

# Appendix G

## APEC Project Completion Report

Please submit through your APEC Secretariat Program Director within 2 months of project completion. Reports should be 3-4 pages. Please append participants list.

### SECTION A: Project profile

Project number & title:	HLPDAB 01 2016T <i>Strengthening Innovation and Cooperation among APEC Economies to Advance Science and Facilitate Trade</i>		
Project time period:	September 19-20,2016	Date submitted:	March 2017
Committee / WG / Fora:	HLPDAB		
Project Overseer Name / Organization / Economy:	Stacey Peckins/USDA, US Ann Katsiak/US-ATAARI		

### SECTION B: Project report and reflection

1. **Project description:** USDA and US-ATAARI worked with the Office of Agricultural Affairs in Peru to conduct a two-day seminar Asia-Pacific Economic Cooperation APEC Economies on the margins of the 15<sup>th</sup> meeting the High Level Policy on Agricultural Biotechnology meeting during the APEC Food Security week in September 2016 in Peru. The workshop entitled: *Strengthening Innovation and Cooperation among APEC Economies to Advance Science and Facilitate Trade* included five distinct subjects: (1) biosafety regulations: increasing trade between APEC economies including a review of best practices and opportunities for functioning biosafety systems and how we can eliminate asynchronous approvals; (2) low level presence (LLP): considerations of practical approaches to facilitating food and feed trade; (3) seed trade: quality standards, LLP and enhancing trade among APEC economies; (4) how economies can practically maintain biodiversity while embracing biotechnology; (5) new plant breeding techniques: fostering innovation, adoption, and use. Funding was provided travel-eligible economies and speakers. The workshop had a four-pronged approach that supported the economic prosperity policy and food security for the APEC economies by: 1) promoting science-based regulatory systems that increase agricultural capacity in developing countries while facilitating U.S. investment and export opportunities abroad, 2) engaging with critics of the technology, 3) developing alliances, and 4) anticipating roadblocks and opportunities.

2. **Meeting objectives:** Describe how the project met each of its proposed objectives. Please outline any challenges you may have encountered in delivering the activity.

The primary deliverable was a workshop to discuss what is working with current regulatory practices including practical examples of regulatory compatibility/convergence/harmonization; and the sharing of resources including recognition policies and agreements. The agenda objectives were: 1) To discuss considerations of practical approaches to LLP in international food and feed trade, primarily by learning about the latest efforts of the Global LLP Initiative (GLI). 2) To discuss how economies practically maintain biodiversity while embracing biotechnology. 3) To increase the understanding of new plant breeding techniques and how to assist APEC economies in harnessing scientific innovations to address common challenges for smallholder farmers. 4) To promote transparent, science-based regulations in order to advance science and reap the benefits of agricultural innovation in the context of global trade. 5) Through the interaction of economies over the workshop, provide opportunities for APEC economies to partner, as well as, share knowledge. And 6) To enhance the scientific knowledge of APEC economy regulators and policy makers with regards to Seed Trade: Quality Standards, LLP and Enhancing Trade among APEC Economies. The workshop was delivered on time and with an agenda that supported the aforementioned objectives.

The challenges were mostly logistical in nature, given the small city in which the meeting was held, but the implementing team was able to sort out reasonable solutions to hold the workshop on schedule and within budgetary projections.

**3. Evaluation:** Describe the process undertaken to evaluate the project upon completion. (e.g. evaluation through participant surveys, peer reviews of outputs, assessments against indicators, statistics demonstrating use of outputs etc.). Provide analysis of results of evaluations conducted and where possible include information on impacts on gender. *Evaluation data needs to be included as an appendix.*

At the time of the workshop, three surveys were distributed to participants. The first, a “pre-knowledge gained form,” was distributed at the outset of the workshop and measured participants’ baseline knowledge of five targeted areas that would be covered: biotechnology regulatory practices that may increase trade; low-level presence in food and free trade; seed trade; innovative plant breeding technology; and how biotechnology can address environmental sustainability and biodiversity. This was followed by a post-knowledge gained form at the end of the training, which was compared to each participant’s baseline results, and operationalized the degree to which workshop participants’ capacity was built in these areas. Additionally, a workshop feedback form was distributed at the end of the workshop in which participants rated the quality of the training, the effectiveness of each session, and provided general comments about the training including how it could be improved. An analysis of these evaluations can be found in Appendix 4.

To measure the long-term impact of the workshop, a follow-up survey will be sent on the workshop’s one-year anniversary. This will measure how the training contributed to changes in practice within participants’ organizations, as well as whether the training contributed to legal/regulatory reform in participants’ respective economies.

**4. Output indicators:** Describe the main project outputs below. This may include workshops, tools, research papers, reports, recommendations, best practices, action plans.

Indicators (Edit or Insert rows as needed)	# planned	# actual	Details or notes
# workshops / events	1	1	
# participants (M/F)	n/a	44/35	Refer to Appendix 1
# economies attending	21	16	Attended by 16 APEC economies, as well as representatives from Burma and Cambodia
# speakers engaged	22	22	Refer to Appendix 2
# other organizations engaged	24	24	Refer to Appendix 1 for a list of participants’ organizations

The key output of the workshop was to increase capacity and to discuss the aforementioned HLPDAB subject areas relevant to APEC. The agenda and presentations were able to cover each of these areas in depth, so the project delivered the workshop on all subjects it expected to implement.

**5. Outcomes:** Describe any specific medium-term changes to policy, processes or behaviour that can be attributed to result from this activity. Please include details on:

- What indicators were used to measure medium-term impact? (Example indicators: type/number of policies/ regulations/processes changed, % of businesses conforming to new standards, change in sector’s commercial activity, # individual action plans developed, # agencies using resource or tools etc.)
- Monitoring plans in place and proposed indicators to measure impacts, including any impacts on gender. Please summarise relevant information.

