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GAIN Report

Global Agricultural Information Network

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Philippines

Agricultural Biotechnology Annual

Philippine Agricultural Biotechnology Situation and Outlook

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Report Highlights:

The Philippines is a regional biotechnology leader and a model for science-based GE regulatory policy. GE corn has been on sale in the country since 2003, and comprised a fourth of total corn area in 2014. The country was poised to be the first Southeast Asian country to commercialize locally developed GE crops had it not been for a 2012 court decision postponing approval of the already completed Bt eggplant field trials. The case has been elevated to the Philippine Supreme Court which has yet to issue a decision. While commercialization of local GE research has slowed, commercial GE corn production has commenced in Vietnam in early 2015, and Indonesia is expected to commercialize GE corn and sugarcane soon. According to experts, further delays in commercializing Philippine GE research are expected to erode the country's GE regional leadership status, and in general terms, may dampen the long term competitiveness of Philippine agriculture.

Section I. Executive Summary:

The Philippines is host of the 2015 Asia Pacific Economic Cooperation (APEC) and the Philippine Department of Agriculture, Chair of this year's APEC High Level Policy Dialogue on Agricultural Biotechnology (HLPDAB). From June 8-12, 2015, an estimated 150 participants from over 17 economies took part in the APEC Workshop *Fostering the Benefits of Innovation in Plant Breeding and Science Communication*.

Philippine rules governing biotechnology crop regulations are widely recognized as science-based, thorough, and transparent. To ensure human, food, feed, and environmental safety, the regulatory regime requires that risk assessments be conducted in accordance with internationally accepted bodies such as the Cartagena Protocol on Biosafety, the Codex Alimentarius Commission, the Organization for Economic Co-operation and Development, and the UN Food and Agriculture Organization.

GE corn has been on sale in the country since 2003 and in 2014 comprised 26 percent of total corn area. The Philippines was the first to cultivate GE crops commercially in the region (2003). Bt eggplant has completed most pre-commercialization requirements and Golden rice is in the testing stage. As mentioned in previous reports, the Philippines' prominence in biotechnology has made the country a target for domestic and international anti-biotech groups. This opposition in early 2012 culminated in a lawsuit challenging the safety of Bt eggplant. The resulting court decision ordered a halt to GE field tests and has slowed the final approval process. Respondents to the case have all filed petitions to the Philippine Supreme Court (PSC) seeking a reversal of the lower court's decision.

Meanwhile, encouraged by the Philippine GE model (and trained by Filipino scientists and regulators), other developing countries in the Association of Southeast Asia Nations (ASEAN) region recently established their own GE regulations, and have moved forward. Vietnam started GE corn commercial planting in early 2015, and Indonesia is expected to commercialize GE corn and sugarcane soon. According to experts, further delays in commercializing Philippine GE research are expected to continue to erode the country's biotechnology leadership status.

The delay may also impact the country's long term agricultural competitiveness, particularly in the light of trade liberalization initiatives such as the ASEAN Trade in Goods Agreement (ATIGA). Intra-ASEAN competition is enhanced under the ATIGA as tariffs on all products (with exemptions for a few sensitive products such as rice) will fall between zero and five percent in 2015. In addition, imports from ASEAN-Free Trade Agreement (ASEAN-FTA) member countries such as Australia, New Zealand, China, India, Japan and Korea also enjoy reduced tariffs.

Section II. Plant Biotechnology Trade and Production:

a) PRODUCT DEVELOPMENT:

Development of the fruit and shoot borer-resistant eggplant (Bt eggplant) is led by the Institute of Plant Breeding of the University of the Philippines at Los Banos (IPB-UPLB). The Bt eggplant technology was donated by the Maharashtra Hybrid Seed Company to UPLB through a royalty-free sublicense agreement facilitated by Cornell University through the US AID-Agricultural Biotechnology Support Project II (ABSP II). Even though the widely criticized 2012 ruling by the Philippine Court of Appeals ordered the halting of field trials, Bt eggplant remains poised to be the first locally developed GE crop to be commercialized. All relevant field tests had been completed prior the court ruling and respondents to the case have all filed petitions to the PSC seeking a reversal of the lower court's decision.

According to the UPLB’s project completion report submitted to Philippines Department of Agriculture (DA) in 2014, analysis of data generated from the field trials indicate that Bt eggplant hybrid and open-pollinated (OP) varieties provides higher marketable yield potential and lower percentage EFSB-damaged fruits compared to its non-Bt counterpart and commercial hybrid check varieties. The results also suggest that Bt eggplant presents a potentially more environmentally benign alternative to the current excessive use of chemical insecticide in local eggplant production.

For the betacarotene-enriched rice or Golden Rice (GR) project, three seasons of multi-location field trials at four to five locations have been completed. Results reported include consistently high beta-carotene in mature grains stored under ambient temperature however, grain yield is lower than expected. New confined field trials using another event are planned. The GR project is being developed by the Philippine Rice Research Institute (PhilRice), and is supported by the Bill and Melinda Gates Foundation through a grant to the International Rice Research Institute. There is also support from the Rockefeller Foundation, US AID, and the Philippine DA Biotechnology Program. Only after the agronomic and biosafety evaluations are satisfied will approval for commercial propagation proceed.

