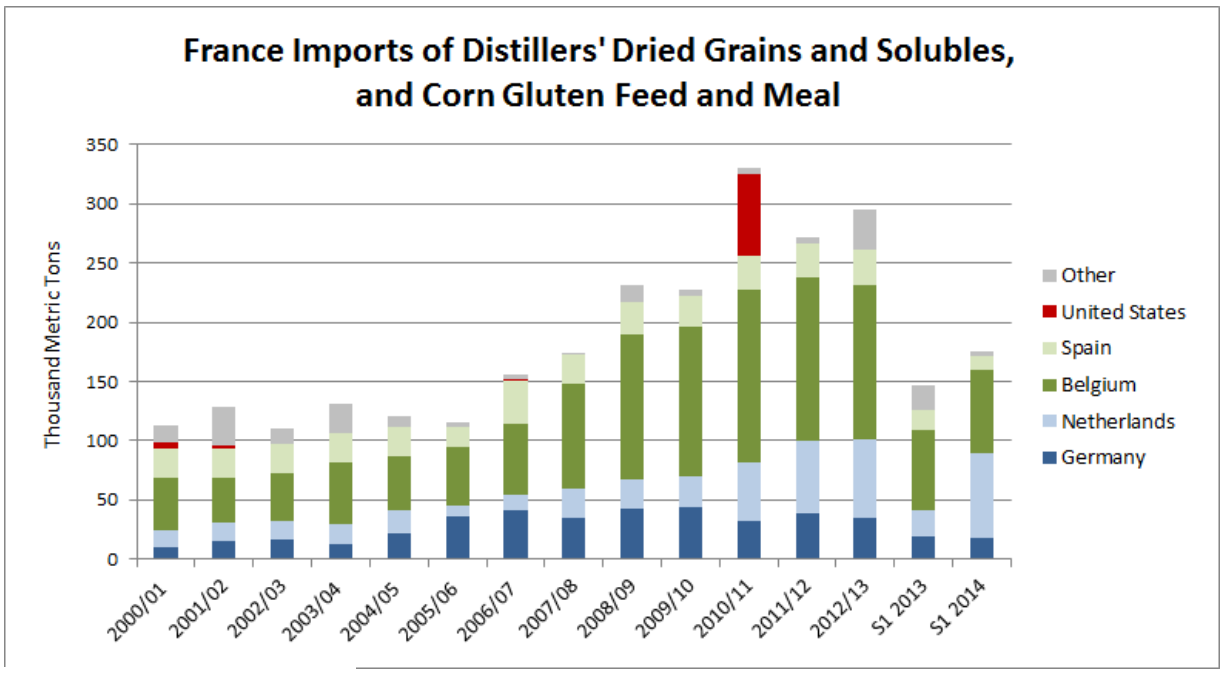
The demand for non-biotech soybean meal is estimated at 20 percent of the total market in France. It is mainly supplied by domestically-grown soybeans and imports of non-GE soybeans and meal from Brazil and India. The graph below gives the evolution of French imports of soybean meal between 2000/01 and the first half of 2014. It is worth noting that the Indian share in French imports of soybean meal increased sharply during the last few years (from 0 percent in 2009/10 to 9 percent in 2012/13). In 2012/13, India overcame Argentina to become France's third supplier of soybean meal. The EU has recently become one of India's top export destinations, with 13.5 percent market share in 2012/13, and France is India's leading export market within the EU, with 37 percent market share in 2012/13. This is mainly due to the high premium for non-biotech soybean meal, estimated at 60 -70 euros per MT, or roughly a 13 percent premium to average soybean meal prices.



Source: Global Trade Atlas

- ***Distillers' Dried Grains and Solubles, and Corn Gluten Feed and Meal***

While the U.S. had become France's leading supplier of Distillers' Dried Grains and Solubles (DDGS) and Corn Gluten Feed and Meal (CGFM) in MY 2010/11, U.S. exports to France have dropped to zero since MY 2011/12. This is due to both their potential content of biotech events unapproved in the EU (especially MIR 162, approved in October 2012) and to significantly higher prices for U.S. DDGS, as a result of the severe drought in 2012 that reduced their competitiveness with other feed ingredients.