On the first day, four technical sessions were included in the workshop. Each session contained from one to several presentations. Review of biotech crops in APEC economies, emphasizing in the fact APEC is producing almost 50% of the biotech crops in the world. In addition a summary about APEC economies and its participation at international conventions was presented. As summary of the workshop, these were the relevant ideas: From session 1, about Biosafety Regulation: How to increase trade between APEC economies: Biosafety regulatory systems on GM products must facilitate trade and should incorporate “homogenization, harmonization and synchronization” initiatives. For that, portability of data and efficient mechanism for exchanging information are a key element. It is very important to mention that similar data under similar criteria will offer similar conclusions. Biosafety regulation must be science-based. There are regulatory issues that, in practice, are barriers to trade. Regulation is costly, demanding, but necessary in certain areas.

To be considered as driven APEC topics: How can cooperation between APEC economies increase trade of GM products? How much is asynchrony costing APEC economies? How feasible is biosafety policy harmonization? How can APEC move forward in an expeditious and efficient way? Host Economy Peru proposed development of a road map that will imply list issues and to create a committee to oversee progress on specific issues.

From session 2, about LLP in International Food and Feed Trade: LLP is unavoidable and more frequent. It is urgent to develop practical (and ideally, harmonized) policies for LLP management. Zero tolerance for LLP is impractical, unrealistic and not grounded in science based risk management. Grain segregation reduces efficiency of grain movement and drives up cost. There is no one solution, therefore it is important to highlight LLP. Threshold setting could be a practical approach (where domestic laws permit). A 5% value was proposed by industry while 3% was proposed by Canada. However, such threshold values are not science-based; they are strictly based on a marketing threshold. They do not imply a safety threshold. An example of LLP economic consequences was mentioned based on Kalaitzandonakis' estimation, which ranges from 5%=40 Million USD, to 0.1%=4.8 Billion USD. It is very important to elucidate how to calculate the LLP threshold standard? Global Low Level Presence Initiative (GLI) includes many APEC Economies and has developed positions on many aspects of LLP in trade Proposal: Should APEC approach GLI for observer status and/or adopting GLI definitions?

From session 3 on Seed Trade: Quality standards, LLP and enhancing trade among APEC economies Seed trade is significantly different than grain trade, just because seed is different to grain (obvious issue for specialists but not for general public, which does not understand either sector or differences between them). Intellectual Property issues more influential with LLP in seed trade. Increasing trend of using certified seed vs. non-certified seed; Seed market is highly regulated and very strict (technical input, quality, traceability, IP, transboundary movement). LLP in seed is a big problem (costly and complicated to manage).

From session 4 about using biotech to address environmental sustainability and biodiversity, two examples were given, Indonesia and Brazil. Details about GM developments were presented. In addition, possible actions for APEC and HLPDAB on Biotechnology and Biosafety were presented, including: APEC Work Plan or Strategic Plan Additions: LLP in Food and Feed Trade; Data transportability / Information sharing; Science Communication, China called on APEC economies to strengthen attention to biotechnology and biosafety popularization. In addition they called for APEC economies to work on scientifically communicating the benefits to the public, as public awareness has a direct impact on the development of technology and trade. Precision Breeding and Innovative Plant Breeding Technologies (NBT); Support for Institutional Strengthening; Innovation in the Seed Industry; Roles of Public, State, and Private Sector; Technology development, technology deployment, investment and R&D; Small Holder Farmer Experience; Additionally current initiatives in biosafety in the Western Hemisphere (NABI, CAS, ICABB) were shown as an example of the importance of having technical platforms in biosafety.

Some considerations about challenges and opportunities for biosafety at APEC were shared, as follows: Confusion between BIODIVERSITY and BIOSAFETY, based on the interpretation of Cartagena Protocol on Biosafety of the Convention on Biological Diversity. The possible contribution of biodiversity is overestimated and safety of "the natural" is overvalued. It is important to correctly define and evaluate "harm". There is an extreme conservationist vision confusing Risk - Danger – Doom including inappropriate mixing of risk analysis (art. 15 and 16) and socio-economic considerations (Art. 26).

And as final remarks: Over regulation is not desired. It could stop new breeding techniques development. Private sector considers NBT should not be regulated; faster approvals are required. Differences in regulatory process increase time and costs. For that, common criteria must be established

Longer term impacts will be measured through a one-year follow-up survey in September 2017.

**6. Participants/ Speakers Summary Table (compulsory for events):** Must be gender-disaggregated.

<b>Economy</b> <i>(Insert rows as needed)</i>	<b># male</b>	<b># female</b>	<b>Detail</b>
Canada	1	1	Speakers (1M, 1F)
Chile	3	1	Speakers (1M)
China	2	1	
Indonesia	1	2	Speakers (1M)
Republic of Korea	0	2	
Malaysia	1	1	
Mexico	1	1	
Papua New Guinea	2	0	
Peru	13	15	Speakers (3M, 2F)
Philippines	1	2	Speakers (1F)
Russia	2	1	
Singapore	1	0	Speakers (1M)
Chinese Taipei	2	0	
Thailand	1	1	
United States	1	0	Speakers (3M, 2F)
Vietnam	5	0	
Other	5	5	
<b>Total</b>	42	33	79

**Comments: What was the approach undertaken for participant nomination/selection and targeting? Please provide details. What follow-up actions are expected? How will participants/beneficiaries continue to be engaged and supported to progress this work?** Nominations were solicited through the APEC HLPDAB forum in emails distributed to the entire fora by the APEC Secretariat. Each economy was encouraged to nominate two attendees with relevant experience and responsibility to the workshop goals, which were outlined in the nomination form. The invitation requested the participants arrive the workshop prepared to engage in discussions regarding the five agenda objectives and were circulated materials electronically. Overall, the workshop saw participation from 16 economies.

