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Report Highlights:
This report describes the trade and production of genetically engineered (GE) plant products, the use of GE animals for research purposes, and related government policies in the Netherlands. An EU-wide overview is provided by the EU Consolidated Biotechnology Annual drafted by FAS Paris.

Section I. Executive Summary:

The Dutch government and agricultural sector have a pragmatic approach towards the import and use of genetically engineered (GE) agricultural products. However, crop trials and commercial cultivation of biotech crops are effectively prevented by cumbersome regulations and by the threat of protests from environmental groups. The Dutch livestock sector depends on feed imports from third countries consists mainly of GE soybean meal. The livestock sector does not include any GE animals nor do Dutch agricultural research institutes have them for research purposes.

Section II. Plant Biotechnology Trade and Production:

a) Product Development

In the Netherlands, there are no genetically engineered (GE) crops under development that will be on the market in the next five years. In 2013, the Wageningen University is planning to start a trial with a GE potato which is resistant against phytophthora. The market introduction of this variety is not expected to be within five years.

b) Commercial Production

In the Netherlands, there are no commercial plantings of GE crops, nor is expected that GE crops will be commercially planted in the next five years. This assumption is based on the cumbersome regulations for approval and coexistence, the threat of protests and limited producer interest.

c) Exports

The Netherlands does not produce or export domestically produced GE crops or products. However, the Netherlands transships imported GE crops and products to other EU Member States and re-exports GE materials to non-EU countries. The transshipped and exported GE materials are documented and labeled as required by the EU legislation.

d) Imports

The Netherlands imports large quantities of GE crops and derived products. Given cultivation is prohibited, the Dutch do not import GE seed. Also imports of GE processed consumer products are small as these products must be labeled. Imported GE crops and derived products are mainly soybeans from Brazil and the United States and soybean meal from Brazil and Argentina (see table below). Which share of these shipments contain GE material is not registered, but estimated to be above 75 percent.

Imports of Soybeans and Meal, the Netherlands (1,000 MT)					
	2008	**2009**	**2010**	**2011**	**2012**
Soybeans					
-Brazil	2,278	2,080	1,392	1,047	817
-United States	1,164	444	1,011	589	763
Soybean meal					
-Brazil	2,497	2,374	3,035	3,122	3,268
-Argentina	2,533	2,249	2,565	2,097	1,422

e) Food Aid Recipient. The Netherlands is not a food aid recipient.

Section III. Plant Biotechnology Policy:

a) Regulatory Framework

As a EU member state, the Netherlands has implemented harmonized legislation regarding agricultural biotechnology. For more information please see the EU Report. The following three Ministries are responsible for implementation and enforcement of the regulatory framework for agricultural biotechnology:

The Ministry of Health, Welfare and Sport (VWS) VWS is the coordinating ministry in the policy-making process in the field of medical and agricultural biotechnology. The VWS is also the central competent authority with responsibility for GE legislation in the area of food.

The Ministry of Infrastructure and the Environment (I&E) I&E is responsible for implementation and enforcement of legislation regarding living GE plants and animals, such as used in laboratory research and feed trials. The responsible ministerial body is the Bureau for Genetically Modified Organisms (BGGO).

The Ministry of Economic Affairs (EZ) EZ is responsible for GE legislation in the feed and seed area. With VWS, EZ plays an important role in the implementation of the EU Traceability and Labeling legislation. EZ has two bodies responsible for enforcement of the legislation regarding biotech feed and food;

-The Netherlands Food and Consumer Product Safety Authority (NVWA). This organization is responsible for documentation and physical control of food and feedstuff imports entering through Dutch ports.

-The Netherlands Inspection Service for Agriculture (NAK). The NAK is responsible for inspection of crops and seed imports into The Netherlands.