Source: Global Trade Atlas

- ***Planting seeds***

No GE planting seeds are imported in France.

e) FOOD AID

N/A (France is not a food aid recipient.)

PART B - POLICY

a) REGULATORY FRAMEWORK

France operates under the biotechnology regulatory framework of the EU. The European Directive 2001/18 provides the framework for the deliberate release into the environment of GE plants. The Regulation (EC) 1829/2003 covers the authorization for placing GE products on the market for food and feed.

i. Responsible government ministries and role in the regulation of GE plants

Several ministries are involved in oversight of GE plants in France:

- The Ministry of Environment has the lead;
- The Ministry of Agriculture deals with cultivation and coexistence, as well as plant and animal health issues;
- The Ministry of Economy's Fraud Control Office (DGCCRF) controls imported products and is involved in low-level presence (LLP) issues;
- The Ministry of Research covers public research programs (for example, most of INRA's budget is funded by the Ministry of Research);
- The Ministry of Health is involved in the impact on human health.

These ministries have a joint website to communicate on biotechnology policies and regulations.

ii. Role and membership of biosafety committee/authority

The French High Council for Biotechnology (HCB) was established by the Biotech Bill of 2008. Its composition and functions were modified in September 2014.[11]

As part of the European approval framework, it is in charge of evaluating environmental risks of biotech products under review for approval for cultivation or commercialization. Since September 2014, it is no longer responsible for health risks.

It has a unique composition of a science committee and a socio-economic and ethics committee. Both committees review biotech dossiers and provide their respective conclusions and recommendations to the Government of France and to the European Food Safety Authority (EFSA).

[11] See decree, September 2014

The composition of the two committees was modified in September 2014 with the addition of a fourth agronomist position to the science committee and the addition of seven new positions to the socio-economic committee that represent consumers, farmers, retailers and seeds producers.

France's National Agency for Food, Environmental and Occupational Health and Safety (ANSES) is in charge of reviewing the food safety aspects of GE crops and their derived products in food and feed. [12] It transmits its conclusions and recommendations to EFSA, as part of the European approval framework.

iii. Political factors influencing regulatory decisions related to plant biotechnology

Biotech opponents have played an important part in the adoption of the regulatory decisions related to plant biotechnology, both directly and through their impact on public opinion (see Part C. Marketing – b. Public / private opinion).

iv. Distinctions between regulatory treatment of the approval for food, feed, processing and environmental release

Since the beginning of the commercialization of biotech plants in the early 1990's, France has authorized biotech imports (due to the need for protein-rich ingredients in animal feeds), but restricted research and banned cultivation of biotech crops.

The process for approval of biotech products is carried out at the EU level, but the French Government has some latitude to implement its own regulations as long as they comply with EU regulations. This is especially visible in the distinction between GE crops used for feed and food use and those relating to cultivation. A large number of biotech events have been approved for feed and food use at the European level and have not been questioned by French authorities. However, France has banned the cultivation of MON810 corn, even though it was approved by the EU.