The information distributed and relationships forged during the workshop have led to on-going conversations and on-going sharing of information. In addition, host Peru had proposed a working group to promote greater alignment of national standards with relevant international standards among APEC economies and public confidence in those systems. For future progress, we will follow up with a survey one year from the workshop implementation date in September 2017 to capture further advancements made as a result of the workshop.

**Key findings: Describe 1-3 examples of key findings, challenges or success stories arising from the project (e.g. research or case studies results, policy recommendations, roadblocks to progress on an issue, impacts on gender).**

The Peru HLPDAB Chair was assertive in his efforts to promote agricultural biotechnology as demonstrated by the agricultural biotechnology statement in the Food Security Ministerial Statement, with the first sentence: “We acknowledge that agricultural biotechnology can help address the challenge of food security and promote climate resilient agriculture.” In addition, Peru’s Minister of Agriculture said “We need to strengthen agricultural productivity by taking advantage of the potential of innovation and science and technology as a way to help the region produce more food with dwindling natural resources.

Vietnam agreed to host and chair the APEC HLPDAB meeting during Food Security Week in August, 2017 in Can Tho, Vietnam. They are seeking U.S. assistance in hosting a 2017 HLPDAB workshop focusing 1) on

smallholder farmer adoption of agricultural biotechnology; 2) the roles of public, state, and the private sectors in technology development, technology deployment and investment and R&D; 3) roles of agricultural biotechnology in response to climate change for sustainable development.

The workshop highlighted potato research and innovations. J.R. Simplot's Haven Baker, Vice President of Plant Sciences spoke on Simplot's Innate® potato (GE) given Peru is home to the International Potato Center and the Center of Origin for the potato. Industry participated through GAABT, an evening reception and HLPDAB appreciate industry's support and participation at this year's workshop. In fact, the presenter met with the Vietnamese and there are plans to extend research into Vietnam.

Canada and the Global Alliance for Ag Biotech Trade (GAABT) presented their Low Level Presence Policies to include thresholds. GAABT's question to HLPDAB delegates and as future work for the forum was how can we accelerate practical LLP solutions? This discussion is continued through the Global Low Level Presence Initiative and the Malaysian attendee at the APEC HLPDAB was invited by Canada to attend a meeting in March 2017 as an observer thanks to their meeting at the APEC HLPDAB.

**7. Next steps: Describe any planned follow-up steps or projects, such as workshops, post-activity evaluations, or research to assess the impact of this activity. How will the indicators from Question 5 be tracked? How will this activity inform any future APEC activities?** The United States hopes to hold a follow-up workshop on the margins of the APEC HLPDAB meeting in Vietnam to continue discussing developing solutions to issues discussed at the Piura workshop. There are plans for working group to develop to promote greater alignment of national standards with relevant international standards among APEC economies and public confidence in those systems. It is hopeful that participants will use the experiences gathered to develop regulation in their respective economies to accommodate increased trade of genetically engineered agricultural products among APEC members. It was proposed that the topics of Low Level Presence (LLP) of genetically modified material in food and feed trade, Data Transportability, Science Communication, and Precision Breeding and Innovative Plant Breeding Technologies (NBT) would be included in the HLPDAB workplan for 2017. These topics were uniformly accepted to be included next year.

**8. Feedback for the Secretariat: Do you have suggestions for more effective support by APEC fora or the Secretariat? Any assessment of consultants, experts or other stakeholders to share?** *The Secretariat examines feedback trends to identify ways to improve our systems.*

We have appreciated participation by the APEC Secretariat in this workshop to assist in program implementation. This has proven to be valuable for attendees and a continued areas of high interest among APEC economies. We plan to involve the Secretariat should there be a 2017 HLPDAB workshop in Viet Nam.

### **SECTION C: Budget**

Attach a detailed breakdown of the APEC- provided project budget, including:

- **Planned costs:** (using most recently approved budget figures)
- **Actual expenditures**
- **Variance notes:** An explanation of any budget line under- or over-spent by 20% or more.

<i>All Figures in USD</i>	APEC Funding	APEC Funding	APEC Funding	Note
	Budgeted	Actual	% Variance	
<b>Travel (Speaker, Experts, Researchers)</b>				
Per diem (incl. accommodation and "75% additional payment")	3,453.00	575.50	-83.33%	Anticipated APEC funding more speakers.
Airfare	18,000.00	2,372.65	-86.81%	Anticipated APEC funding more

<i>All Figures in USD</i>	APEC Funding	APEC Funding	APEC Funding	Note
	Budgeted	Actual	% Variance	
				speakers and flights being more expensive.
<b>Travel for Participants (from travel-eligible economies only. Active participants only)</b>				
Per diem (incl. accommodations and "75% additional payment")	4,604.00	1,677.50	-63.56%	Anticipated APEC funding more participants.
Airfare ( <i>restricted economy class</i> )	8,000.00	2,398.00	-70.025%	Anticipated APEC funding more participants and flights being more expensive.
<b>Other Costs</b>				
Specialized equipment	1,303.00	0.00	-100%	Did not anticipate Peru providing venue and AV equipment, though they did, so no funding was required.
Hosting	1,640.00	0.00	-100%	Did not anticipate Peru providing venue and AV equipment, though they did, so no funding was required.
<b>Total</b>	<b>37,000.00</b>	<b>7,023.65</b>		

## SECTION D: Appendices

Please attach the following documentation to the report. **Note that the contact list for participants/ experts/ consultants is a mandatory requirement for all Project Completion Reports.**

✓	Appendices	Notes
1	<b>Participant contact list</b> , including name, email address, gender, organization ( <i>mandatory</i> )	
2	<b>Experts / consultants list</b> , including name, email address, gender, organization ( <i>mandatory</i> )	
3	<b>Event Agenda</b>	
	<b>Reports, websites or resources</b> created: links or soft copies	
4	<b>Post activity survey</b> or other evaluation data (raw and/or aggregated)	
	<b>Other information or resources</b>	
<b>FOR APEC SECRETARIAT USE ONLY</b> APEC comments: Were APEC project guidelines followed? Could the project have been managed more effectively or easily by the PO?		