Bt cotton (using the Bt gene developed in China to fight bollworm in cotton is inserted in Indian varieties) screen house evaluation was completed in 2010, and the confined trial in 2011. The multi-location field test for agronomic performance, adaptability and bio-efficacy in five locations representing cotton production areas in Luzon and Mindanao is expected to be finished in 2015. Evaluation results from the screen house, the confined field experiment and the first year of the multi-location field test indicated the bioefficacy of the Bt cotton hybrids against the cotton bollworm. The Bt cotton technology is being evaluated by the Philippine Fiber Industry Development Administration.

The IPB-UPLB project on the ring spot virus-resistant papaya with a delayed ripening trait completed its first field test. Preparations for the 2nd field test and its eventual varietal registration are still underway.

_ b) COMMERCIAL PRODUCTION:

According to the International Service for the Acquisition of Agri-Biotech Applications (ISAAA), in 2014, the Philippines was the 12th largest country globally in area planted to GE crops with an estimated 800,000 hectares cultivated with GE corn.

Based on data from the Bureau of Plant Industry (BPI), GE corn was planted in over 4.5 million hectares in the Philippines since its introduction in 2003. GE stacked-trait corn (including pyramided traits) has dominated biotech corn propagation since 2003, accounting for roughly 75 percent of all GE corn planted. The following table is based on preliminary data from the BPI and shows area planted at 688,000 hectares.

GM Corn Adoption by Event				
CY 2003 - 2014				
Year	Bt	RR	Stacked	Total
2003	10,769	-	-	10,769
2004	59,756	-	-	59,756

2005	50,009	-	-	50,009
2006	96,800	26,493	4,580	127,873
2007	122,613	120,023	71,279	313,915
2008	81,752	51,485	214,503	347,740
2009	48,038	46,809	232,156	327,003
2010	40,235	8,690	493,599	542,524
2011	21,205	15,038	649,130	685,373
2012	21,693	20,947	686,810	729,450
2013	-	168,450	559,628	728,078
2014*		86,192	602,026	688,218
Total	552,870	544,127	3,513,711	4,610,708

*January 2014-March 2015

Source: Bureau of Plant Industry

As of February 10, 2015, there were six transformation events, unchanged from the previous annual report, approved for commercial production in the Philippines. Approvals for production are valid for five years and renewable for another five years. All approved GE crops are in ten yellow corn varieties approved for feed and food use.

The following table shows overall GE corn areas and how they relate to overall corn production and area harvested. Overall corn production and area harvested in 2014 (January 2014-March 2015) increased 5.34 percent and 1.8 percent, respectively, compared to their 2013 levels. Aggregate GE corn area declined marginally (5.5 percent) from 728,000 hectares in 2013 to 688,000 hectares in 2014, according to preliminary BPI data. In 2014, GE corn accounted for over 26.3 percent of all Philippine corn areas (estimated at over 2.6 million hectares), slightly lower than the 28.4 percent ratio in 2013. Industry contacts claim that GE corn area would be higher, and possibly increased from the previous year's level, if the DA data took into account the use of counterfeit GE seeds. Average yields in 2014 (2.98 MT/hectare) were higher than the previous year's average of 2.88 MT/hectare). GE corn adoption as dictated by GE corn area, however, declined five percent in 2014 from the previous year's level, according to preliminary data from the BPI.

Corn: Philippine Production, Area Harvested & Yield 2003-2014			
	2012	2013	2014
National Prod'n (KMT)	7407	7377	7771
Total Area (KHas.)	2594	2564	2611
Yield (MT/Has.)	2.86	2.88	2.98
% Production Growth	6.25	-0.41	5.34
% Growth in Total Area	1.94	-1.16	1.83
GE Corn Area (KHas.)	729	728	688
% GE/Total Area	28.12	28.40	26.36
Growth in GE Area (KHas.)	44.08	-1.37	-39.86

% Growth in GE Area	6.43	-0.19	-5.47
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*January 2014-March

Source: Bureau of Agricultural Statistics and Bureau of Plant Industry

A study by a local expert reveal the following GE corn macroeconomic farm level impacts:

- Ave. yield advantage of GE corn over ordinary hybrid corn = 19%
- Ave. income advantage GE corn over ordinary hybrid corn = 8%
- GE corn has higher Return of Investment over ordinary hybrid corn = 42%

The same source estimates the total macroeconomic impact of modern GE corn (2011) at US\$399.5 million. There are roughly 350,000 farmers that cultivate GE corn in the Philippines.

c) EXPORTS:

There remains to be no GE crops exported by the Philippines.

d) IMPORTS:

Philippine imports of GE crops and by-products continued to expand in 2014, making an important contribution to the country's national food supply and food security. U.S. exports of these products to the Philippines grew 2% to roughly \$784 million from \$767 million in 2013. The following is a breakdown of U.S. exports of GE crops and products to the Philippines from 2011 to 2013.