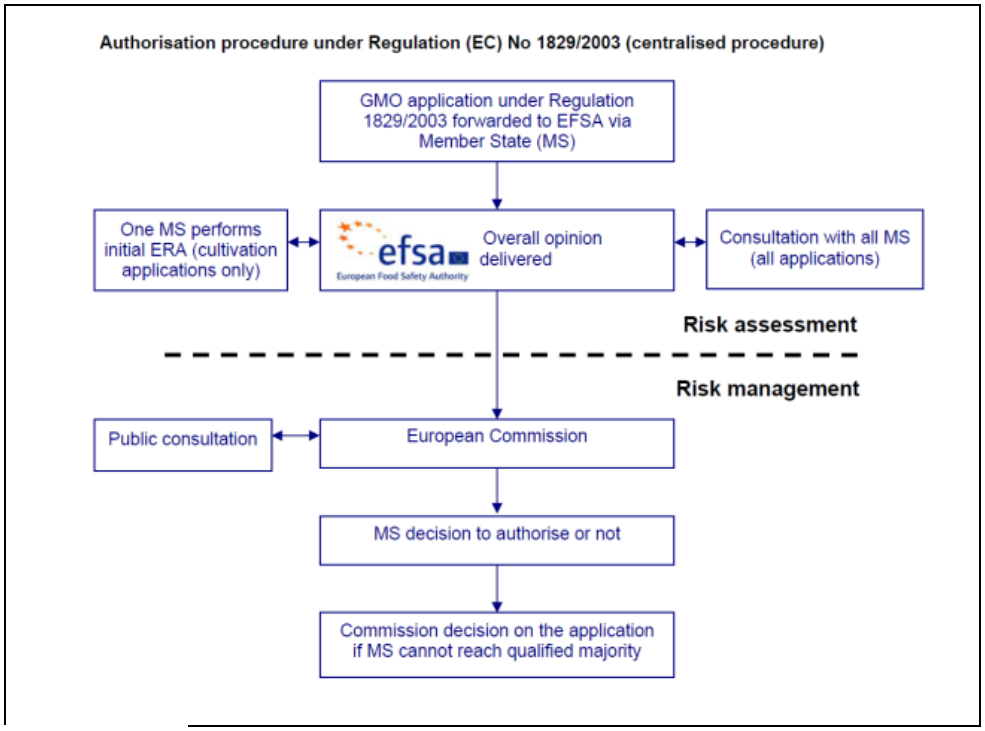
v. Legislation and regulations with the potential to affect U.S. Exports

Legislation and regulations with the potential to affect U.S. trade include the national ban on MON810 cultivation and the non-biotech labeling system implemented at the national level.

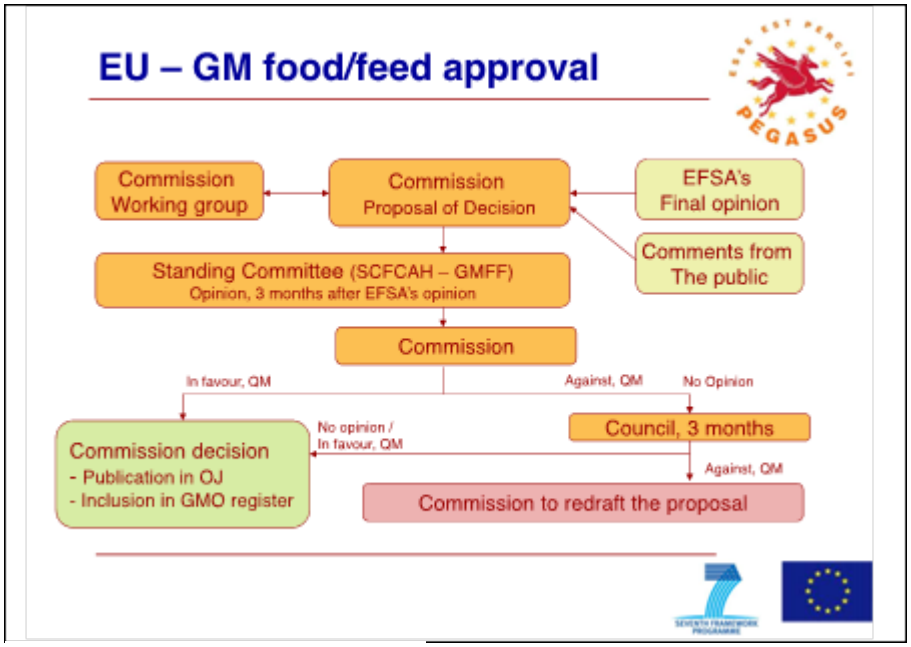
vi. Timeline followed for approvals

The EU-wide authorization procedure is described in the graphs below.

[12] See ANSES website dedicated to agricultural biotech products (in English)



Source: EFSA



Source: Pegasus research project

b) APPROVALS

- ***Food, feed, processing***

All of the biotech events approved for feed and food use in the EU under Regulation EC 1829/2003

are authorized in France. The full list of products is available on the European Commission's website. The list of biotech products pending renewal authorization is available on EFSA's website.