# Appendix 1: Participant contact list

Name	Gender (M/F)	Institution	Economy	Email
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## Appendix 2: Speaker contact list

Name	Gender	Institution	Email
<b>Mr. Casey Bean</b>	M	U.S. Department of Agriculture (USDA)	Casey.Bean@fas.usda.gov
<b>Dr. Rosa Angélica Sánchez</b>	F	Instituto Nacional de Innovación (INIA)	<a href="mailto:rsanchez@inia.gob.pe">rsanchez@inia.gob.pe</a>
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<b>Dr. Barbara Wells</b>	F	International Potato Center	
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<b>Mr. Mark Petry</b>	M	USDA	Mark.Petry@fas.usda.gov
<b>Ms. Catherine Walter</b>	F	Agriculture and Agri-Food Canada	Walter, Catherine (AAFC/AAC) <catherine.walter@canada.ca>
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<b>Mr. Haven Baker</b>	M	Simplot Plant Sciences	haven.baker@simplot.com
<b>Dr. Marc Ghislain</b>	M	International Potato Center	m.ghislain@cgiar.org
<b>Dr. Jan Kreuze</b>	M	International Potato Center	j.kreuze@cgiar.org

# Appendix 3: Agenda

## APEC High Level Policy Dialogue on Agricultural Biotechnology

Workshop: Strengthening Innovation and Cooperation among APEC Economies to Advance Science and Facilitate Trade

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**19-20 September 2016**

**Rio Verde Hotel, Algarrobo-Huarango Room  
Piura, Peru**

<b>DAY ONE</b>	
<b>19 September 2016</b>	
8.00 – 8.30 am	<b>Registration and accreditation</b>
8.30 – 9.00 am	<b>Opening of the Workshop</b>  <i>Mr. Casey Bean</i> , Counselor, U.S. Embassy, Office of Agricultural Affairs, Lima, U.S. Department of Agriculture (USDA), United States  <i>Dr. Rosa Angélica Sánchez</i> , Director General of Genetic Resources and Biotechnology, Instituto Nacional de Innovación (INIA), Peru
9.00 – 9.30 am	<b>Welcome to Participants</b>  <i>Dr. Alberto Maurer</i> , National Institute of Innovation, Chair of 2016 APEC High Level Policy Dialogue on Agricultural Biotechnology, Peru
9.30 – 9.45 am	<b>Introductions, Goals, Housekeeping</b>  <i>Stacey Peckins</i> , Senior Trade Advisor, USDA, United States
9.45 – 10.15 am	<b>Coffee Break/Group Photo</b>
10.15 – 11.15 am	<b>Keynote Address: How Can We Safely Achieve the Production Needed to Feed Our Growing Populations?</b>  <i>Dr. Barbara Wells</i> , Director General, International Potato Center
<b>Session I</b> 11.15 – 12.15 pm	<b>Biosafety Regulations: How to Increase Trade Between APEC Economies</b>  <b>Discussion Leader:</b> <i>Dr. Florida Carino</i> , The Philippines  I. Current Regulatory Practices and Next Steps

	<p><b>Dr. Rosa Angélica Sánchez and Dr. Alexander Grobman</b>, Peru</p> <p>2. Sharing Resources: Lessons from Australia and Canada</p> <p><b>Mr. Neil Strand</b> (delivered virtually), Canada</p> <p>3. Eliminating Asynchronous Approvals</p> <p><b>Ms. Julia Doherty</b>, United States</p>
12.15 – 1.15 pm	<b>Lunch (provided)</b>
<p><b>Session 2</b></p> <p>1.15 – 3.00 pm</p>	<p><b>Low-Level Presence (LLP) in International Food and Feed Trade</b></p> <p><b>Discussion Leader: Mr. Mark Petry</b>, United States</p> <p>1. Global LLP Initiative (GLI): Review of 4<sup>th</sup> GLI and Status of Current Work</p> <p><b>Ms. Catherine Walter</b>, Canada</p> <p>2. Industry Perspectives</p> <p><b>Dr. John McMurdy</b>, Global Alliance for Ag Biotech Trade</p> <p>3. Policy Alternatives/Experiences</p> <p><b>Ms. Catherine Walter</b>, Canada and <b>Dr. Pham Van Toan</b>, Viet Nam</p> <p>4. For the group: What can we do as a forum? Statement? Encourage participation in GLI? Share experiences.</p>
3.00 - 3.15 pm	<b>Coffee Break</b>
<p><b>Session 3</b></p> <p>3.15 – 4.15 pm</p>	<p><b>Seed Trade: Quality Standards, LLP and Enhancing Trade Among APEC Economies</b></p> <p><b>Dr. Victor Pinto Lopez</b>, Chile</p> <p>1. What differentiates the seed trade from the grain trade?</p> <p>2. What are the general outlines for the sanitary and phytosanitary rules (both commercially and for governments) for seed trade?</p> <p>3. How do seed traders and growers actually comply?</p> <p>4. What does LLP of biotech traits in seed trade mean from a practical standpoint? What are the costs (liability and lost trade opportunity) with zero tolerance policies?</p> <p>5. How can industry address seed LLP in a commercially realistic way?</p> <p>6. What can we do as a forum? Statement? Other organizations/resources to assist economies? Share experiences.</p>