CY US Exports to the Philippines (In Thousand \$)			
	2012	2013	2014
Soybean Meal	598,733	605,500	590,000
Feeds & Fodders	83,701	39,200	39,400
Soybeans	24,654	24,600	56,000
Sweeteners	30,226	53,300	73,500
Coarse Grains	3,489	24,000	700
Cotton	8,612	13,500	16,500
Vegetable Oil*	4,995	6,600	7,700
Soybean Oil	828	200	300
TOTALS	755,238	766,900	784,100

*excluding Soybean oil group

Source: U.S. Bureau of Census Trade Data

e) FOOD AID RECIPIENT COUNTRIES:

The Philippines is a consistent food aid recipient (i.e., Food for Progress) and there have been no issues related to biotechnology that impede the importation of food aid commodities.

Section III. Plant Biotechnology Policy:

a) REGULATORY FRAMEWORK:

Philippine biotechnology regulations are well respected for their thoroughness, and are looked upon as a

model by other developing countries. The biotechnology regulatory regime is embodied in the DA's Administrative Order No. 8 (DA-AO8) issued in April 2002. To ensure human, food, feed, and environmental safety, DA-AO8 requires science-based risk assessments be conducted in accordance with internationally accepted bodies such as the Cartagena Protocol on Biosafety, the Codex Alimentarius Commission, the Organization for Economic Cooperation and Development, and the Food and Agriculture Organization of the UN.

DA-AO8 derives legal basis from the Philippine Plant Quarantine Law of 1978, the Agricultural and Fisheries Modernization Act of 1997, existing mandates of the Bureau of Animal Industry and Fertilizer and Pesticide Authority, and Executive Order No. 340 of 1990 (which creates the National Committee on Biosafety of the Philippines (NCBP)).

The Bureau of Animal Industry (BAI) evaluates feed safety while the Bureau of Agricultural and Fishery Products Standards handles food safety concerns. Quarantine and environmental issues fall under the responsibility of the Bureau of Plant Industry (BPI) while the Fertilizer and Pesticide Authority handles applications of pest protected plants. A unique feature of Philippine regulations is the conduct of a parallel review by the Scientific and Technical Review Panel (STRP), an independent body of experts from academia and the local scientific community.

Following are the four types of permits that DA-AO8 issues (refer to Annexes at the bottom pages of this report):

1. Application to Field Test (Annex I)
2. Application to Release for Propagation (Annex II)
3. Application for Importation for Direct Use (Annex III)
4. Petition for Delisting (Annex IV)

The application/approval process for each permit is provided at the end of this report (Annex I-IV).

Permits to import for contained use fall under the purview of the NCBP. The NCBP is composed of several agencies including the DA (as a member), and is chaired by the Secretary of the Department of Science and Technology (DOST). More on the NCBP is provided in the Section on the Cartagena Protocol on Biodiversity (CPB).

The DA-Office of the Undersecretary for Policy & Planning is responsible for crafting, implementing, and oversight of the overall regulatory regime and biotech policy, in consultation with the NCBP. Draft policies are referred to the DA Secretary for approval. The DA also coordinates biotech regulatory activities and interacts with a scientific multidisciplinary group – the Biotechnology Advisory Team, comprised of respected scientists.

BPI is the lead agency in regulating GE crops, drawing scientific support and advice from the NCBP, the other concerned agencies, and the STRP.

b) APPROVALS:

The links to the relevant approval registries are provided below:

APPROVAL REGISTRIES

Name	Subject	Dated
ANNEX I	Approval registry for the importation of regulated articles for direct use as food and feed or for processing	10-Feb-15
ANNEX IA	Approval registry for the importation of combined trait products for direct use as food, feed and for processing	10-Feb-15
ANNEX II	Approval registry of regulated articles for propagation	10-Feb-15
ANNEX IIA	Approval registry for propagation of combined trait products	10-Feb-15
ANNEX III	List of Regulated Articles for Importation for Direct Use Requiring a Declaration of GMO Content	Dec. 15, 2011
ANNEX IV	Approval Registry of Regulated Articles for Field Trial	6-Nov-13
ANNEX V	Registry of unrenewed regulated articles	10-Feb-15

Source: Bureau of Plant Industry

c) FIELD TESTING:

Refer to Annex IV in the APPROVAL REGISTRIES Table.

d) STACKED EVENT APPROVALS:

Refer to Annex IA and Annex IIA in the APPROVAL REGISTRIES Table.

e) ADDITIONAL REQUIREMENTS:

After the transformation event has been assessed and approved by the BPI, seed registration is still required with the National Seed Industry Council under the BPI.

f) COEXISTENCE:

There is currently no Philippine policy on coexistence with non-GE crops, and there are no rules in place or proposed on coexistence.

g) LABELING:

Currently, there are no labeling requirements for GE food products. In its “Draft Guidelines on Labeling of Prepackaged Foods Derived from or Containing Ingredients from Modern Biotechnology,” the PFDA indicated that it will not require labeling for GM packaged foods. The PFDA position is largely based on the Codex Alimentarius standards on labeling as described in the “Compilation of Codex Texts Relevant to Labeling of Foods Derived from Modern Biotechnology.” The PFDA in late 2013 issued a statement attesting to the safety of GE and GE-derived foods, adding that GE foods were substantially equivalent to conventional counterparts.

