American and Caribbean Regional Consultation

Improving Livelihoods through Knowledge Solutions and Partnerships

10-11 February 2016, San José, Costa Rica

KNOWLEDGE FOR LIFE

Contents

Background

These triennial regional meetings have become an important activity in CABI's calendar. They give CABI's member countries an opportunity to shape and own CABI's plans, but more importantly they serve as a mechanism for CABI to listen to and engage directly with its member countries and help feed strategic recommendations into the Review Conferences for endorsement. The last consultations were held in 2012-2013 and CABI, through the consultations, was mandated to support member countries in SEVEN priority areas in line with CABI's capabilities and donors' funding requirements. The consolidated and derived outcomes guided the revision of CABI's Medium Term Strategy 2014-2016 and included the following:

- Trade and market access and development
- Knowledge management, communication and use
- Plant health
- Biodiversity and invasive species management
- Climate smart agriculture
- Institutional capacity building
- Publication of, and access to, authoritative information resources

As in the past, this round of Regional Consultation meetings (2015-2016) was aimed towards aligning CABI's work more effectively with regional needs and strategic plans, and developing mutually agreed frameworks for appropriately funded and resourced programmes. Built on the success and lessons learned from the previous regional consultations, these consultation meetings followed a similar arrangement with the following specific objectives:

- Conduct a systematic and focused review of the progress of the 7 priority areas identified in 2012-2013, and their continued relevance
- Identify new emerging regional priorities
- Agree on action plans by linking regional priorities with CABI's capabilities and strategies and identifying synergies among partners

The outcomes will then be fed into the CABI Review Conference 2016.

The Process

The Americas and Caribbean Regional Consultation was concluded successfully on 11th February 2016 in San José and all the objectives set for this regional consultation meeting were met.

With the theme being "Improving Livelihoods through Knowledge Solutions and Partnerships", the programme of this Consultation meeting adopted a more interactive and systematic approach. Our member country representatives and other delegates were impressed with CABI's overall progress, and what CABI has done in addressing their needs and priorities. They were pleased that we had engaged with them in such a way, which made them feel real ownership of the organization, the priority areas and issues identified and those agreed upon in the consultation meetings. They also commended highly our organization of the event in regard to content and logistics.

Around 50 delegates from 11 CABI member countries, four prospective member countries (Brazil, Costa Rica, Panama, and Turks and Caicos Islands), and 10 partner organizations in the Americas and Caribbean attended the meeting, together with CABI staff, to discuss priorities impacting sustainable development in the region.

The event was highly interactive and highlighted emerging issues in CABI's key areas of activity, particularly related to food security and improved agricultural productivity, food value chains, ecosystem management, food safety and nutrition. The meeting also looked closely at the impact of invasive species, specifically the threats facing livelihoods and ecosystems in the region. There was a special session for showcasing Costa Rica's Agriculture (Demonstrations), which was opened by The Hon. Dr Luis Felipe Arauz Cavallini, Minister of Agriculture and Livestock.

The meeting programme and pre- and post-meeting efforts and interactions followed a logical flow:

- starting with a systematic and focused review of the progress of the 7 priority areas identified in 2012-2013 by
  - conducting a survey on CABI's delivery
  - compilation of a list of projects, programmes and initiatives in addressing priority areas and issues identified at three Regional Consultation meetings in 2012-2013
  - compilation of project dossiers in respective regions
  - CABI CEO's presentation to update on the overall progress
  - Regional Directors' review on the progress in the Region
  - Other presenters' reviews on progress in specific issues
- followed by reviewing the continued relevance of the 7 priority areas and associated issues identified in 2012-2013 and identifying new emerging priorities - national, sub-regional and regional
- concluded by the consolidation of priority areas and issues for the American-Caribbean region and, with the other two regions, by linking regional priorities with CABI's capabilities, resources and strategies and identifying synergies among partners

Opening Session

Delegates were warmly welcomed by Dr Arlet Vargas, Deputy Director of Plant Health in the Ministry of Agriculture and Livestock, and Dr Dennis Rangi, CABI's Director General, Development.