<b>Session 4</b> 4.15 – 5.00 pm	<b>Using Biotechnology to Address Environmental Sustainability and Biodiversity: Examples from Indonesia and Brazil</b>  <u><b>Indonesia:</b></u> <i>Dr. Agus Pakpahan</i> , Chairman of Biosafety Commission for Genetically Modified Products and Research Professor in Agricultural Economics  <u><b>Brazil:</b></u> <i>Dr. Adriana Brondani</i> , Executive Director, Council on Information on Biotechnology  <i>What can we do as a forum? Are APEC Economies interested in continuing to share experiences and perspectives on efforts?</i>
5.00 – 5.30 pm	<b>Day One Action Items</b>  <i>Dr. Pedro Rocha</i> , Inter-American Institute for Cooperation on Agriculture
7:00 pm	<b>Welcome Dinner Hosted by Crop Life International</b>  <b>Los Portales Hotel</b>

<b>DAY TWO</b> <b>20 September 2016</b>	
8.30 – 9.00 am	<b>Registration and arrival</b>
<b>Session 5</b> 9.00 – 10.00 am	<b>Fostering the Benefits of Innovation in Plant Breeding Continuation of Workshop in Manila</b>  <u><b>Discussion Leader:</b></u> <i>Dr. Siang Hee Tan</i> , Executive Director, Crop Life Asia  1. 2017 Workshop: Goals and Objectives <i>Mr. Mark Petry</i> , United States  2. Industry Developments: ISF <i>Mr. Juan Kiekebusch</i> , Seed Association of the Americas
10.00 – 10.15 am	<b>Coffee Break</b>
<b>Session 6</b> 10.15 – 12.00 pm	<b>Agriculture Technology and Innovation</b>  1. The Story of the Innate Potato, J .R. Simplot <i>Mr. Haven Baker</i> , Vice President and General Manager, Simplot Plant Sciences  2. Development of Extreme Resistance to Late Blight in Potato by Transfer of Resistance Genes from Wild Relatives  <i>Dr. Marc Ghislain</i> , Research Program Leader, International Potato Center

	<p>3. Utilization of RNA Silencing to Increase Productivity: Generating Virus Resistance in Potato</p> <p><b>Dr. Jan Kreuze</b>, Sub Program Science Leader on Disease Management, Diagnostics and Risk Assessment, International Potato Center</p> <p><b>Questions and Answers</b></p>
12.00 – 1.30 pm	<b>Lunch (provided)</b>

# Appendix 4

## Monitoring and Evaluation Data

As noted above US-ATAARI circulated a questionnaire, the Workshop Feedback Form, designed to solicit participant feedback on the workshop structure and delivery. For this program, the response rate in completing the feedback form was 65%. The sections below summarize the responses received.

### Attendee Profile

As noted above, the workshop was designed to allow for participants to exchange the most current information on the most pressing issues affecting innovative technologies while building relationships among APEC members. The workshop drew a total of 79 attendees from a range of public sector entities, such as Ministries of Agriculture and Health, as well as private sector and academia (see participant profile in Figure 1).

Figure 1: Profile of Attendees (N=79)



### Attendee Satisfaction

Data presented in this section were collected anonymously through the paper-based workshop feedback forms administered at the end of the workshop. Forty-nine participants, or 65% of the total workshop attendees, responded to the questionnaire. The questionnaires of participants who responded to less than 75% of queries were discarded and excluded from the analysis.<sup>1</sup>

Responses indicated that participants largely held positive perceptions of the workshop, with nearly all respondents (91%) selecting 'excellent' or 'good' ratings for the overall quality of the workshop (see Figure 2).

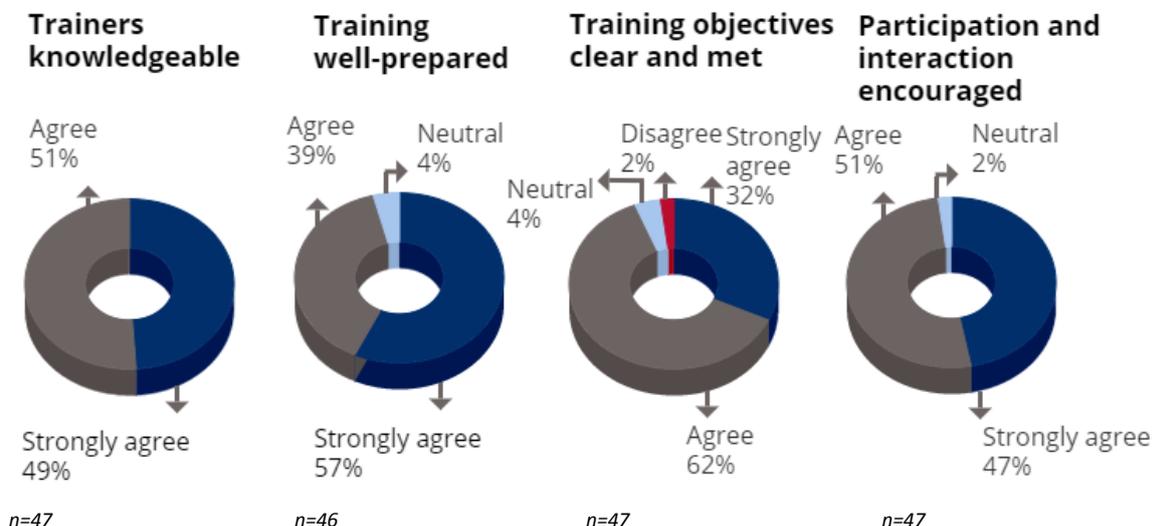
<sup>1</sup> Two questionnaires were discarded and excluded from the analysis.