The Dutch economy's dependency on trade is the main factor which influences the regulatory decisions in the Netherlands. The Dutch economy is not only based on trade related services, but is also highly dependent on the imported commodities which serve as feedstock for the Dutch food processing and intensive livestock sectors. Regarding the regulatory framework for domestic cultivation of GE crops, however, Dutch politicians are more inclined to follow the Dutch society's sentiment. Current national co-existence regulations practically ban the cultivation of GE events, and even field trials are absent in the Netherlands.

b) Approvals

In general, the Dutch Government follows the advice of the European Food Safety Agency (EFSA) in the approval of GE plant varieties. Please see the EU Report for a list of approved GE events.

c) Field Testing

In 2012, a field trial was planned with the GE potato variety Amflora. This experiment has, however been cancelled by the company as it terminated its biotech activities in the EU. As a result, there were no trials with GE crops in the Netherlands in 2012. Experimental planting of GE crops is almost impossible in the Netherlands. Crop trials are effectively prevented by cumbersome regulations imposed by the government and by the threat of protests from environmental groups. Despite the resistance, in 2013, the Wageningen University is planning to start a trial with a GE potato which is resistant against phytophthora.

d) Stacked Event Approvals

The Netherlands implemented EU legislation, for more information please see the EU Report.

e) Additional Requirements

The Netherlands implemented EU legislation, for more information please see the EU Report.

f) Coexistence

In 2004, the Dutch agricultural sector and NGOs jointly presented their coexistence agreement to the Dutch Ministry of Agriculture. Some sector sources believe that the combination of restrictions will practically ban the cultivation of GE events in the Netherlands. GE crops could also potentially be banned on a municipal or regional level. In November 2012, the Dutch city of Nijmegen banned GE crops being cultivated within city limits. Nijmegen has one agricultural patch of land but this initiative could create a precedent for other municipalities or a province.

g) Labeling

The Netherlands implemented EU legislation, for more information please see the EU Report.

h) Trade Barriers

The slow approval process of new GE events by the European Union has significantly affected U.S. exports to the Netherlands of in particular corn, corn gluten feed (CGF) and Distillers Dried Grains (DDG). Impracticable EU regulations for the Low Level Presence (LLP) of GE materials have permanently affected the import of U.S. rice. Mandatory labeling of the presence of GE ingredients in food caused processors to avoid crops of which GE varieties are planted. This affected mainly the sourcing of vegetable oils, by which soybean oil was eliminated from the food ingredient list.

i) Intellectual Property Rights. Not applicable, domestic planting of GE crops is absent.

j) Cartagena Protocol Ratification

In the Netherlands, the Ministry of Infrastructure and the Environment (I&E) is responsible for the implementation of the Cartagena Protocol on Biosafety (CPB). The Netherlands has enforced the Protocol through the implementation of EU directives in the Genetically Modified Organisms Act.

k) International Treaties

The Netherlands has contributed to the work undertaken by the OECD on risk assessment and risk management. In general, the Dutch Government has the opinion that the regulations must be workable for the private industry and enforceable by the authorities.

l) Related Issues

The Dutch Government supported the use of socio-economic criteria for the approval of producing GE products. As such, national Member State regulations should be conclusive, applying socio-economic criteria. The current government moved away from this position and has the standpoint that the approval process should only take the safety of the GE variety into account.
The new plant breeding techniques (NBTs) is another dossier which has the strong attention of the Dutch Government. On June 6, 2013, the NBTs were briefly discussed by the Dutch Parliament. The majority of the parliamentarians supported the exemption of cisgenesis from EU GE legislation. The support is based on the importance of the NBTs as propagation tool for the Dutch plant breeding sector.

m) Monitoring and Testing

The Netherlands Food and Consumer Product Safety Authority (NVWA) is actively testing feed and food imports on the presence of GE materials. The Dutch regulations for labeling, Low Level Presence (LLP) of GE events, and sampling and testing are based on EU legislation, for more information please see the EU Report.

n) Low Level Presence Policy

The Dutch regulation for Low Level Presence (LLP) is based on EU legislation, for more information please see the EU Report. Besides a LLP regulation for unapproved GE varieties in feed the Dutch Government supports a technical solution for the zero tolerance for unapproved GE events in food.

