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Report Highlights:

Morocco's debate on biotechnology continues without much progress. The general attitude towards genetically engineered (GE) crops in Morocco remains hostile. Biotechnology continues to be a politically sensitive subject in Morocco. In 2008, Morocco circulated a draft law to regulate the introduction, use, and marketing of biotech products. However, the law was dismissed in 2011 with no further updates. Morocco tolerates biotech products for use in its animal feeds sector but bans genetically engineered (GE) products for human consumption. In April 2011, Morocco ratified the Cartagena Protocol on Biosafety, and in June 2012 approved the Nagoya Protocol on Access and Benefit-sharing. FAS/Rabat continues to work with Moroccan institutions to build their biotechnology research capacity and enhance bilateral cooperation on biotechnology issues of mutual interests.

Section I. Executive Summary:

Biotechnology is a politically sensitive issue in Morocco as many negative perceptions have spilled over from its geographical neighbors in Europe. Morocco's heavy dependence on the EU market as the main destination for its agricultural exports has created reluctance among policy makers and producers for the acceptance of biotechnology products. The scientific community in Morocco is relatively advanced and clearly understands that biotechnology has much to offer the developing world, but the application of science-based public policy remains a challenge. Although there is a National Biosecurity Committee (NBC) that was officially formed in April 2005, currently there is no legal framework for biotechnology in Morocco.

In 2008, Morocco circulated a draft law to regulate the introduction, use, and marketing of biotech products. However, the law was dismissed in 2011 with no further updates. Morocco tolerates biotech products for use in its animal feeds sector but bans genetically engineered (GE) products for human consumption.

In April 2011, Morocco ratified the Cartagena Protocol on Biosafety. The ratification of the protocol, which entered into effect in July 2011, should help accelerate setting up a legal framework for biotechnology in Morocco in the coming period. According to the Moroccan constitution, the international treaties and protocols to which Morocco is a signatory supersede national legislations. In February 2013, Morocco published its National Biosafety Framework. This followed the National Office for Food Safety (ONSSA) takeover of the functions of the NBC in October 2011.

On December 9, 2011 Morocco signed the Nagoya Protocol on Access and Benefit-sharing. The Moroccan Government Council and the Ministerial Council approved the protocol respectively on March 22 and June 17, 2012. Recently, the Moroccan parliament approved the Protocol, which is considered the last step of the approval process. Morocco adheres to the Protocol strategic plan effective 2011-2020, which represents its expression of explicit consent at the international level. To date the Government of Morocco (GOM) has not deposited its ratification instrument, and the protocol has not gone into effect.

Imports of biotech seeds for planting are currently not allowed into Morocco and a "GMO-free" certificate is required for customs clearance. FAS/Rabat continues to maintain close working relations with Moroccan government officials handling biotechnology to avoid trade disturbances and prevent any potential restrictive regulations. U.S. government programs such as the Cochran Fellowship Program and Borlaug Scientific Exchange are used to promote Moroccan scientists' knowledge about biotechnology and set the stage for a wider acceptance among regulators.

Lastly, no GE or cloning is underway in Morocco's livestock production.

Section II. Plant and Animal Biotechnology:

Chapter 1: Plant Biotechnology

Part A: Production and Trade:

a) Product development:

Morocco has not developed any biotechnology crops to date, including seeds or other propagation materials. There are, however, several Moroccan organizations conducting specific research projects.

The Moroccan scientific community has shown a strong interest in the subject and many research institutions have invested to get the tools needed to promote their work in this type of research. The scientific community in Morocco is even trying to push this type of research to the stage of industrialization. Many laboratories have been built over the years focusing and working in this field. The interest in this technology from the research community is great. The National Agronomic Research Institute (INRA) for example, has actively been seeking solutions through biotechnology for widely used crops specific to Morocco such as developing fab bean resistance to orobanche (broomrape), resistance of date palms to Fusarium, and eventually developing drought resistant wheat.

b) Commercial production:

Morocco does not commercially cultivate any biotech crops, including biotech seeds for production.

c) Exports:

Morocco does not export biotech crops/products to the United States or other countries.

d) Imports:

Morocco tolerates the import of biotech products for its animal feed, though, prohibits its use for human consumption. The share of biotech material in animal feed shipments is not registered. Morocco's livestock production is dependent upon imported soybeans and corn as a feed protein source. In 2013, Morocco imported from the U.S. the equivalent of US\$ 23.7 million of soybeans, US\$ 15.3 of Corn Gluten Feed, and US\$ 3.9 million of corn feed. The United States is the main supplier of corn gluten, soy meal, and dried distiller's grains with soluble (DDG's).