The host country, Costa Rica, is a prospective member of CABI. Costa Rican Minister of Agriculture and Livestock, the Hon. Dr Luis Felipe Arauz Cavallini, gave a thought-provoking keynote speech in which he highlighted the crucial role of agriculture in development, globally, regionally and nationally. He stressed the importance of actively seeking solutions for climate change mitigation and adaptation, and attracting younger generations to agriculture and farming. *"The competitive environment requires countries to transform from input-intensive agriculture to knowledge-intensive agriculture, making farming a profitable knowledge-based business. CABI, as a knowledge organization, can play an important role, and our country is committed to becoming a member country of CABI,"* said Dr Arauz. The Vice Minister, Mr José Joaquín Salazar, also gave a comprehensive overview of the country's agriculture and later, representatives from Costa Rica's research and extension services presented an interesting and well-prepared showcase of agricultural projects and programmes in their country.

In his introductory address, Dr Dennis Rangi, CABI's Director General, Development, said, "These triennial consultation meetings have become an important activity for CABI. Driven by the priorities of its 48 member countries, these meetings give CABI member countries an opportunity to influence the organization's agenda and for CABI to listen to and engage directly with you." Talking about sharing information and knowledge, Dr Rangi said, "This region has a lot to share with the rest of the world. Although food security in particular and agriculture in general remain key challenges, especially in the Caribbean, over the past 20 years, Latin America has significantly increased its production and share in global agricultural trade and has the potential of becoming a food superpower."

Dr Trevor Nicholls, CABI's CEO, set the context of what CABI is, what CABI does and what CABI wants to achieve. He gave an overview of CABI's capabilities and strengths, as well as the programmes and projects CABI is leading or involved in all over the world, especially in the Americas and Caribbean region. Looking at major food security challenges, Dr Nicholls pointed out the perfect storm of growing world population, dwindling mineral resources, food shortage, competition for land use and climate change. He talked about how we can make major improvements in food and nutritional security by losing less of what we already produce – without any more land, water or inputs. He reviewed CABI's strategies and progress towards tackling these challenges, covering nutrition security, farmer incomes, sustainable farming and protection of biodiversity. In detail, he explained CABI's Vision 2020 for CABI: *"to be the place to go for information on agriculture and the environment".*

Presenting Case Studies from Member Countries and Partners

Dr Michèle Marcotte of **Canada**, Dr René Andrés France of **Chile**, Mr Dermon L. Spence of **Jamaica**, and Professor Carlos Frederico Wilcken of **Brazil** each described the current and future partnerships with CABI, showcasing the work that CABI and their countries have collaborated or will collaborate on, stated their top national priorities, and also suggested opportunities and mechanisms to strengthen partnership. These presentations described long and productive partnerships with CABI, and highlighted opportunities where CABI can continue to play an important role in facilitating more south-south and triangular collaborations among CABI's member countries and partners.

Dr Marcotte described the history of collaboration between Canada and CABI. *"In the early days, CABI's work with Canada involved studying forest pests. The emphasis has gradually shifted and CABI is now studying agricultural pests and weeds almost exclusively in Canada"*, she said. Dr Marcotte noted that in 2010, the Canadian government approved the releases of parasitoids against the invasive leek moth and the lily leaf beetle control agents from Europe have been released against more than 50 invasive agricultural pests, primarily in North America. CABI contributed to the successful control of important agricultural pests such as cereal leaf beetle, apple ermine moth, alfalfa weevil and Lygus plant bugs.

In his presentation, Dr France informed the participants that Chile became a member of CABI in 1995, and the National Agricultural Research Institute (INIA) was nominated as CABI's National Implementing Agency. Currently, a Darwin Initiative project (2015-2017) is being implemented by CABI and INIA to restore the native flora and associated microflora of Robinson Crusoe Island – focusing on the control of invasive species in Archipelago Juan Fernandez.