- ***Cultivation***

MON810 corn is the only GE plant approved for cultivation in the EU. In May 2014, the French Parliament passed a law that prohibits GE corn cultivation in France.

c) FIELD TESTING

In France, the deliberate release of GE plants in open environments for research purposes is subject to prior approval by the government, usually through the ministry in charge of the environment. [13] The government must consider the opinion of the HCB regarding possible risks for public health and the environment before granting an authorization. The government must also hold a public consultation on the Internet and provide advance notice to the local authorities of areas where test plots for GE plants are located. The authorization may be amended or suspended if justified by new information.

d) STACKED EVENT APPROVALS

The regulation in place in France is that of the EU. The risk assessment of stacked events should follow the principles provided in EFSA's guidance document, which stipulates that "where all single events have been assessed, the risk assessment of stacked events should focus mainly on issues related to a) stability, b) expression of the events and c) potential interactions between the events."

e) ADDITIONAL REQUIREMENTS

French law subjects the cultivation of GE crops to transparency rules. The location where GE crops are being grown must be declared to the government and this information is entered into a national register, available online.[14] This rule has been controversial, since this public register has been used by activists to locate and destroy open-field trials of GE crops.

French lawmakers therefore established a dual penalty system whereby not declaring the location of GE crops is punishable by a 30,000 euro fine (approximately 39,000 USD) and six months of incarceration, and the destruction or degradation of authorized GE crops is punishable by a 75,000 euros fine (approximately 96,000 USD) and two years of incarceration.[15] The destruction or degradation of GE crops that were planted for research purposes is punished by a 150,000 euros fine (approximately 193,000 USD) and three years of incarceration. However, these penalties have not deterred activists from destroying most open-field trials of GE crops in recent years.

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[13] Environmental Code art. L533-3
[14] Rural Code art. L663-1
[15] Rural Code art. L671-14 and L671-15

In addition to informing the government authorities, a GE farmer is required to notify the farmers of surrounding land of his intention to plant GE crops, prior to sowing[16].

f) COEXISTENCE

French legislation requires that GE plants only be grown, sold, or used "in a manner that respects the environment and public health, agricultural structures, local ecosystems, production and commercial channels labeled as 'without GE plants', and with full transparency." [17] It also guarantees the "freedom to consume and produce with or without GE plants." In order to promote these goals, French legislation aims to limit the spread of GE plants beyond their intended fields. It thus states that the cultivation, harvest, storage, and transportation of GE crops are subject to certain technical rules established by the Minister of Agriculture, after consultation with the HCB and the Minister of the Environment.[18] Rules governing distances between GE crops and other fields are highlighted as being important to avoid the accidental presence of GE plants in other crops. Violations of these technical rules on separation distances can be punished by a fine of 75,000 euros and two years of incarceration.[19] These distance rules have not yet been defined by the Minister of Agriculture.

In addition to the rules discussed above, French legislation provides for "biological monitoring" of French territory, to observe the health of plant life and watch for possible unforeseen consequences of agricultural practices, including the use of GE plants.[20] This is coordinated by the Committee for Biological Monitoring of the Territory, which was created for that purpose by the 2008 law on GE plants. [21] This body submits an annual report to both houses of the French Parliament and can alert the government if it finds that certain unintended consequences require that special measures be taken.

French legislation provides that a GE crops cultivator will be automatically liable when the accidental spread of his plants causes economic harm to a non-GE crops cultivator.[22] If a non- GE crops cultivator ends up having to label his or her crops as GE because of spread from a nearby field, he can seek compensation for the resulting depreciation of his crop's value. It is also mandatory for any cultivator who uses GE crops to obtain liability insurance coverage. In practice, this severely limits the use of GE plants, as insurance companies have been unwilling to cover them in France.