There are currently at least three bills (i.e., HB 2516, HB 1780 and HB 4192) filed in the Philippine House of Representatives (HOR) calling for GE mandatory labelling. Industry contacts doubt these bills will prosper under the current 16th Congress.

For imported bulk commodities, Philippine regulations require shipments to be accompanied by a “Declaration of GMO Content” signed by one of the following: the responsible officer from the originating country, an accredited laboratory, the shipper, or the importer. DA maintains that the declaration is a part of its food and environment safety regulations, and that it brings the Philippines into compliance with Article 18.2 of the Cartagena Protocol on Biosafety or CPB (i.e., Handling, Transport, Packaging and Identification Requirements for Living Modified Organisms for Contained Use and Environmental Release). Since its implementation, Post is not aware of any trade-related disruption as a result of this requirement. A sample form of this declaration follows:

Declaration of GMO Content

The shipment may contain a GM ingredient:
 Yes _____ No _____

If yes, list the probable transformation events.

Present	<i>To be filled up by the PQS Officer</i>	
	In the Approval Registry	Not in the Approval Registry
_____	_____	_____
_____	_____	_____
_____	_____	_____

[Signature]
 Plant Quarantine Officer

[Signature]
 Responsible Officer from the Country of Origin/Accredited Laboratory/Importer/Shipper

Source: Philippine Department of Agriculture

On the issue of halal certification of GE food products, standards have been liberalized. Foods derived from GE products are now eligible for halal certification, according to the amended Philippine National Standard or PNS 2067/2008 Amd 01:2011. Previously, the PNS for Halal Food did not allow halal certification of GE foods. Currently, only the National Commission for Muslim Filipinos is authorized to accredit halal certification providers in the Philippines.

h) TRADE BARRIERS:

There are no known biotechnology-related trade barriers to U.S. exports.

i) INTELLECTUAL PROPERTY RIGHTS (IPR):

There are no plant patents in the Philippines. The country achieved compliance with its obligations under the WTO-TRIPS agreement on June 2007 with the passage of Republic Act 9168, otherwise known as the Plant Variety Protection Act of 2002 (PVPA).

Under the PVPA, holders of PVP certificates have the right to authorize production or reproduction, conditions for the purpose of propagation, offer for sale, sell or market, and export or import the varieties that they have developed. These rights extend to harvested material resulting from the unauthorized use of their protected varieties – except if the use is by small farmers. Their rights also cover derived varieties (or those varieties predominantly derived from the initial variety that is being protected). Provisional protection may be provided to breeders, entitling them to some remuneration from the time the application is published until the granting of the certificate of PVP. In cases of infringement, the holder of the PVP certificate may petition the regional trial court for relief. As with other intellectual property rights laws, the local courts are relied upon for enforcement.

Under the PVPA, farmers are accorded the traditional right to save, use, exchange, share or sell their farm produce of a protected variety, except when the sale is for the purpose of reproduction under a commercial marketing agreement. The exchange and sale of seeds among farmers is on the condition that these are reproduced and replanted on their own lands.

j) CARTAGENA PROTOCOL RATIFICATION:

The Philippine Senate on August 14, 2006, adopted Senate Resolution No. 92 or the “Resolution Concurring in the Ratification of the Cartagena Protocol on Biosafety (CPB) to the UN Convention on Biological Diversity.” The CPB ratification follows the March 2006 issuance of Executive Order No. 514 adopting the National Biosafety Framework, which was the interim implementing mechanism of the CPB. The Philippine National Focal Point of the Cartagena Protocol is the office of an Assistant Secretary of the Department of Foreign Affairs (DFA).

The NCBP issues guidelines and standards on risk assessment, environmental impact assessment, socio-economic, ethical and cultural assessments. The NCBP oversees the implementation of the National Biosafety Framework (NBF) as well as coordinate and harmonize efforts and activities of the various concerned agencies and departments. The Head Secretariat of the NCBP also acts as the National Focal Point of the Philippine Biosafety Clearing House.

During the September 29-October 3, 2014 Meeting of the Parties to the Cartagena Protocol on Biosafety (COP MOP 7) in Pyeongchang, Republic of Korea, Post facilitated the meeting between the Philippine Delegation and the U.S. Department of State Director for the Office of Agriculture, Biotechnology, and Textile Trade Affairs. The Philippine position, relative to risk assessment and risk management (issues discussed in COP MOP 7), largely agree with that of the U.S.

k) INTERNATIONAL TREATIES/FORA:

The Philippines actively participates in international biotechnology events including Codex Alimentarius meetings as well as the Asia Pacific Economic Cooperation’s (APEC) High Level Policy Dialogue on Agricultural Biotechnology (HLPDAB).