Mr Spence gave an overview of Jamaica's agricultural sector. He said that the sector is the second largest source of employment involving over 18.2% of the employed labour force in 2013 and earned US$174.8M in foreign currency. He noted that in order to improve on their agricultural sector, a partnership agreement on the Plantwise Programme was signed between the Government of Jamaica and CABI in 2013 and implementation commenced in 2015. The Plantwise Programme is now incorporated into the mandate of an existing national Agricultural Health and Food Safety Committee and its sub-committee – Plant Health and Food Safety Coordination Committee (PHFSCC). So far, 15 officers have been trained as ToT plant doctors, 2 plant clinics are operational, and 66 prescriptions were issued to 49 farmers. In addition, he talked about Jamaica's involvement in a project, namely Mitigating the threats of Invasive Alien Species in the Insular Caribbean, in collaboration with CABI.

Prof. Wilcken informed the participants that Universidade Estadual Paulista (UNESP) is a public university with 24 campuses spreading through the state of São Paulo, a major economic power in Brazil. UNESP is a research university, ranked among the best in the country, has received international recognition for the quality of its research and academic activities, and the School of Agricultural Sciences (UNESP FCA) is one of the 24 campuses based in Botucatu. Currently, UNESP FCA is collaborating with CABI to assess the potential for the biological control of forest pests in South America and select the most promising targets for collaborative projects. He noted that a MoU on collaboration between EMBRAPA and CABI has already been signed.

Reviewing and Identifying Priorities of Member Countries

Before dividing the participants into groups, Mr Naitram (Bob) Ramnanan, CABI's Regional Representative of Central America and the Caribbean, reminded delegates of the consolidated priority areas and issues from 2012 -13 regional consultation meetings, and highlighted CABI's responses and thematic strategies. He then guided the participants through the importance and process of the next breakout discussion session.

Divided into 2 sub-regional groups, the participants adopted the following steps during breakout and plenary discussions, from articulating national priorities, to agreement of sub-regional and regional priority areas, and issues:

1. Review and agree on the continued relevance of 7 priority areas and issues identified in 2012-2013
2. Articulate top 3 new emerging national priority areas by each member country
3. Discuss and agree the top 3 new emerging sub-regional priority areas
4. Discuss and agree the specific issues of each of these 3 priority areas
5. Integrate both relevant priority areas/issues identified previously and sub-regional new emerging priority areas/issues into "Sub-regional priority areas/issues 2015"
6. Discuss and agree the Asian-Pacific "Regional Priority Areas and Issues" after reporting back

It was generally believed that CABI had made substantial progress in addressing the key priorities of the member countries. Table 1 summarizes some new emerging national priority areas while Table 2 summarizes regional priority areas and issues agreed at the meeting.

Table 1: New emerging national priority areas (top three areas)
The Americas: Brazil, Canada, Chile, Costa Rica and Panama

Brazil	Canada	Chile	Costa Rica	Panama
• Animal health • Invasive species as quarantine pests (PRA) • Food safety	• Ecosystem services • IAS as quarantine pests • Access and benefit sharing	• Food safety/ contamination (human pathogens, e.g. salmonella, viruses) • Happy with previous priorities	• Quality control of biological control agents and bioproducts • Invasive plants with allopathic properties (research)	• IAS as quarantine pests • Soil health and quality • Animal health

The Caribbean: Anguilla, Barbados, Bahamas, British Virgin Islands, Grenada, Jamaica, Montserrat, Trinidad and Tobago, and Turks and Caicos

Anguilla	Barbados	Bahamas	British Virgin Islands	Grenada	Jamaica	Montserrat	Turks and Caicos
• Capacity building	• Drought mitigation	• No new issues	• Communication with, and education of, farmers • Capacity building	• Agricultural health and food safety • Natural resources management • Biosafety	• GMOs • Food safety • Agri-financing	• Vertebrate pests (invasive and feral)	• Food safety • Capacity building

Table 2: Regional Priority Areas and Issues identified/consolidated at the American and Caribbean Regional Consultation, 10-11 February 2016, San José, Costa Rica