**Figure 2: Workshop Overall Rating and Feedback**



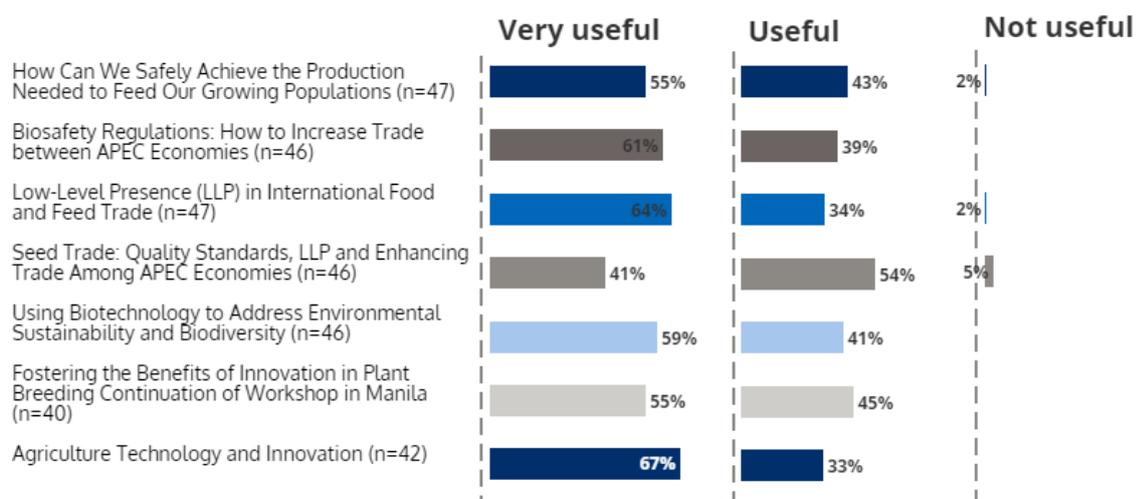
With regard to participant views on the workshop’s delivery and format, 49% of respondents strongly agreed and 51% of respondents agreed that the trainers were knowledgeable about the training topics. Nearly all respondents (97%) strongly agreed or agreed that the workshop was well prepared. Most respondents (94%) also strongly agreed or agreed that workshop objectives were clear and were met. In terms of participation by attendees and interaction among trainers and participants, 47% of respondents strongly agreed and 51% of respondents agreed that the workshop structure successfully encouraged such communication. Figure 3 below presents further detail on the respondents’ perceptions as to the workshop delivery and format.

**Figure 3: Specific Aspects of the Workshop**



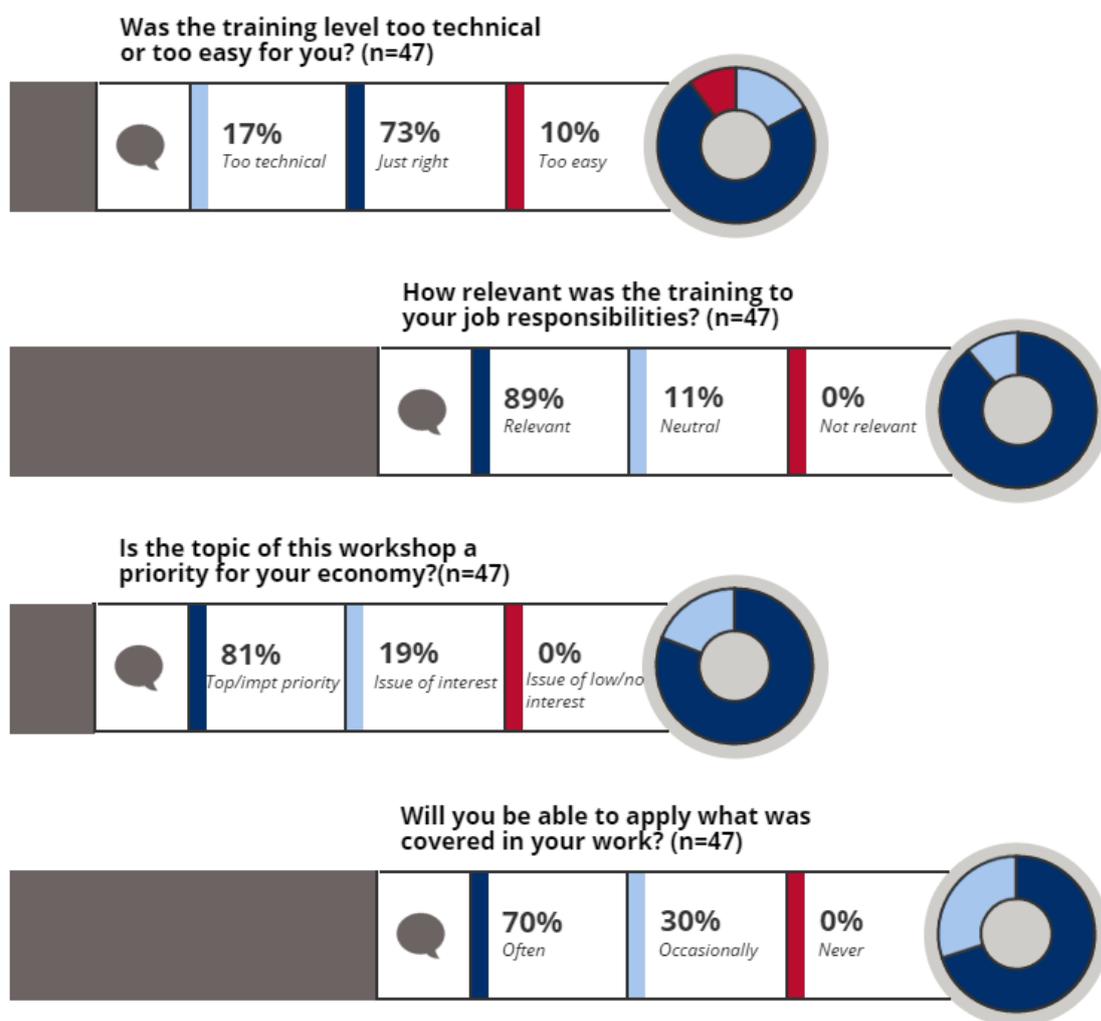
Respondents were also asked to provide their feedback on the usefulness of the various sessions of the workshop. Detailed results are shown in Figure 4. Most topics covered in the training sessions were rated highly with respect to their usefulness. In particular, respondents identified the discussion of agriculture technology and innovation as especially useful. This session featured an examination of technology and the potato, with a look at the story of the Innate Potato, the development of extreme resistance to late blight in potato by transfer of resistance genes from wild relatives, and utilization of RNA silencing to increase productivity.