The 2015 APEC-HLPDAB Workshop “Fostering the Benefits of Innovation in Plant Breeding and

Science Communication” was held in Manila from June 8-12, 2015. Around 150 participants from over 17 economies took part in the workshop. Accelerated breeding, precision gene editing and other new breeding techniques being used by public and private sectors in improving agricultural production were discussed, including regulatory policy, challenges and communication strategies (refer to ACTIVITIES under Section V. Plant Biotechnology Capacity Building and Outreach).

l) RELATED ISSUES:

Following is a link to the DA’s biotechnology webpage which provide pertinent GE information and related issues:

www.biotech.da.gov.ph

m) MONITORING AND TESTING:

Monitoring by the BPI of GE crop propagation is handled by the BPI’s Post Approval Monitoring group. The permit to propagate GE crops carries a stipulated provision that require the technology developer to undertake insect resistance management practices (if the approved event is Bt), and/or weed resistance interventions if the event involved is glyphosate-tolerance.

On May 8, 2012, the DA issued Memorandum Circular No. 3 (MC No. 3) or the New Directive on Insect Resistance Management in Bt corn. Effective September 1, 2012, MC No. 3 implements the bag-in-a bag structured refuge strategy by requiring all technology developers and seed developers to package 20% non-Bt corn seeds inside the larger Bt corn seed bag. Testing of the refuge-seeds prior to commercial distribution is conducted by the BPI.

On February 2014, the Philippine DA issued Memorandum Circular No. 2 (MC No. 2) “Enhancing the Insect Resistance Management (IRM) Strategy for Bt Corn Targeting Asian Corn Borer (ACB)”. MC No. 2 updates refuge strategies, among others, and specifies roles of concerned agencies. Following is a link to MC No. 2:

http://biotech.da.gov.ph/upload/MC_IRM_BTCorn_signed.pdf

n) LOW LEVEL PRESENCE POLICY:

In early 2009, the Philippine DA approved Administrative Order No. 1 (AO No. 1) adopting Annex 3 to the Codex Plant Guideline (i.e., “Food Safety Assessment in Situations of Low-Level Presence of Recombinant-DNA Plant Material in Food”) for the conduct of food safety assessment in situations of low-level presence (LLP) of recombinant-DNA plant materials in food and feed. AO No. 1 likewise directs the DA policy and regulatory office to clarify issues and formulate guidelines to implement the LLP policy. To date, no implementing guidelines have been issued. To date, the Philippines has actively participated in the Global LLP Initiative.

Section IV. Plant Biotechnology Marketing Issues:

a) MARKET ACCEPTANCE:

Despite the phenomenal adoption of GE corn technology in the Philippine, there remains a few provinces that maintain anti-GE ordinances. Similarly, while most knowledgeable Filipinos are generally supportive of biotechnology, ‘noisy’ anti-GE groups give the impression they represent a considerable percentage of consumers. In reality, a significant number of Filipinos are either unaware

of the benefits of GE technology, and/or indifferent as to whether a product is GE or not.

b) PUBLIC/PRIVATE OPINIONS:

Despite pronouncements by international bodies such as the World Health Organization, the United Nations' Food and Agricultural Organization, the U.S. National Academies of Science, the American Medical Association, several regulatory agencies around the world, (including the European Food Safety Authority), and over a thousand peer reviewed studies that attest that food derived from GE ingredients is as safe and nutritious as conventional food, activist groups continue to mislead the public.

While local GE-farmers have been vocal in their support for GE crops that are safe, reduce production costs, and raise incomes, anti-GE groups are capitalizing on the current delay in Bt eggplant and Golden Rice commercialization by spreading negative propaganda on the safety of biotech crops. Not responding to the misinformation tends to negatively affect key policy decision makers and public perception. Like the general public, awareness on the truths about GE technology among policy-makers is low.

c) MARKETING STUDIES:

The last known Philippine GE consumer survey was done in 2008 by the Singapore-based Asian Food Information Center. The survey indicated that 59 percent of Filipino consumers had a positive perception of biotechnology, and that 73 percent believe they would benefit from food biotechnology in the next five years, i.e. improved food quality and making food more affordable.

Section V. Plant Biotechnology Capacity Building and Outreach:

a) ACTIVITIES:

Post coordinated with NTPMD/OASA to facilitate the travel and workshop participation of six Philippine delegates to the APEC Workshop entitled "Agricultural Biotechnology Life Cycle" on the sidelines of the High Level Policy Dialogue for Agricultural Biotechnology (HLPDAB) in Beijing, China, from September 14-16, 2014.

On September 15, FAS-Manila participated in the 3rd U.S. Embassy (Manila) Regional Media Seminar (focus on environment, science and technology, and law enforcement). Post provided a speaker on biotechnology and the GM corn experience of the Philippines.

On September 17, 2014, Post brought a delegation from the Development Academy of the Philippines (DAP) to the International Rice Research Institute (IRRI) for a biotech orientation tour. The visit helped the DAP generate ideas in the possible implementation of a Biotech Outreach program.

AgManila also coordinated with the IRRI and NTPMD/OASA in organizing the September 23-24, 2014, Washington D.C. visit and talk of the IRRI's Director General (DG). The DG spoke before a predominantly USDA and USAID audience, on scientific advances that directly impact the future of global rice supplies; the sustainability of intensive rice production systems; and the lives of rice farmers and consumers.