In practice, when GE corn was grown in France, a buffer zone of 24 rows of 50 meters was put in place around the fields. The coexistence research programs in place in France, conducted by Arvalis-Institut du Vegetal and the French Corn Growers Association (AGPM), included the

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[16] Rural Code art. L663-1
[17] Environmental Code art. L531-2-1
[18] Rural Code art. L663-2
[19] Rural Code art. L671-15
[20] Rural Code art. L251-1
[21] Comité de surveillance biologique du territoire
[22] Rural Code art. L663-4

following:

- The POECB (*Programme opérationnel d'évaluation des cultures issues des biotechnologies*, 2002-2004) studied the feasibility of coexistence in real field conditions (from seed to storage facilities), assessing risks based on the results of pollen dispersion studies;
- The PACB (*Programme d'accompagnement des cultures issues des biotechnologies*, 2005-2006) developed and implemented a guide for GE corn cultivation, focusing on risk management;
- A 2007 study surveyed fields commercially planted to GE corn to test the efficiency of strengthened coexistence rules.

Several French research institutes (including INRA and Arvalis-Institut du Vegetal) have been involved in European coexistence research programs:

- SIGMEA (2004-2007) focused on the sustainable introduction of biotech crops into European agriculture and proposed a toolbox for managing crop systems;
- COEXTRA (2005-2009) studied the coexistence and traceability of GE and non GE supply chains and was a decision support system for the feed and food chains.

g) LABELING

- ***European positive labeling***

Under the Regulations EC 1829/2003 and EC 1830/2003 on biotech traceability and labeling, the European policy sets standards for positive (sourced from biotech), but not for negative labeling (not sourced from biotech). Each member state can put in place specific national requirements for biotech-free labeling. France implemented the EC 1829/2003 and EC 1830/2003 Regulations in April 2004.

The Fraud Control Office of the Ministry of Economy, Finance and Industry (DGCCRF) enforces compliance with the regulation and sets general rules for negative labeling. An explanation on biotech labeling regulation is available on the Fraud Control Office's website.

- ***France's national negative labeling***

A biotech-free labeling system has been in place at the national level since 2012 (see explanations by the Ministry of Environment). The system is based on the 2012 decree relative to voluntary "GE-free" labeling and on HCB's 2009 recommendation on the definition of "GE-free" labeling.

The 2012 decree applies to food produced in France but does not apply to imported products. It states that:

- Plant products can be labelled as "GE free" if they contain less than 0.1 percent GE plants.
- For animal products, two thresholds are set and must be indicated on the label: 1) under 0.1 percent is labeled as "fed without GE plants (0.1 percent)," and 2) under 0.9 percent as "fed without GE plants (0.9 percent)."
- Processed animal products, milk and eggs can be labelled as "sourced from animals fed without GE plants (0.1 or 0.9 percent)."

- For apiculture products, biotech plants should be no closer than three kilometers to an apiary.

- ***Private labels – voluntary negative labeling initiatives***

Several voluntary initiatives put in place by the food industry and supermarket chains use "biotech-free" labeling. However, these represent a minor market share of the total French food market.

Canned sweet corn has been sold with a specific "biotech-free" logo since 2004, when the European traceability and labeling regulation for biotech products in food was implemented.

The supermarket chain Carrefour puts a "fed without GMO" logo on animal products sold under the Carrefour-branded name. Animal products concerned are sourced from animals fed with less than 0.9 percent GE plants.

The following market segments among the poultry, beef, pork, and goat cheese industry have committed themselves to use biotech-free feed and label their end products. They have a collective website.

"Fed without GE plants – An Industry Commitment"

The poultry company Loué uses the logo "Fed without the use of GE plants" on ready-to-cook chicken and eggs.

According to the largest French consumer association, the "fed without GE plants" logo has been used marginally by the French food industry. [23] In January 2013, the association surveyed food products labeled with the logo in more than 300 supermarkets and concluded that the logo had limited availability and lacked visibility.

h) TRADE BARRIERS

- ***Safeguard clause***

According to the Directive EC 2001/18, when a member state, as a result of new information, has detailed grounds for considering that an approved biotech event constitutes a risk to human health or

[23] UFC - Que Choisir

the environment, the member state may invoke a safeguard clause on this biotech product, which could be provisionally restricted or prohibited on its territory.