Priority Areas SDGs 1, 2, 12, 15,	Priority Issues
Knowledge management, communication and use	Publication of, and access to, authoritative and up-to-date information resources. Technology transfer (particularly amongst member countries, and south-south); Sharing knowledge amongst stakeholder groups including youth and grassroots (Facebook Agriculture); Mobile advisory services; Improving communications to farmers; Evidence-based policies. Archiving and managing institutional and national research, production and statistical information. Access to experts, case studies, lessons learned, etc. Pest information and presence knowledge-sharing platform. Promotion and farmer awareness to promote uptake of biological products. Pest Risk Analysis standards and tools Alternative livelihoods; Diversification; Tourism, including agro-tourism; youth and agribusiness; Use of social media and new technology
Systems approach to Plant health	Managing a range of stressors including pests, water, and soil health; Pollinators; soil microbiome; ecosystem services in agriculture Pollinators; Soil microbiome; ecosystem services in agriculture. IPM to reduce pesticide inputs, including collaboration with agro-input dealers and advice on alternatives to banned pesticides; Early warning systems for newly emerged/key pests and diseases; Quality assurance and application advice on bio-inputs. Minor crops and lack of availability of registered products on minor crops. Diversification from priority crops; Also ornamentals
Biodiversity and invasive species management	Invasive management; Capacity building of IS identification and diagnostics; Habitat manipulation/agro-biodiversity enrichment. Microbial resource collection, characterization and utilization; Development and production of biopesticides and biological control agents, and implications of their use. Public education. Impact on livelihoods.. Understanding (new) legislation among the countries, reinforcing linkages between scientific community and government, sharing procedures/requirements. Greater deployment of molecular analysis
Development of trade and market access for safe food, domestically, regionally and internationally	SPS compliance; Value-chain focus and post-harvest value-addition; GAP and best practices promulgation, and capacity building; Commercialization and contract farming. Import substitution; Farm/product certification; Linkage between producers and tourism; agri-tourism GAP to prevent food contamination, maximum pesticide residue limits, Heavy metal contamination, GMOs., Animal health, Zoonotic diseases; Anti-microbial resistance; Genetic resource preservation
Cross-cutting: • Climate Change – resilience, adaptation and mitigation • Institutional capacity building • Monitoring & Evaluation of research and development activities to show impact • Involvement of women and youth	

Texts in black: those were regarded as relevant priority areas and issues from the previous consultations
Texts in orange: those were identified as new emerging priority areas and issues by member countries

Highlighting issues of select key CABI strategic areas

The programme also focused on invasive species – the livelihood threats facing the Americas and Caribbean, and highlighted issues of other select strategic areas such as:

- Open Data and Mobile information delivery
- Plantwise: success and challenges
- CABI's role in facilitating trade and market access
- CABI's Policy on Access and Benefit Sharing (ABS) Compliance under the Nagoya Protocol

The special session on invasive species aimed to address the following overarching objectives:

- Discuss and review the impact of invasive species on ecosystems and livelihoods in the Americas and Caribbean
- Identify where gaps lie in current action plans and what can be done collectively to address the issues
- Identify partnerships and next steps for addressing invasive species at a regional level.

These sessions started with CABI presentations introducing the issues, followed by breakout discussions with pre-prepared sets of questions. Appendix A summarizes these presentations while Appendix B captures outcomes of the breakout discussions.

Dr Peter Mason, Research Scientist, Ottawa Research and Development Centre, Agriculture and Agri-Food Canada (AAFC), emphasized the key challenges and opportunities for Biodiversity and Bio-resources and also highlighted the different ways AAFC and CABI have worked together to tackle the IAS threats to Canadian agriculture. In conclusion, he recommended the participants to determine biocontrol potential for IAS before they become a threat, understand IAS host-natural enemy communities and effects of global change, develop risk assessment methodologies, and build a DNA library for Biological Control Agents (BCAs).