During the 1st Joint Committee Meeting under the U.S-RP Science & Technology Agreement held October 27-28, 2014, FAS-Manila, participated in working group discussions on biotechnology. Other

working groups covered the areas of Climate Change/Disaster Resilience; Health Research; Marine Biodiversity and Conservation; and Improving Science.

The Philippine National Biotechnology Week (NBW) created by Presidential Proclamation No. 1414 series of 2007, is the biggest biotech event in the country, and is held every last week of November. A working committee composed of the Secretaries of the Department of Agriculture (DA), Department of Science and Technology (DOST), Department of Health (DOH), Department of Environment and Natural Resources (DENR), Department of Trade and Industry (DTI), Department of Interior and Local Government (DILG), and Department of Education (DepEd) is co-chaired by the DA and DOST Secretaries (in 2007, and co-chairs may be rotated as decided upon by the Committee on a year-to-year basis). The Committee shall formulate a program for the meaningful celebration of the National Biotechnology Week. The week-long celebration features seminars, exhibits and field trips, among others, held in several locations. The Committee may also call upon other government agencies and non-government organizations to assist in its implementation. The 2014 NBW was held November 24-28, 2014, and was chaired by the Commission on Higher Education.

FAS-Manila also facilitated the Philippine participation to a couple of 2015 biotechnology building activities in U.S. universities. Guided by NTPMD/OASA, Post reached out to prospective participants to the 2nd Annual Biotechnology Literacy Project at the University of California-Davis, from May 31-June 2, 2015. EMP funds supported the participation of two Philippine representatives.

Even before the actual 2015 APEC-HLPDAB Workshop held June 8-12, 2015, Post had been working closely with the NTPMD/OASA in coordinating with the DA in crafting the workshop agenda, activity schedule, topic selection, speaker identification, logistics, etc. Office of Agricultural Affairs Counselor in Manila gave the opening and closing remarks for the workshop. The local participants expressed the need to learn more about the workshop topics to determine if existing GE rules will be appropriate and/or adjustments are needed.

FAS-Manila also helped in the recruitment of a Philippine participant to the 2015 Biotechnology Regulation Immersion Course at the University of Missouri from August 18-28, 2015.

Post will be assisting in Embassy Manila's biotech outreach in late 2015 involving U.S. experts on GE co-existence, as well as on best practices for managing LLP events in agricultural trade.

b) STRATEGIES AND NEEDS:

As mentioned in previous reports, the Philippines' prominence in biotechnology has made the country a target for domestic and international anti-biotech groups. There are no significant GE trade barriers but sensationalized and noisy propaganda by activist groups tend to dampen GE commercialization. Increased awareness on the benefits of biotechnology by policy-makers and the public is expected to raise GE adoption and acceptance.

Local experts say local biotech outreach activities need to be unified, rationalized and institutionalized. While it should focus on key policy decision-makers in identified problem areas in the short-term, a parallel strategic campaign directed at the general public would be ideal. Outreach must be sustained in order to be effective, according to the same source.

The development of a Biotech Outreach Toolkit under the proposed 2014 State Outreach did not push through as planned, but has been resubmitted for EMP consideration. The EMP proposal seeks to address the abovementioned needs. Actual outreach may commence by late 2015 or early 2016, if approved. Post has identified like-minded partners that will implement the outreach toolkit once developed.

Section VI. Animal Biotechnology:

PRODUCTION AND TRADE

a) BIOTECHNOLOGY PRODUCT DEVELOPMENT:

There are no Philippine GE-animals currently under development or expected to be in the market for the foreseeable future (3-5 years).

According to a local expert, the Philippines uses conventional techniques to improve livestock, including artificial insemination, embryo transfer, in-vitro embryo production and ovum-pick. DNA-based techniques are confined to development of diagnostic kits for major animal diseases and markers, according to the same expert.

While the Philippine Carabao Center (PCC), an attached agency of the local DA, was able to develop a test tube carabao (or water buffalo) in 2004, it has since then slowed down in its research on clones. A PCC contact reports that cloning was an 'inefficient' breeding technique as mortality was an issue.

The PCC was created in 1992 by Republic Act 7307 or the Philippine Carabao Act of 1992 to study and promote the water buffalo as a multi-purpose animal that can be raised for milk, meat, hide, and draft. It oversees matters concerning animal biotechnology research and development in the Philippines, particularly on the breeding of a 'super' water buffalo capable of producing 4 to 18 liters of milk/day using gene-based technology (marker-assisted selection).

b) COMMERCIAL PRODUCTION:

Not applicable.

c) BIOTECHNOLOGY EXPORTS:

Not applicable.

d) BIOTECHNOLOGY IMPORTS:

Not applicable.

POLICY

a) REGULATION:

There is currently no legislation and/or regulations in place covering the development, use, import, and/or disposal of livestock clones, GE animals, or products derived from these animals or their offspring in the Philippines.

b) LABELING AND TRACEABILITY:

Not applicable.

c) TRADE BARRIERS:

There are no known biotechnology-related trade barriers that negatively affect U.S. exports.

d) INTELLECTUAL PROPERTY RIGHTS (IPR):

The Philippines currently does not have, nor is it considering legislation to address intellectual property rights for animal biotechnologies.

e) INTERNATIONAL TREATIES/FORA:

Not applicable.