In France, a safeguard clause was initiated on three biotech events: Bayer's Topas 19/2 rapeseed in 1998; Bayer's MS1XRf1 in 2008; and MON810 in 2008, 2012 and 2014.

A legal battle is still ongoing between the government and French corn growers about MON810. The 2008 decree[24] of the Minister of Agriculture that banned the cultivation of MON810 in France was invalidated by the Court of Justice of the EU and the French Supreme Court in 2011. A few months later, the Minister of Agriculture banned its cultivation again[25], and in 2013 following the request of the Corn Growers Association, the Supreme Court invalidated this second decree. Some corn growers then sowed MON810 corn on their farms (a few dozen hectares were planted), but in March 2014, a third Minister of Agriculture issued yet another ban on its cultivation, which was duly appealed by corn growers to the Supreme Court.

In May 2014, the Supreme Court rejected the request of the Corn Growers Association and the French Parliament subsequently passed a law that prohibits GE corn cultivation in France and authorizes the administration to destroy plots that did not respect this ban.[26] In June 2014, the French Department of Agriculture forced farmers that had sowed GE corn before the third ban to destroy their plants. The French corn growers association is planning to sue the Department of Agriculture for destruction of plots that were legally sown.

Public Comments on the GE Planting Ban:

The Ministry of Agriculture held a public consultation before it published this third decree. There were around 12,000 comments submitted during the consultation period.[27] The comments were overwhelming against GE cultivation (most of them were petitions). The main arguments against were that organic and non-GE crop production could not coexist, uncertainty about the environmental and health risks of GE crops cultivation and the application of the precautionary principle, the limited interest of GE crops cultivation by farmers, the fact that farmers would depend on international companies if they cultivated GE plants, and opposition to large-scale agriculture and the defense of small farmers. Some respondents said that imports of GE products should also be forbidden.

The main arguments in favor of GE plants were the technical efficiency of Bt corn (less insecticides used, less mycotoxins in corn, and increased yields), the positive opinions of both French and European food safety authorities, the fact that Bt corn has been cultivated and consumed for 16 years in other countries and the absence of demonstrated environmental and health risks, the competitiveness of French agriculture and higher revenues for farmers, and the fact that organic and GE-free crop production could coexist with GE plants.

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[24] See the 2008 decree
[25] See the 2012 decree
[26] See French Senate
[27] See the results of the consultation on the Ministry of Agriculture's website

- ***Reformulation***

Since the European regulation on biotech traceability and labeling for food and feed has been implemented in France, the French food industry and supermarket chains have reformulated to exclude potential GE ingredients, such as corn starch, soy lecithin, and soy oil.

i) INTELLECTUAL PROPERTY RIGHTS

France supports the Plant Certificate system[28] under the International Union for the Protection of new Varieties of Plants (UPOV), rather than the patent system.

j) CARTAGENA PROTOCOL RATIFICATION

France has signed (in 2000) and ratified (in 2003) the Cartagena Protocol on Biosafety.

The national competent authorities are:
- the Ministry of Higher Education and Research;
- the Ministry of Ecology and Sustainable Development;
- the Ministry of Economy, Finance and Industry;
- the National Agency for Health Safety of Food, Environment, and Work (ANSES);
- the Ministry of Agriculture.

Focal points for France are in the Ministry of Ecology and Sustainable Development (Biosafety Clearing House Focal Point) and Ministry of Foreign Affairs (Cartagena Protocol on Biosafety National Focal Point, Convention on Biological Diversity National Focal Point).

All regulations implementing the Cartagena Protocol on Biosafety are in place.

k) INTERNATIONAL TREATIES/FORA

As a member state of the EU, France's position in international organizations is generally expressed as similar to that of the EU.

In 2011, France chaired the G20, and introduced agriculture among the top issues discussed at the ministerial level. The declaration adopted unanimously by the Ministers of Agriculture of the G20 called for "improved agricultural technologies" and "innovation in plant breeding" to "increase the agricultural production and productivity." Although not specifically indicated, genetic engineering is one of the tools used to accomplish this.