Dr Bernard Laehr, Researcher, Corporación Colombiana de Investigación Agropecuaria (COIPORCA) of the Ministry of Agriculture, Colombia, stated that the American palm weevil (APW) is the most important palm pest in tropical America. He illustrated the devastation the red ring disease has caused around the country. To eradicate this pest, the Columbian government, USAID and the EU have invested more than USD 5 million in Tamaco in mass tapping and eradication of diseased palms and replanting but the weevil problem has continued as before. Dr Laehr noted that the only viable alternative is increasing the natural mortality of the weevils in the environment through biological control.

Final session: Consolidation of outcomes

The final session started with reporting back on the outcomes of breakout discussions, and discussions on regional "Priority Areas and Issues For Action", followed by discussions on collaboration with international, regional and sub-regional bodies and other partners (e.g. the private sector, south-south co-operations and triangular co-operations). Representatives of member countries and partners were actively reflecting on modalities and cases of successful collaboration in their counries.

CABI CEO, Dr Trevor Nicholls, concluded that by the end of the two days, the following objectives set out at the beginning of the consultation were met:

- Review the progress made in addreessing priority areas identified during previous consultations
- Identify key emerging issues influencing and impacting on sustainable development in the region, and identify national and regional priorities
- Share country experiences and views
- Develop regional plans by linking national/regional priorities with CABI's capabilities and strategies, and identify synergies among partners

Dr Nicholls confirmed that the outcomes from this Regional Consultation would:

- be consolidated with those from other regional consultations
- be aligned to the Global Goals for Sustainable Development and specific targets for each GGs
- be matched with CABI's capabilities, resources and strategies, and prioritises

- influence the revision of the CABI Medium Term Strategy 2017-19 and Vision 2020
- be fed into the bigger CABI Review Conference 2016, which is scheduled for 26-27 July 2016
- facilitate implementation of agreed joint initiatives with member countries

Dr Nicholls encouraged member country representatives, who unanimously agreed on CABI's policy on access and benefit sharing in principal at the meeting, to seek approvals from relevant national authorities before the CABI Review Conference in late July 2016.

Finally, Dr Nicholls gave the vote of thanks and the meeting was officially closed.

Positive feedbacks were received from all delegates through completion of survey forms plus verbal comments, parting remarks and follow-up e-mails, which confirmed that the Americas and Caribbean Regional Consultation meeting was highly successful; over 90% of delegates gave the "very satisfied" rate in their overall ranking, with examples of comments being: *"The meeting provided an enormous opportunity for networking and the rich and interesting discussions were particully useful"*, *"It was useful to have learnt about the great impact of invasive species on economy of many countries"*. The suggestions for improvement included *"In a country like Costa Rica which has a developed agricultural system, at least a ½ day trip to visit areas of interest should have been included"*, and "*More presentations on case studies involving solutions through CABI/Plantwise would be desirable"*.

Further consolidation of the outcomes from regional consultations

Further efforts were made to integrate the three sets of tables of priority areas and issues from the three regional consultations, and consolidate them by matching with CABI's capabilities, resources and strategies. Table 3 presents consolidated outcomes from the three regional consultations.

Efforts have also been made to link member country requests with the Global Goals for Sustainable Development and specific targets for each Goals, and develop a specific strategy addressing both the Global Goals for Sustainable Development and Member country priorities. The final outcomes will be reflected in CABI's Medium Term Strategy 2017-19.

Table 3: Consolidated Regional Priority Areas and Issues from the three Regional Consultation meetings (2015-2016)