**Figure 4: Usefulness of Training Sessions**



Workshop participants' opinions were also sought on other training features, including technical level, relevance to work and applicability to participants' jobs. Most respondents (72%) indicated that the training level was 'just right,' while some respondents reported that the training was either a bit 'too technical' or a bit 'too easy.' In terms of relevance to job responsibilities, most respondents (89%) expressed that the training was either very or somewhat relevant to their work. Moreover, all respondents confirmed that they would be able to directly apply content covered under the training 'often' or at least 'occasionally' in their work. From a broader perspective, most respondents (81%) considered the workshop topic, namely promoting region-wide access to biotechnology tools, to be a 'top priority' or 'important priority' for their respective economies. The remaining indicated it was at least an 'issue of interest.'

**Figure 5: Additional Training Features**



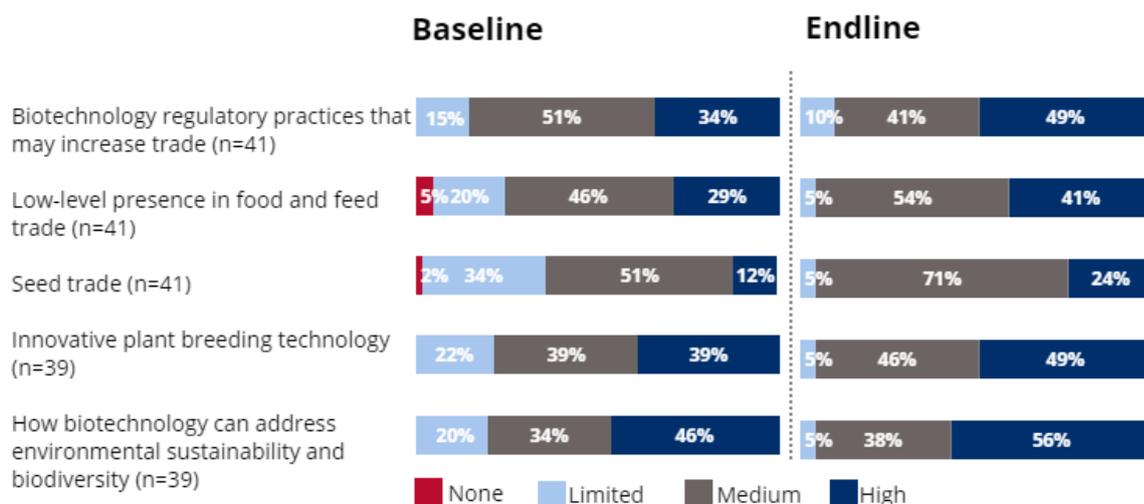
## Knowledge Gained

In order to gauge whether respondents increased their capacity as a result of the workshop, two distinct hard copy questionnaires – for ‘pre-training’ and ‘post-training’ – were administered during the first and second days. Participants completed the questionnaires by rating their knowledge of specific workshop topics at the start (pre-training) and at end (post-training) of the workshop.<sup>2</sup> Questionnaires that were less than 75% complete, or that did not have a ‘match’ – that is a corresponding completed pre- or post-training questionnaire – were discarded and excluded from the analysis.<sup>3</sup> Forty-one participants, or 55% percent of the total workshop attendees, responded to both the pre- and post- training questionnaires. The figure below summarizes responses to the baseline and endline questionnaires.

<sup>2</sup> Closed-ended questionnaires are circulated pre-training and post-training at workshops asking participants to evaluate, on a five-point scale, their level of knowledge on the subject matter before (baseline) and after (endline) the training.

<sup>3</sup> Due to a lack of matches, there were 11 discards for Form #3a Knowledge Gained Pre-Training; and 5 discards for Form #3b Knowledge Gained Post-Training.

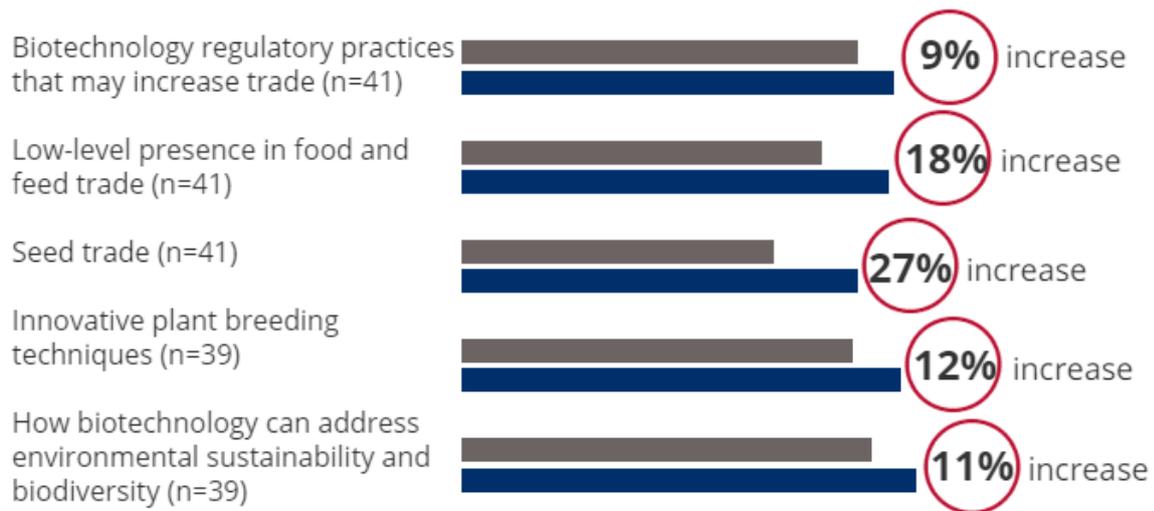
**Figure 6: Respondents' Knowledge (Baseline vs. Endline)**