Imports of planting seeds with biotech events are not allowed into Morocco. There is a mandatory registration of any new planting seeds before the Ministry of Agriculture, which will reveal its biotech provenance and therefore the new varieties will not be approved. To our knowledge, no U.S. seed exporters have tried to register biotech seeds. However, in the last few years, Morocco has imported about US\$ 90 million worth of planting seeds annually, with nearly 90 percent coming from Europe. In 2013 Morocco imported US\$ 2.6 million of planting seed from the United States, which accounted for 3 percent of the Moroccan market. The planting seeds coming from the U.S. are mainly for vegetables, watermelon, alfalfa, tomatoes, and Grass.

Part B: Policy

a) Regulatory Framework:

The National Office for Food Safety, (ONSSA) is the authority in charge of implementing regulations and agreements related to biotechnology. The Ministry of Water and Environment is the focal point for environmental safety issues.

Morocco does not have a legislative or regulatory framework related to biotechnology, either for domestic production or for imports of biotech commodities. A draft law regarding the introduction, use, and marketing of biotech products was sent by the Ministry of Agriculture for review to various ministries in 2008. This draft law has been circulating via intra-government agencies for over two years and was rescinded in 2011 by the Ministry of Agriculture for further revision. It is not clear whether this draft law will undergo further modifications or be disposed of and replaced by an entirely new draft. Furthermore, establishing a regulatory framework is currently not high on Morocco's political agenda, and there is little public discussion of biotechnology.

Background and Current Situation

Morocco is still using an internal memorandum dated August 1999 as its legal foundation on which the Ministry of Agriculture rests its claim that biotech products are officially banned from Morocco. This two paragraph memo, signed by subordinates from the Ministry of Agriculture, was issued at a time when various food safety and health related issues were dominating headlines in Europe (GE, BSE, Dioxin, FMD, etc.). It imposes a blanket prohibition on imports of biotechnology products and includes no details on the product coverage, certification, testing, or threshold levels.

This memo causes concerns among agricultural and food importers because of the uncertainties of its implementation. The memo has added significant risk for traders, since it could be used at any time or sporadically. However, this fear has faded since there has not been any mention of the memo for many years now. The reality is that Moroccan imports of biotech commodities, such as corn and soybeans and soybean products, remained undisrupted since 2001.

National Biosafety Committee (NBC)

In October 2011, ONSSA became the competent government authority in charge of implementing regulations and agreements related to biotechnology. Consequently, the role of the National Biosafety Committee has significantly diminished. In April 2005, Morocco created its NBC to provide counseling as to the use, handling, transportation, import, distribution and marketing of biotech organisms. The responsibilities of NBC include national policy, risk assessment, legal framework, and research. The NBC has not been actively performing its function for the last four years.

Concern about the EU

Generally, Moroccans tend to be far more exposed to European (French) positions than to U.S. positions on many issues. Political sensitivities in Europe (including in food safety such as biotech products, dioxin, BSE, and FMD) tend to regularly spillover to Morocco due to the close historical ties to Europe (formerly a French Protectorate). In April 2013, Morocco and the EU started negotiating a Deep and Complete Free Trade Agreement (ALECA). The EU regulations on biotech products and its neighboring policy favor imports of non GE products. Morocco is expected to continue aligning its regulation with the EU.

Morocco's biggest challenge in biotechnology is the misconception that acceptance of biotechnology may negatively affect demand in the EU for Moroccan agricultural exports, especially fruits and vegetables. The leading agricultural exporting groups in Morocco (through which many of the new technologies made their way to Moroccan farms) who would also be the best potential user of biotech seeds are sensitive to biotech issues and reflect the concerns of their European customers. European customers and consumer groups requested on several occasions from their Moroccan suppliers that the exported product be free from GE products (vegetable oil in canned sardines, "GMO free" tomatoes, etc.).