MARKETING

a) MARKET ACCEPTANCE:

Not applicable.

b) PUBLIC/PRIVATE OPINIONS:

Like GE crops, awareness by the general public on GE animals is low.

c) MARKET STUDIES:

Not applicable.

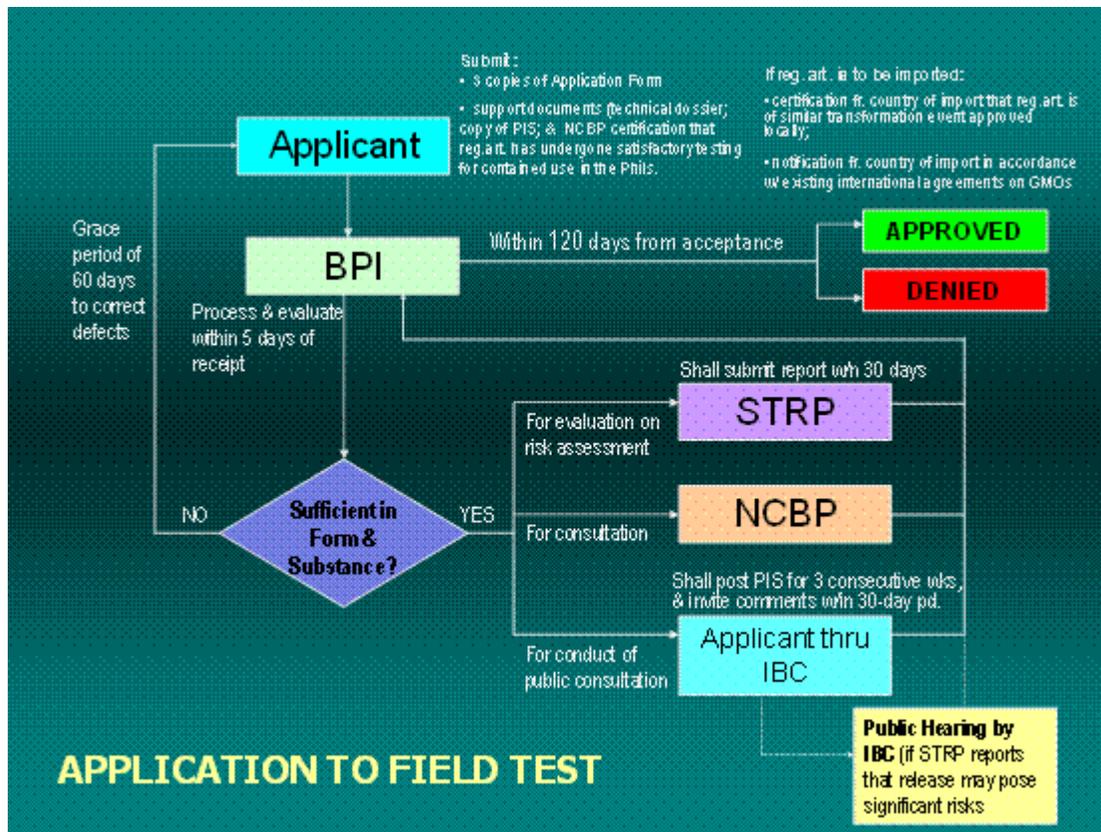
CAPACITY BUILDING AND OUTREACH

a) ACTIVITIES:

As a follow up to the 1st International Workshop on the Food and Environmental Safety Assessment of Genetically Modified Animals, held in Buenos Aires, Argentina in 2011, Post, working with NTPMD/OASA, facilitated the travel of a local participant to the 2nd International Workshop for Regulation of Animal Biotechnology in Brasilia, Brazil from August 18-21, 2014.