Priority Areas In support of GGs 1, 2, 12, 15, 17 and COP21	Priority Issues
Development of trade and market access for safe food, domestically, regionally and internationally	• **Provide advice and support for farmers** on aspects such as GAP compliance, Phytosanitary standards and compliance, advice on crop diversification (e.g. HVH), postharvest management, improving quality of agricultural inputs, access to market information, improved technology, improved range management for livestock • **Support for market access along value chains**, including SPS compliance and standards harmonization, food safety • **Stimulate the creation of farmer organizations**, developing entrepreneurial and commercial skills, risk management, access to affordable credit • **Strengthen support for food safety**, including information on legislative and regulatory requirements, prevention of mycotoxins, maximum residue levels, heavy metal contamination, animal health and welfare, zoonotic diseases, and the safe use of veterinary drugs • **Develop public-private partnership** to support smallholder market access along value chains, including SPS compliance and standards harmonization, food safety
Knowledge management, communication and use	• **Improve communication** with development stakeholder groups for greater reach, frequency and impact of messaging to stimulate technology uptake and deliver new knowledge to farmers using mixed methods (including mass media such as mobile and social media, as well as extension approaches based on face-to-face interactions), gender inclusive approaches for all stakeholder groups, **particularly use of ICTs** (including e-M&E; e-statistics and e-vouchers) • Expand the scope of CABI's **support to advisory services** to include soil health, selection of crop and seed varieties, integrated water and land management, animal health and welfare • Assist national services with **information and data management**, e.g. publication of and access to authoritative information resources, archiving and managing research data, awareness-raising, and policy development for open and big data policies

Systems approach to Plant Health	• **Support farmers** for informed decision-making at the farm level through strengthened extension services able to advise on IPM in high value and staple crops, rational use of agrochemical inputs, including biofertilizers, biotechnology applications for pests and diseases including biopesticides, and biological control agents • **Develop better approaches t**o manage pollinators, soil health, and ecosystem services supporting agriculture • **Support plant health systems**, including aspects such as improved diagnostic skills at all levels, informed advice on new resistant varieties, seed selection, and GM crops, informed policy leading to an improved regulatory and legislative environment, optimizing links between different sectors • **Build resilience in farming systems** at all levels to better adapt to climate and other changes, including the management of a range of biophysical stressors including pests (IPM), water (IWM), and soil nutrients (INM), and early warning and rapid response systems for newly emerging/key pests and diseases. • Promote **access to quality controlled agricultural inputs** (seeds, fertilizers, chemicals) • Strengthening support for **livestock management**, including improved range management, advice regarding zoonotic diseases, and the safe use of veterinary drugs
Food & nutrition security	• Contribute to **improved food security** at all levels by the application of technology including new crop varieties to improve efficiency and productivity, reduction of postharvest losses through improved storage, postharvest processing and preservation • Promote the development of **nutrition sensitive agriculture** through support to aspects such as awareness raising and policy development, human health and food safety, advice on nutraceuticals and bio-fortification advice, food preparation, food diet diversification • **Strengthening seed systems**, including aspects such as improved genetic materials, availability of neglected crops, and improving self-saved seed. • P**romote Climate Smart Agricultural practices** that reduce greenhouse gas emissions, adapt to changing conditions, and improve resilience • Promote **agricultural diversification** and the use of **indigenous crops** • Support **cash crops**, fodder, fuel, and fibre production and ornamentals
Biodiversity and ecosystem management	• Improve **prevention and management of invasive species** using national and regional approaches, including capacity building in remote diagnostics, strengthening capacity for management and control of terrestrial and aquatic invasives. • Develop **capacity to use microbial resources**, e.g. pharmaceutical and nutraceutical production, biopesticides, composting and waste management. • C**omply with Nagoya Protocol**, and promote its use, in support of CBD • **Build a coalition of funding partners** to prevent, eradicate or manage the invasive insects and weeds constituting the greatest threats to food security, livelihoods and biodiversity
CROSS-CUTTING: Capacity building and governance at local, national and regional levels Developing public-private partnerships when appropriate Enable, empower and employ women and youth Embed monitoring, evaluation and impact analysis in all activities	• Facilitate knowledge transfer in **South-South interactions** involving member countries • **Provide information and training resources** to support sustainable agro-tourism and other non-farm rural employment, particularly for women and youth • **Build individual, institutional and regional capacity** to develop and govern agricultural innovation systems • **Reinforce linkages** between the scientific community, universities, government, and farmer associations • Develop public-private partnership to **support smallholder market access along value chains**, including SPS compliance and standards harmonization, food safety • Assist national services with **information and data management**, e.g. publication of and access to authoritative information resources, archiving and managing research, production and statistical data, awareness-raising, and policy development for open and big data policies

Appendix A - CABI Presentations

CABI in the Americas and Caribbean – Partnerships and Action

Yelitza Colmenarez, Regional Representative, South America and Naitram (Bob) Ramnanan, Regional Representative, Central America and the Caribbean

Dr Colmenarez outlined the key facts about the Americas and Caribbean region, described what CABI has done in response to the priority issues identified in the last regional consultation in 2013, and briefed the participants on the way forward for the region. On behalf of CABI, she promised to continue working closely with the member countries, make sustainable project development plan, build smart partnerships, develop more bilateral, tripartite, and multilateral collaboartion, among others.