However, the European Union has approved for import more than 50 transgenic products and currently five Member States cultivate a GE corn. Moving the cultivation conversation further, on June 12, 2014, the European Union's Council of Environment Ministers arrived at a political agreement regarding a draft Directive that could facilitate an increase of the number of GE crops cultivated in Member States. If the draft Directive is implemented as envisioned, countries such as the UK could start cultivation of products they have in research, and countries such as Spain will be able to cultivate other varieties of corn.

Morocco's proximity to the EU makes the country highly dependent on the EU as a market for Moroccan agricultural exports. The E.U. also imposed many restrictions with regard to biotechnology to which Morocco has to abide by. But, the wind of change that is now reaching Europe might have a huge impact on the Moroccan decision makers with regard to the future of biotechnology in Morocco.

Morocco's decree # 1-69-169 dated July 25, 1969 is the basic law regulating seed production and marketing. This law instituted a seed varieties catalogue with two lists. Morocco's reluctance for biotech seed approval is driven by EU importers fear of biotech products. The two lists are available under the following link: http://www.onssa.gov.ma/onssa/fr/catalogue_officiel.php
http://www.onssa.gov.ma/onssa/fr/doc_pdf/dahir_1-69-169.pdf

b) Approvals:

The Moroccan Government follows the advice of ONSSA, although there are no approved biotech plants.

c) Field Testing:

ONSSA does not allow field-testing of biotech crops. Although, Morocco's main agronomical research institute (INRA) previously expressed interest in doing field-testing of biotech crops.

g) Labeling:

Biotech labeling is not required. However, for products that are used directly for human consumption (especially canned corn) importers print “BIOTECHNOLOGY Free” on the label to avoid being asked to provide a “BIOTECHNOLOGY-Free” certificate. A product labeled “contains BIOTECHNOLOGY products” is unlikely to clear customs.

h) Trade Barriers:

Morocco does not allow the import of biotech plants for human consumption, though tolerates some varieties for animal feed.

i) Intellectual Property Right (IPR):

Morocco has a legislative framework to address plant and plants protection but does not apply it to biotech crops. In 1997, Morocco issued its basic law # 9/94 for IPR and for plants varieties protection. Morocco enforced the law #9/94 in October 28, 2002 with the publication of various implementing order.

http://onssa.corporate-ce.com/index.php?option=com_content&view=article&id=200&Itemid=138

The Moroccan Ministry of Agriculture has published a list of 76 species for which the breeders’ rights can be protected. The list establishes for each species, the elements that can be protected, under the link:

http://www.onssa.gov.ma/onssa/fr/protection_obtentions_vegetales.php

http://www.onssa.gov.ma/onssa/fr/doc_pdf/lpe.pdf

A more detailed report on IPR (MO3001) in Morocco is available at the www.fas.usda.gov.

j) Cartagena Protocol Ratification:

Morocco signed the Cartagena Protocol on Biosafety on May 24, 2000. The Moroccan Parliament ratified the protocol in April 25, 2011, which entered into force on July 24, 2011. The Ministry of Water and Environment is the focal point, which serves as a liaison for information and compliance. In October 2011, ONSSA took in charge the implementation of the Cartagena protocol.

In February 15, 2013, Morocco published its National Biosafety Framework. Morocco needs to establish its legal framework to draw upon the benefits of the protocol. Morocco’s National Biosafety Framework is available under the link:

<http://bch.cbd.int/database/record.shtml?documentid=104706>.

According to the Moroccan constitution, international treaties and protocols to which Morocco is a signatory supersede national legislations.