Section IV. Plant Biotechnology Marketing Issues:

a) Market Acceptance

Because GE crops plantings are absent and GE labeled food products are scarce, Dutch citizens as well as consumers are not conscious of the developments in agricultural biotechnology. If GE crops will be planted and GE labeled food will be put on the market in the Netherlands NGOs will protest and instigate consumer unrest.

b) Public/Private Opinions

The Dutch Farmers Organization (LTO) is pragmatic and in favor of planting GE crops. But points to the resistance of retailers and consumers towards food products containing GE components, in particular in export markets such as Germany.

The Dutch intensive livestock sector depends on feed imports from third countries, mainly soybean meal, which for a major part is GE. There is no resistance by consumers as this meat produced with GE feed does not have to be labeled.

Plantum NL, the association for Dutch plant breeding and propagation sector has the opinion that the current EU legislation offers sufficient leeway to exempt new breeding technologies from the current EU restrictive legislation for GE crops. Plantum NL has further the position that biological material protected by patent rights should be freely available for the development of new varieties.

c) Marketing Studies

In 2006, the Dutch advisory body Commission Genetic Modification (COGEM) published a report, which discusses six new plant breeding techniques: New techniques in plant biotechnology.

Section V. Plant Biotechnology Capacity Building and Outreach:

a) Activities. No USDA funds have been allocated for capacity building or outreach activities.

b) Strategies and Needs

FAS The Hague has indentified the following strategy for plant biotechnology capacity building and outreach:

- Promote with host government rational policies concerning adventitious presence of non-approved GE events.
- Maintain contact with host country livestock producers on the problem of feed availability. Serve as a ready source of unbiased, scientific information.
- Nominate appropriate host country specialists for the International Visitors Program, and utilize other Public Diplomacy programs.
- Work to get U.S. specialists invited to seminars in host countries. FAS The Hague feels that U.S. farmers, producer groups, academics and scientists, are most qualified to objectively address their views on biotechnology in crop production and will be listened to by the press and consumers.

Section VI. Animal Biotechnology:

a) Biotechnology Product Development

In the Netherlands, there are no genetically engineered (GE) animals under development that will be on the market in the coming five years. In the beginning of 2012, however, the Wageningen University requested a license for the development of GE mother chickens. The male eggs of these GE chickens will contain a fluorescent gene by which they can be separated from the female eggs. This technique has supposedly economical and ethical advantages as it will end the hatching of the male eggs and killing of the hatched male chicks. A license will only be granted if the technique will not negatively affect the welfare of the animals, and no ethical objections exist (see for more information the section Animal Biotechnology Policy). As both conditions are fulfilled, the Dutch Committee on Animal Biotechnology (CBD) advised the GONL to grant the request. On June 6, 2013, the Dutch Minister of Agriculture, Sharon Dijksma, informed the Dutch Parliament that she is planning to follow the advice of the CBD. As the majority of the Dutch Parliament was adamantly against the Minister's intention, it is however not anticipated that the GONL will grant the request.

b) Commercial Production

In the Netherlands, there are no GE or cloned animals used for commercial use. GE animals are authorized for use as laboratory animal for medical research at universities and academic hospitals. Annually, 15 to 20 licenses are granted. The largest group of GE animals is mice. The Dutch livestock sector does not keep GE animals nor do agricultural research institutes in the Netherlands keep them for research purposes.

c) Biotechnology Exports

As domestic production of GE and cloned animals does not exist, the Netherlands doesn't export domestically produced GE or cloned animals or their reproductive materials. However, the Dutch livestock and dairy most probably imported and further traded semen and embryos from cloned animals. The export documentation does not declare the reproductive material is sourced from cloned animals.

d) Biotechnology Imports

The Netherlands has likely imported semen and embryos from cloned animals. The specific quantity of these imports is not available.