The 2011 action plan of the G20 Agricultural Ministries created the Wheat Initiative, an international consortium gathering public institutions and private companies to coordinate global wheat research.[29]

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[28] In French: *Certificat d'Obtention Végétale (COV)*

l) RELATED ISSUES

Under the new government formed in May 2012, the Ministry of Agriculture has launched an agroecology initiative intended to make French agriculture more environmentally friendly and sustainable. Agricultural biotechnology is not included as a way to address agricultural sustainability.

m) MONITORING AND TESTING

Monitoring and testing is performed by government agents on food products, feed products, seeds and crops in order to make sure that GE products approval and labeling regulations are met. In addition, GE products on the market must be monitored by the holder of the approval in order to detect any potential non-intentional effects linked to GE products[30].

n) LOW LEVEL PRESENCE POLICY

In 2011, a technical solution was put in place by the European Regulation 619/2011 with a tolerance of 0.1 percent in GE feed material authorized for commercialization in a non-EU country and for which an EU authorization request has been lodged with EFSA. A technical solution for food is still pending.

PART C - MARKETING

a) MARKET ACCEPTANCE

Acceptance of GE crops in France must be looked at from the point of view of producers, retailers, and consumers.

Feed grain producers in France, especially corn producers, generally support the use of GE varieties, due to the proven yield gains and lower production costs. French farmers were allowed to cultivate Bt corn between 2005 and 2007, and most of them welcomed the technology. However, due to negative consumer perceptions, acceptance is lower among producers in other sectors where the products are consumed directly, such as vegetables and fruits.

Market acceptance of GE products is high in the animal production sectors and their feed supply chains, including animal feed compounders, as well as poultry, swine and cattle farmers who depend on imported soybean products to make balanced animal feeds.

In France, consumer attitudes towards GE products are strongly negative, with concerns about the potential risks of cultivating and consuming them. In 2012, 79 percent of French people said they were “worried” about the presence of GE products in food[31], and 71 percent of them thought that

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[29] For more details, see Part A Production and Trade a) Product Development
[30] For more information, see the interministerial website dedicated to biotech products regulation
[31] Source: IFOP (French Institute of Public Opinion)

they represented “a significant risk in terms of food safety.” Most of them believe that continued research is needed on this subject.[32]

As a consequence of consumers’ negative perceptions, food retailers, especially major supermarkets, market themselves as carrying only non-GE products. They also fear actions by activist organizations, such as protests and destruction of products in stores, which would generate negative publicity.

b) PUBLIC/PRIVATE OPINIONS

Activist non-governmental organizations have a long history of opposing the cultivation, importation, and consumption of GE crops and products in France. Their actions include the systematic destruction of test plots, the destruction of imported soybean products, and regular communication campaigns. Many of these actions have led to arrests and criminal charges against activists. Courts decisions have varied a lot, with results ranging from acquittals to prison sentences.

Although biotech opponents are usually considered small in number, their communication skills are top-notch and amplified by the media. They strongly influence public opinion. Besides, the public opinion generally expresses distrust of private international biotech companies that are the most visible. Academic and public research exists but is less visible.

c) MARKETING STUDIES

N/A (there are no GE products in the market place to make studies about what is on the shelves)

PART D – CAPACITY BUIILDING AND OUTREACH

a) ACTIVITIES

Activities include visits of government officials, scientists, farmers and industry representatives.

b) STRATEGIES AND NEEDS

Opposition to GE crops and products is strong in France, but GE crops, such as Golden Rice, which provide consumer rather than producer benefits, have changed the dynamic of the debate to some extent. As additional GE traits are developed that provide nutritional or other benefits to consumers, especially when developed by public research institutions rather than private companies, they have potential to begin to change consumer perceptions.