On December 9, 2011 Morocco signed the Nagoya Protocol on Access and Benefit-sharing. The Moroccan Government Council and the Ministerial Council approved the protocol respectively on March 22 and June 17, 2012. Recently, the Moroccan parliament approved the Protocol, which is considered the last step of the approval process. Morocco adheres to the Protocol strategic plan

effective 2011-2020, which represents its expression of explicit consent at the international level. To date the Government of Morocco (GOM) has not deposited its ratification instrument, and the protocol has not gone into effect.

k) International Treaties/Fora:

Morocco participates and votes when necessary in international treaties and conventions such as the International Plant Protection Convention (IPPC), or the Codex Alimentarius (Codex). Morocco's position on biotechnology is primarily influenced by the EU, its first trading partner.

l) Related Issues: Not applicable

m) Monitoring and Testing:

Testing for biotech products occurs, though not systematic and remains limited to the point of entry.

n) Low Level Presence Policy: Not applicable

Part C: Marketing

a. Market Acceptance:

Society at Large: The average educated Moroccan consumer tends to get most of the information about biotechnology from the local Arabic and French newspapers but also from the widely accessible European (French) and Middle-Eastern satellite broadcasted TV channels. There is very little exposure to English channels including U.S. channels. Sporadically, written articles on biotechnology are published locally by non-specialized journalists and newspapers and tend to be negative and reflect concerns and fears raised by European media.

Local Food and Feed Industry: Unless the local food processing companies are involved in exports to Europe and they have to fulfill the traceability requirements, the concern about use of biotechnology ingredients is believed to be small as long as the issue is not raised in public. If the issue becomes public, there is a good chance that the government and the food processors will be forced to take measures to reassure the consumer. While currently tolerated by the government, products of biotech crops (corn starch, soya flour, etc.) will likely not be admitted for food use if explicitly labeled as "containing BIOTECHNOLOGY products"

Free Trade Agreement: There is a risk that, if aggressively pushed, the local consumers might perceive the biotechnology products as a direct result of the FTA with the United States, which would be against the United States general policy to promote free trade in Morocco.

b) Public/Private Opinion:

Consumer Organization: The National Federation of Consumers Associations (FNAC) has twenty associations, and most are relatively inactive in the biotechnology segment. The FNAC members are listed under the following link: <http://www.fnacmaroc.org/liste-des-associations/>. To our knowledge, none of these organizations have expressed explicitly and specifically their position about biotechnology issues. The leading consumers associations should be targeted on the medium term to be educated about the benefit and the actual, realistic, risks of biotechnology. Regular spillovers from the EU media tend to provide negative perceptions about biotechnology to leaders of consumer associations.

Government Positions: The government as a whole is still in the process of forming its position on biotechnology. The Ministry of Agriculture, which has the benefit of a number of U.S.-educated scientists, including at high levels, has the most experience with the subject, is most aware of the potential gain for Morocco, and therefore has the highest level of comfort. The Ministry of Agriculture is appreciative and realistic of Morocco's dependence on agricultural imports. The Ministry of Environment has responsibility for biodiversity and therefore is another key Ministry in decisions affecting biotechnology. In this Ministry, as well as in the Ministry of Health and in the Ministry of Higher Education and Research, there are individual scientists who understand the value of the technology, but the GOM position is not yet officially formed. Although biotechnology products have been widely consumed in Morocco (corn and soybeans), the issue remains politically sensitive. Most government officials prefer to deal with biotechnology in non-public ways in order to avoid triggering reactions of EU customers or become a target for local journalists.

c) Marketing Studies: Not applicable

Research: Although there is relatively well-developed biotechnology research in Morocco in various universities, the area of developing transgenic plants has not yet been tapped. Currently biotechnology research includes areas such as tissue culture, vaccine production, fermentation, gene markers, etc. The interest in the technology in the research community is great. INRA actively seeks solutions through biotechnology for widely used crops specific to Morocco such as developing faba bean resistance to orobanche (broomrape), resistance of date palms to Fusarium, and eventually developing drought resistant wheat.

The study under the below link provides a round up on Morocco's plant breeding and related biotechnology capacity: www.globalrust.org/db/attachments/advocacy/570/1/FR_MAR.doc

Part D: Capacity Building and Outreach:

a) Activities

USDA Programs: FAS has an overall strategy to support local interest in biotechnology by enabling dialog between US and Moroccan regulators and scientists and by keeping the Moroccan scientific community informed of developments in biotechnology. While the government avoids confronting the issue, because of the sensitivities with the EU, we believe that Morocco will be in a better position to eventually reach sound public policy regarding biotechnology if it is fully informed of the

benefits biotechnology can provide to its agricultural sector. The Ag Attaché office will continue promoting exposure and increased familiarity of Moroccan regulators and scientists with biotechnology.