Animal Biotechnology Policy

a) Regulation

Currently, the Dutch Government has regulations in place for the genetic engineering of animals, but not for the practice of cloning animals. Organizations which want to use GE animals for medical research need to request a license from the Dutch Ministry of Economic Affairs (EZ). The Animal Experiments Commission (DEC) assesses the incoming license requests for biomedical research experiments. The Dutch Committee on Animal Biotechnology (CBD) assesses the other incoming license requests. These licenses are granted only if the genetic engineering does not have any unacceptable consequences for the animal's health and welfare. Nor should there be any ethical objections against the proposed application. The rules for a biotechnology application request are laid down in the Animal Biotechnology Decree. The Netherlands Food and Consumer Product Safety Authority (NVWA) enforces these regulations.

In addition to a license granted by the Minister of Agriculture, institutes or corporations wanting to make, reproduce, keep or transport GE animals also need a license from the Minister of Infrastructure and the Environment, who assesses the project's potential adverse effects on humans and the environment. This requirement is based on the Decree on Genetically Modified Organisms.
The Dutch Government has the opinion that trade restrictions for products derived from offspring of

clones will seriously disrupt the import of agricultural and food products from important trading partners such as the United States. The subject has however become a political sensitive issue in the EU as well as in the Netherlands.

b) Labeling and Traceability

The Netherlands implemented current EU legislation, for more information please see the EU Report. As part of or in addition to EU legislation, the Dutch Government wants to implement a traceability scheme for reproductive material.

c) Trade Barriers

Currently there are no trade barriers related to animal biotechnology. Future legislation could, however, introduce barriers.

d) Intellectual Property Rights

The Netherlands implemented EU legislation, for more information please see the EU Report.

c) International Treaties

The Netherlands implemented EU legislation, for more information please see the EU Report.

Animal Biotechnology Marketing

a) Market Acceptance

Dutch citizens and consumers don't support the use of cloning and genetic engineering technologies by the agricultural sector. These practices are also not accepted by the majority of the Dutch livestock and dairy farmers, breeders and even not by the leading Dutch researchers.
In the Dutch society and government there is no consensus on what is ethically acceptable if such technologies are applied in the medical sector. This is why the Committee on Animal Biotechnology assesses all incoming license requests. Assessments are made on a case-by-case basis. These will eventually have to result in clear guidelines on what is or is not ethically acceptable in research involving cloning or genetic engineering of animals. So far, only GE animals were authorized for use as laboratory animal for medical research at universities and academic hospitals.

b) Public/Private Opinions

For the public acceptance of cloned and GE animals see under paragraph a. Government and livestock sector representatives are in general educated on the subject but are not supportive to the use of cloning. Their policy is based on the public's aversion to the technique.

c) Market Studies

The Dutch advisory body Commission Genetic Modification (COGEM) investigated if the legislative framework and procedures in the Netherlands and Europe are equipped to deal with the market introduction of GE animals. In January 2012, the report was published: Genetically modified animals: a wanted and unwanted reality.

Beginning of this year, the Ministry of Economic Affairs held a public consultation on the use of cloning for agricultural practices. The study was conducted through online discussions between randomly selected citizens. The main conclusion of the consultation was that the public wants to be informed if the meat is produced from the prodigy of clones. The study will be as used input for formulating the position of the Dutch Government. The final report of the study is not public.

Animal Biotechnology Capacity Building and Outreach

a) Activities

-On September 28, 2011, FAS The Hague accompanied Diane Wray Cahen (FAS/OASA) on meetings with the Dutch Government, the Dutch livestock sector and the Dutch retailers organization.
-FAS The Hague, selected two candidates for the EU Voluntary Visitors Study Tour of USA: Animal Biotechnologies, from January 27 to February 8.
-FAS The Hague is planning to organize an outreach event on the VIV Utrecht, an intensive animal livestock trade show, in May 2014.

b) Strategies and Needs

FAS The Hague opinions that more education of all the involved stakeholders is necessary. Education should focus on the benefits of the technique but in particular on the negative implications resultant from enforcing restrictive measures. This would be best achieved creating an alliance with other countries which use the technique of cloning in livestock farming.