As to self-reported knowledge of training subject matter prior to the workshop, a number of respondents rated their knowledge as ‘medium’ or ‘high’ across most categories at baseline. Given that participants were APEC regulatory and policy officials actively involved in the subject matter, the baseline self-ratings would be expected to be on the high end. However, more than a third of respondents rated their understanding of seed trade as ‘limited’ at the outset. Moreover, 5% of respondents indicated they had no understanding of low-level presence in food and feed trade. While the audience on average self-reported at least some familiarity with the subject matter at baseline, participants clearly could benefit from discussion on how to safely achieve the agricultural production needed to feed our growing population and using agricultural biotechnology to address environmental sustainability and biodiversity.

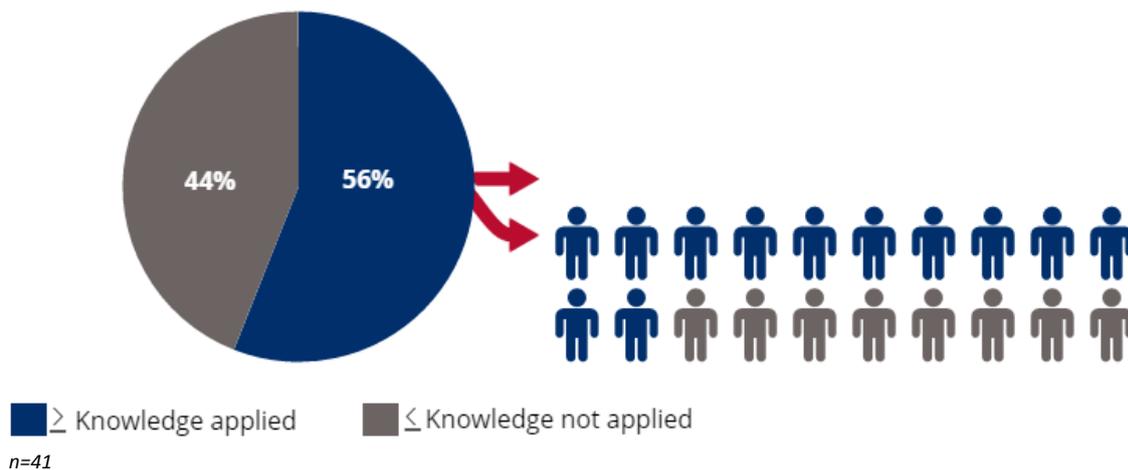
Responses to the endline questionnaire clearly illustrated a gain in immediate knowledge and understanding following the workshop (see Figure 7). Whereas more than a third of respondents rated their understanding of seed trade as ‘limited’ at baseline, nearly all respondents (95%) rated their knowledge as ‘high’ or ‘medium’ at the workshop conclusion. Respondents rating their knowledge of biotechnology regulatory practices that may increase trade as ‘high’ increased by 15% (from 34% to 49%). Respondents assessing their knowledge on seed trade as ‘high’ increased by 12% (from 12% to 24%). Of note, all respondents indicated they had at least a ‘limited’ understanding across all categories at endline, with the vast majority assessing their understanding as ‘medium’ or ‘high.’

**Figure 7: Average Respondents' Knowledge (Baseline v. Endline)**

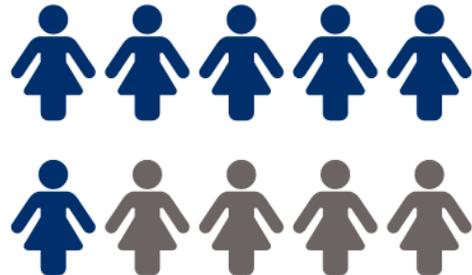
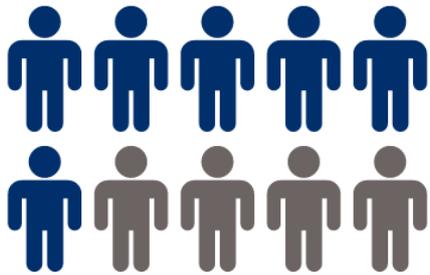


As illustrated in Figure 7, workshop participants as a group did on average self-report considerable knowledge gain across the training topics. With respect to by how much the respondents on average increased their capacity, Figure 8 illustrates the percentage of respondents stating their capacity has increased by at least 10 percent. Most respondents (56%) rated their capacity as having increased by 10% or more. Of the twenty-two male respondents to the knowledge gained forms, twelve (55%) indicated that his capacity has increased by at least 10 percent (see Figure 9). This compares to 11 of the 19 female respondents (58%). Given that a number of participants had rated their knowledge so highly at baseline, the percentage reporting their capacity as having increased by at least 10 percent was a bit lower than desired.

**Figure 8: Self-Reported Knowledge Gain (≥10% Knowledge Gain)**

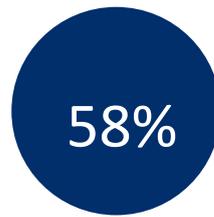


**Figure 9: Self-Reported Knowledge Gain (Sex Disaggregated)**



of male respondents reported their capacity had increased by 10% or more.

*n=22*



of female respondents, reported their capacity had increased by 10% or more.

*n=19*