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Report Highlights:

Biotechnology continues to be a politically sensitive subject in Morocco. A draft law regarding the introduction, use, and marketing of GMO that has been circulating among government agencies for two years was retrieved by the Ministry of Agriculture for further revisions. It is not clear whether this draft law would undergo further modifications or would be discarded and replaced by a new draft. In April 2011, Morocco ratified the Cartagena Protocol on Biosafety, and in June 2012 approved the Nagoya Protocol on sharing genetic resources. Morocco's approval of these agreements should help accelerate building a legal framework for biotechnology. 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 that was officially formed in April 2005, currently there is no legal framework for biotechnology in Morocco.

A draft law regarding the introduction, use, and marketing of GMO that has been circulating among relevant government agencies for two years was retrieved last year by the Ministry of Agriculture for further revisions. It is not clear whether this draft law would undergo further modifications or be discarded and replaced by an entirely new draft. Recent developments in the biotechnology arena, such as Morocco's approval of two international treaties related to biotechnology, have increased the likelihood that a new and more comprehensive draft of biotechnology law will be undertaken. Moroccan biotech experts indicate that Morocco could follow one of two approaches in designing its new biotechnology law. It could follow a model based mostly on EU legislations or could adopt a model similar to the biotechnology template developed for countries members of the African Union.

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. On June 17, 2012 the Moroccan Government Morocco approved the Nagoya Protocol on sharing genetic resource. With the approval of this protocol, Morocco should have access to genetic resources and to equitable sharing of the benefits arising from their utilization. Morocco, however, would need to establish a legal framework to draw on the benefits of this protocol.

Imports of biotech seeds for planting are currently not allowed into Morocco and a "GMO-free" certificate is required for customs clearance. Certificates provided by breeders and unofficial bodies are accepted. FAS/Rabat continues to maintain close working relations with Moroccan government officials handling biotechnology issues to avoid trade disturbance and prevent any potential restrictive regulations. U.S. government programs such as the Science Fellowship Program, Cochran and Borlaug are used to promote Moroccan scientists' knowledge about biotechnology and set the stage for a wider acceptance among regulators. In 2008, three researchers from the National Agronomic Research Institute (INRA) participated in biotechnology trainings under the Norman Borlaug program.

Section II. Plant Biotechnology Trade and Production:

U.S. Trade Interest in Morocco

According to official trade data, Morocco imported $6,293 million worth of agricultural and food products in 2011, while it exported a total of $3,382 million. Morocco has a close economic and trade relations with the EU, especially France, because of the geographic proximity. Due to their proximity and established trade relations, EU countries control about 30 percent of Morocco's agricultural and food import market and accounts for over 60 percent of Moroccan agricultural exports (mostly fresh fruits and vegetables). By comparison, only about 5 percent of Morocco's exports go to the United States, and includes olives, olive oil, sardines and anchovies, fresh citrus and processed tomatoes.

According to U.S. trade data, Moroccan agricultural and food imports from the U.S. reached a record high of $932 million in 2011. Bulk commodities and intermediary products account for over 90 percent of U.S agricultural products exported to Morocco. Major U.S. agricultural exports include soybeans and soybean products, corn, corn products, wheat (soft and durum), and planting seeds. South American countries such as Argentina and Brazil are also major suppliers of corn and soybeans products to Morocco.

Section III. Plant Biotechnology Policy:

Current Legal Status

Currently, Morocco does not have a legislative or regulatory framework related to biotechnology, either for domestic production or for imports of biotech commodities. A draft of law regarding the introduction, use, and marketing of GMO was sent by the Ministry of Agriculture for review to various ministries (Health, and others) in 2008. This draft law has been circulating intra-government agencies for over two years, and retrieved last year by the Ministry of Agriculture for further revision. It is not clear whether this draft law would undergo further modifications or be disposed of and replaced by an entirely new draft.

Two important developments related to biotechnology have recently taken place and may impact the regulatory framework in Morocco in Morocco. 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 establishing a legal framework for biotechnology in Morocco in the coming period. According to the Moroccan constitution, international treaties and protocols to which Morocco is a signatory supersede national legislations. In addition, on June 17, 2012 the Moroccan Government approved the Nagoya Protocol. With the approval of this Protocol, Morocco should have access to genetic resources and to equitable sharing of the benefits arising from their utilization. Morocco, however, will need to establish a legal framework to draw upon the benefits of the protocol.

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 GMO products are officially banned from Morocco. This two paragraphs memo, signed by subordinates from Ministry of Agriculture, was issued at a time when various food safety and health related issues where dominating headlines in Europe (GMO, 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, which could have been used at any time or sporadically, has added significant risk for traders. 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. In 2011, Morocco imported over 1.7 million MT of corn, valued at $580 million, of which 190,880 MT were from the U.S. About 100 percent of Morocco's imports of soybeans (51,000 MT, valued at $30 million) and soybean meal (490,000 MT, valued at $223 million) was of U.S. origin. Moroccan soybean oil imports in 2011 totaled 495,000 MT, of which 253,000 MT, valued at $330 million, were from the U.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. No U.S. seed exporters, to our knowledge, have tried to register biotech seeds. In the last few years, Morocco has imported about $90 million worth of planting seeds annually, with nearly 90 percent from Europe. The United States accounted for 6 percent of the market and exported mostly planting seeds for vegetables, watermelon, alfalfa, tomatoes, sorghum and fodders.