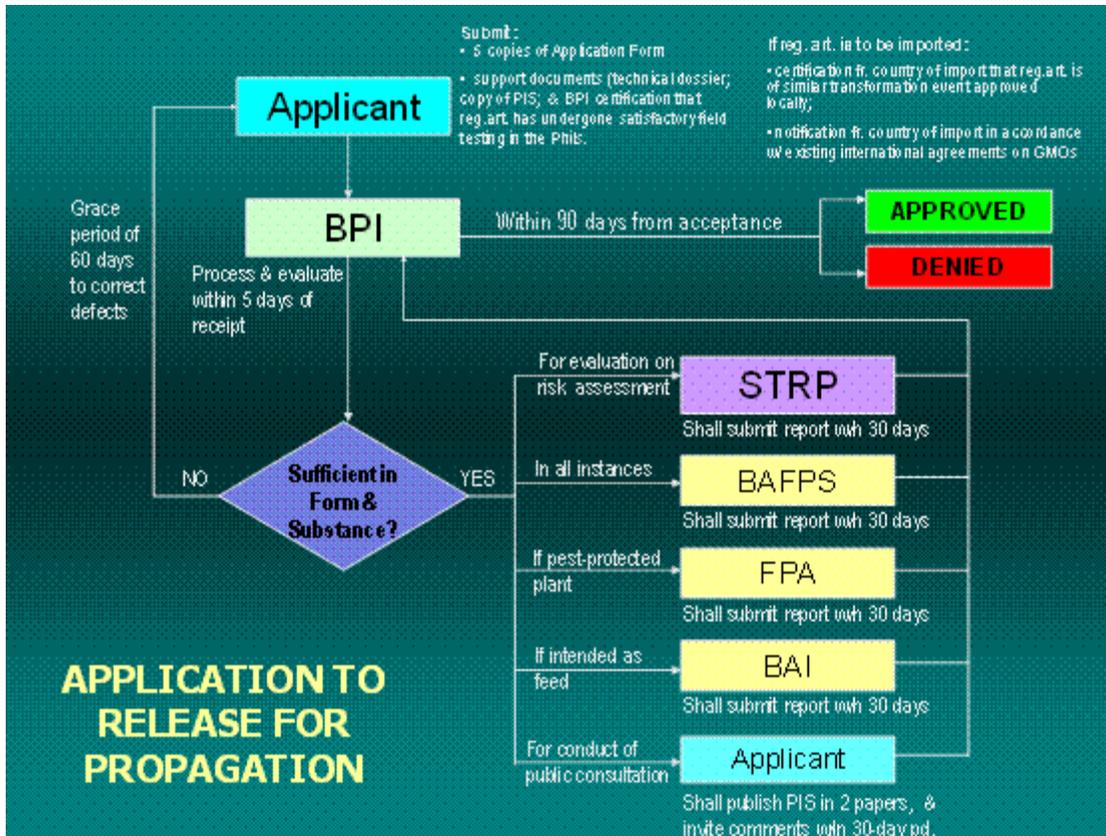
b) STRATEGIES AND NEEDS:

Not applicable.



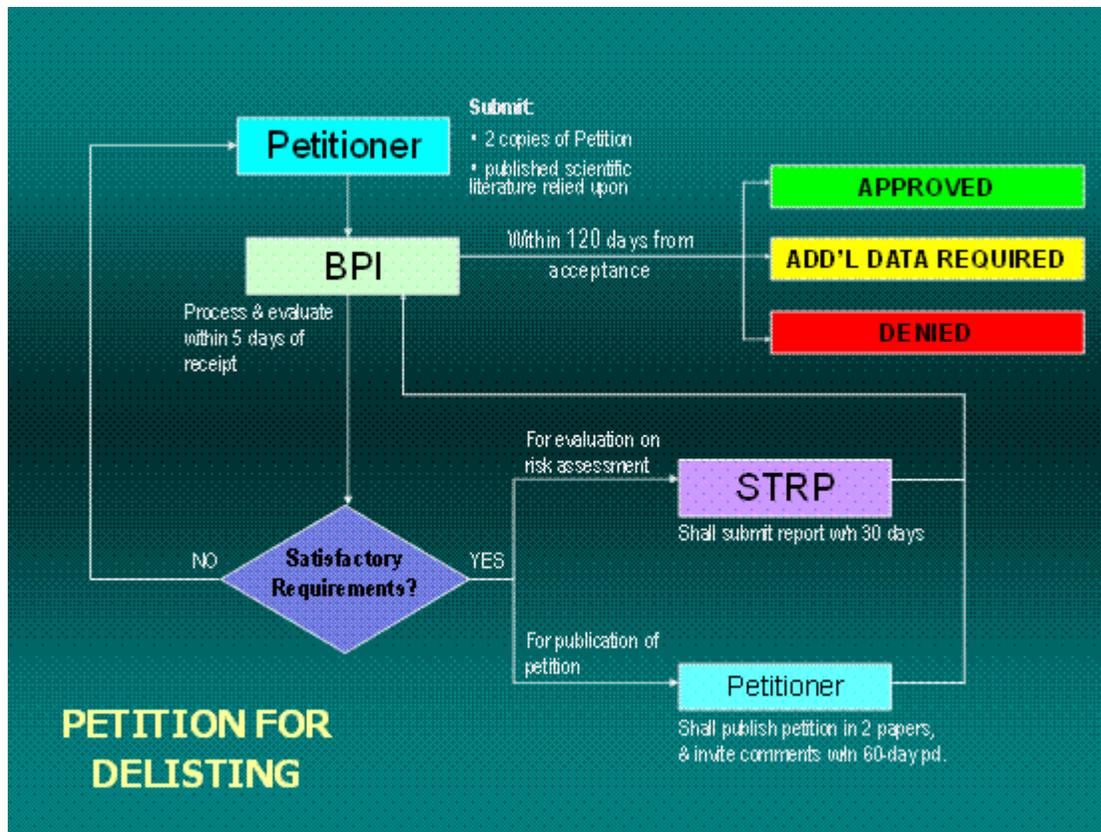
Source: Philippine Department of Agriculture

Annex II – Application to Release for Propagation



Source: Philippine Department of Agriculture

Annex III – Application for Importation for Direct Use



Source: Philippine Department of Agriculture

Attachment Name	Attachment Link
BIOTEK 2015.xlsx	Download