[32] Source: CSA

CHAPTER 2 – ANIMAL BIOTECHNOLOGY

Animals produced through biotechnology in France, using techniques such as cloning and genetic engineering (transgenesis, gene knock-out technology), are mainly used in basic and medical research to study human diseases, to produce organs and therapeutic proteins (from milk and eggs) and to improve animal breeding. The only cloned animals commercialized in the country are sport horses.

PART E – PRODUCTION AND TRADE

a) BIOTECHNOLOGY PRODUCT DEVELOPMENT

The French National Institute for Agricultural Research (INRA) conducts research programs on animal genomics to improve animal breeding. INRA's website on animal genomics tells that "animal genomics is considered to have tremendous potential in the livestock sector as evidenced by recent research on the identification of several genomic zones (Quantitative Trait Loci - QTL) responsible for a decline in the fertility of dairy cows. Likewise, genomic research on sheep has led to the identification of the mutation and unique processes that spur the production of muscle tissue, ultimately producing an animal that yields high-quality meat."

b) COMMERCIAL PRODUCTION

No GE animals for food use are commercialized in France. A French company clones sport horses, in collaboration with Italian industry.

c) BIOTECHNOLOGY EXPORTS

No GE animals are exported from France.

d) BIOTECHNOLOGY IMPORTS

N/A

PART F – POLICY

a) REGULATION

i. Responsible government ministries

As a member state of the EU, France implements the EU Regulation on animal biotechnology. EFSA is in charge of risk assessment,[33] while the European Commission's Directorate General for Health and Consumers (DG SANCO) is in charge of governance and risk management.

[33] See EFSA's website on GE animals and on animal cloning

In France, the High Council for Biotechnology is in charge of environmental risk assessment, while the Agency for Food, Environmental and Occupational Health and Safety is in charge of food safety risk assessment.

ii. Political factors influencing regulatory decisions

France's Government is opposed to using biotechnology in animal breeding, mainly due to ethical and animal welfare concerns.

iii. Legislations and regulations with the potential to affect U.S. trade

France asked the European authorities to put in place a moratorium on clones and their products and a system of traceability and labeling of the products derived from offspring of clones, in line with the position of the European Parliament.

In 2008, the official French Advisory Committee on Food (CNA) to the Ministry of Agriculture released a report on the consumption of products derived from cloned animals and their offspring.[34] This report recommended a ban on the marketing of food products derived from cloned animals or their offspring, cloning practices for breeding, and importing cloned animals and their offspring.

b) LABELING AND TRACEABILITY

Laboratory animals developed are all labeled and traced and are not released into the environment. The exception is commercialized cloned sport horses.

c) TRADE BARRIERS

Public and governmental opposition to the use of animal biotechnology is a barrier to trade.

d) INTELLECTUAL PROPERTY RIGHTS

N/A

e) INTERNATIONAL TREATIES/FORA

The 2012 article entitled "The current state of GE governance: are we ready for GE animals ?" describes international organizations approaches to animal biotechnology as follows:

- The Organization for Economic Cooperation and Development (OECD) and the Codex Alimentarius Commission (CAC) develop guidelines on biotech animals. For example, the CAC developed a "Guideline for the conduct of food safety assessment of foods derived from recombinant-DNA animals."
- The World Organization for Animal Health (OIE) has guidelines on the use of cloned

[34] See the summary of the report, in English or the full report, in French

animals (no specific guidelines on GE animals).

France hosts both OECD and OIE.

PART G – MARKETING

a) MARKET ACCEPTANCE

Market acceptance is low among consumers, industry, and policy makers.

b) PUBLIC/PRIVATE OPINIONS

France's livestock industry doesn't favor the commercialization of cloned or GE animals, but is interested in animal genomics and marker assisted selection for animal breeding.

c) MARKET STUDIES

There are no consumer GE products in the market to allow market studies.

PART H – CAPACITY BUILDING AND OUTREACH

a) ACTIVITIES

Activities include meeting with French authorities and stakeholders to explain the status of animal biotechnology and cloning in the United States.

b) STRATEGIES AND NEEDS

A number of policy makers and stakeholders in France would be interested in getting more up-to-date information regarding the status of regulation, research, and production of cloned animals and GE animals in the United States.