Cochran Fellowship Program: The Cochran program has been used to increase the knowledge of key government officials about use and acceptance of biotechnology in the United States. The program was also used to take a multi-disciplinary team from several ministries (Agriculture, Environment, Human Health, and High Education and Scientific Research) to the United States to meet with key officials in APHIS, EPA, FDA, universities, farmer's organizations, U.S. trade organizations, and go through the approval process and the use, distribution, and acceptance of the biotechnology products.

Norman E. Borlaug Fellowship program: The Borlaug program is being used by FAS to provide promising scientists with an opportunity to spend about 6-8 weeks in the United States and work one-on-one with a U.S. scientist in their fields. Participants learn new research techniques, gain exposure to the latest scientific developments in various fields of agriculture, access fully equipped laboratories and libraries, and learn about unique public-private partnerships that help fund agricultural research and science. The program provides the opportunity for scientists and policymakers to establish long-term contacts with U.S. scientists and apply the newly gained knowledge from U.S. laboratories to their research and development programs.

Under this program, three researchers from INRA participated in 2008 in biotechnology trainings at three different American universities. The first researcher went to the University of Virginia Tech to study the identification and cloning of a gene involved in plant-parasitic weed interaction. The second one went to Michigan State University to improve knowledge in wheat genetic transformation, biosafety, and molecular characterization of genetic transformed plants. The third researcher went to Iowa State University to start working on Agro bacterium-mediated transformation on legumes (Fava bean and chickpea).

In 2012, a researcher from INRA went to the University of Missouri to study the development of Septoria tolerant germplasm for wheat. For 2014, Post proposed training on developing new varieties of wheat seed using molecular biotechnology.

b) Strategies and Needs:

Country Specific Needs: Due to the sensitivity of biotechnology in Morocco, USDA should maintain a low profile and continue working to promote biotechnology between scientists and increase the understanding and acceptance of biotechnology among opinion leaders in various government institutions. Most Moroccan scientists view biotechnology as “just another technique” that needs to be mastered and thus offer the best way to promote a science-based position on biotechnology. Key government officials need to be educated and informed about the potential development and use of biotechnology products in Morocco.

Strategy: During the last years, the Ag Office has worked closely with the GOM – via seminars, Cochran and Borlaug training and individual meetings – to help it prepare a trade-friendly regulatory approach to biotechnology. So far, our efforts have been successful in preventing hasty trade-

restrictive measures, and are yielding a cadre of well-informed officials who are gradually developing a position based on science and taking into account commercial realities. In the future, FAS/Rabat intends to build on these past efforts: to enhance Moroccan research capabilities and strengthen regional cooperation; increase linkages with U.S. scientists to further develop expertise among the various Ministries involved in biotechnology and to maintain close personal contacts to help the GOM as it develops its regulatory system.

Chapter 2: Animal Biotechnology

Part E: Production and Trade

a) Biotechnology Product Development:

No animal GE or animal cloning is underway in Morocco.

b) Commercial Production:

There are no livestock clones or GE animals or products for commercial use or production in Morocco.

c) Biotechnology Exports: N/A

d) Biotechnology imports: N/A

Part F: Policy

a) Regulation:

No legislation or regulation related to the development, commercial use, and or import of GE animals or cloned animal product is in place. ONSSA is the authority in charge of animal biotechnology.

b) Labeling and traceability:

Morocco does not allow for the production, sale, or import of GE or cloned animals.

c) Trade Barriers: No country-specific legislation

d) Intellectual Property Rights (IPR): N/A

e) International Treaties/FORA:

Morocco is a member of Codex Alimentarius and the Office International des Epizooties (OIE).

Part G: Marketing

a) Market Acceptance: N/A

b) Public/Private Opinions: N/A

c) Marketing Studies: N/A

Part H: Capacity Building and Outreach

a) Activities: N/A

b) Strategies and Needs: N/A