National Biosafety Committee (NBC),

The National Bio-safety Committee (NBC), which was established in April 2005, is a purely advisory body to the government on GMO issues related to agriculture and food. The NBC is chaired by the Prime Minister or his representative and includes, and has members several ministries. The role of NBC is to provide counseling as to the use, handling, transportation, import, distribution and marketing of genetically modified organisms and will provide the government with suggestions regarding:

- The national policy regarding the genetically modified organisms.
- Emergency actions to take to protect against potential danger from using biotechnology.
- The legal and organizational measures related to biosafety
- Research programs and conditions of use of genetically modified organisms including the necessary isolation measures for protection from the hazards related to research on genetically modified organisms
- Keep up with scientific advancements in the field of bio-safety both nationally and abroad.

Different parties designated by the Prime Minister from the civil society and the private sector that have

interests in the field of environment and consumer protection and belong to the sectors of production and marketing of genetically modified organism products and their derivatives could also participate in the NBC. The Committee can request, for counseling purposes, the attendance of scientists and legal experts from the public and private sector, human and animal health, plant health, environment, and law.

The NBC usually convenes twice a year (October and March) and, if requested by the Chairman, in extraordinary sessions. After the designation of the National Office of Food Safety (ONSSA) as the competent government authority in charge of implementing regulations and agreements related to biotechnology, the role of NBC has significantly diminished and has not been actively performing its function for the last two 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 GMO, Dioxin, BSE, and FMD) tend to regularly spillover to Morocco due to the close historical ties to Europe (formerly a French Protectorate).

Morocco's biggest challenge in biotechnology is the perceived risk 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 (vegetables) are sensitive to the GMO 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 GMO free (vegetable oil in canned sardines, "GMO free" tomatoes, etc.).

The Government of Morocco recently announced that, seed imported under the Temporary Admission Regime (imported to produce crops locally and process them for re-export) must be "GMO Free". This decision clearly aims to reduce EU importers fear of GMO products and officially claim that Morocco does not accept GMO seeds.

Labeling Issues

GMO labeling is not required, but for products that are used directly for human consumption (especially canned corn) importers print "GMO Free" on the label to avoid being asked to provide a "GMO-Free"

certificate. A product labeled "contains GMO" is unlikely to clear customs.

Protocols

As mentioned earlier, the Cartagena Protocol on Biosafety, signed by Morocco in May 2000, was ratified by the Moroccan Parliament on April 25, 2011 and entered in force on July 24. The Cartagena protocol on biosafety is a legally binding international agreement governing the trans-boundary movement of genetically modified organisms (GMO's) resulting from modern biotechnology. The protocol does address mainly the intentional introduction of GMO to the environment and the utilization of GMO as feed food or in processing. Its objective is to ensure safety in the transfer, handling and use of GMO's. The Moroccan National Office of Food Safety (ONSSA) has been designated as the competent government authority in implementing the protocol, while the Ministry of Water and Environment is assigned as the focal point which would serve as a liaison for information and compliance.

In addition, on June 17, 2012 the Moroccan Government Morocco approved the Nagoya Protocol. With the approval of this Protocol, Morocco should have access to genetic resources and to equitable sharing of the benefits arising from their utilization. Morocco, however, will need to establish a clear and transparent legal framework to draw on the benefits of this protocol. It is worth mentioning that ONSSA will also be the government authority in charge of implementing the Nagoya Protocol.

Section IV. Plant Biotechnology Marketing Issues:

Positions on Biotechnology within Morocco

A. Research Community: 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. The National Agronomic Research Institute (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.

B. 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 "GMOs" are published locally by non-specialized journalists and newspapers and tend to be negative and reflect concerns and fears raised by European media.

C. Free Trade Agreement: There is a risk that, if aggressively pushed, the biotechnology products might be perceived by the local consumers 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.

D. Consumer Organization: There are about ten identified consumer associations in Morocco and most are relatively inactive. 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.

E. 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 GMOs'".

F. 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.

Section V. Plant Biotechnology Capacity Building and Outreach:

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 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.

A regional biotechnology meeting to which key contacts from the Agricultural Research Institute in Morocco (INRA) and the Ministry of Agricultural Division in charge of biotechnology was hosted in February 2006 by FAS. The meeting laid the groundwork for increased cooperation between scientists in the region.

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 will 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 will provide 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. (Faba bean and chickpea). The Borlaug program will also provide the opportunity to establish long term collaboration with US and Moroccan scientists.

State Department Embassy Science Fellowship Program

This program brought, in 2007, a research scientist from the United States to Morocco to work with INRA in its biotechnology laboratory in Rabat. The Science Fellow from North Carolina State University provided an opportunity for the Moroccan INRA scientists to learn from the US experience, gain insights into scientific techniques trends in the United States and to establish long-term contacts with a U.S. university.

Country Specific Needs

Due to the sensitivity of the "GMO" topic 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 for the Future

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.