Open Data and Mobile information delivery

Andrea Powell, Chief Information Officer

Mrs Powell introduced the new intiative, Global Open Data for Agriculture and Nutrition (GODAN), which is aimed at making data accessible, usable, and sharable by anyone. CABI hosts the Secretariat of GODAN. Mrs Powell encouraged the participants to sign up for this because it needs a licence that permits anyone to access, use, and share it.

Furthermore, she explained in detail about another one of CABI's initiatives – mNutrition. The mNutrition initiative builds on the expertise and capacity of two existing platforms, the mHealth and mFarmer/ mAfri. CABI leads the global content consortium arm of this major initiative to harness mobile phones to promote nutrition-sensitive health and agriculture messages to millions of women.

Plantwise: success and challenges

Dr Ulrich Kuhlmann, Regional Director, Europe and the Americas and Plantwise Programme Executive

Dr Kuhlmann described in detail how Plantwise works and stated that its success depends on partnership with plant health stakeholders at national, regional and global levels. Plantwise has 3 components – Plant clinics, a Knowledge Bank and M&E. He stressed that for Plantwise to continue working, there is a need to align with country development plans, engage partners beyond national implementation teams/coordination units for broader buy-in and commitments of governments in dedicating resources to Plantwise operations.

CABI's role in facilitating Trade and market access

Julie Flood, Global Director, Trade and Commodities

To set the scene, Dr Flood highlighted the challenges and issues facing trade and market access, particularly in the Americas-Caribbean region. She described the role CABI is playing to solve some of the problems, and showcased several projects CABI is undertaking in this area including the Good Seed Initiative, Cocoasafe, and a Credit Guarantee scheme for coffee growers, etc. She stressed that trade can help achieve both food security and economic growth, and that all CABI's themes support trade and market access.

Bioservices

Richard Shaw, Country Director, CABI Europe-UK, on behalf of David Smith, Director of Biological Resources

CABI aims to engender trust, to facilitate science, and to ensure that benefits are shared. In detail, Dr Shaw underscored the benefits of the implementation of the Nagoya protocol but CABI needs support from its member countries. He gave some examples of best pratices undertaken by CABI. CABI will share benefits as outlined in its policy and also operate in compliance with the protocol.

Invasive species – threats facing the Americas and Caribbean

Richard Shaw, Country Director, CABI Europe-UK

Invasive species are a plant, animal, fungi or bacteria that are not native and have negative effects on an economy, environment and health. CABI's vision is to stop the world's worst invasive species undermining the livelihoods of 50 million farming families. Dr Shaw highlighted another one of CABI's initiatives, the Big Push, targeting 10 invasives in 10 countries. This initiative will develop national and regional linkages to facilitate a systematic approach to IAS, create and share knowledge to enable countries to identify, prevent and manage threats, and also develop best management plans to address 10 of the world's worst invasives. This can only be done with member country support and mandates.

Appendix B: Outcomes from the breakout discussions on select issues

1. Knowledge Business (Brazil, Canada, Chile, Montserrat and Turks and Caicos Islands plus partners)

Is there a good understanding of the issues on making agricultural data open?

- Yes, generally

What are the issues?

- Data validation/reliability – who is going to give it the seal of approval?
- Concerns about security
- Challenge of legacy content – how much would it cost!?
- Defining different types of data (restricted vs. open) – need definitions
- Implementation issues – lack of practical advice
- Digital skills – lack of them
- Ownership/ Intellectual property
- Patchy coverage (e.g. meteorological data)
- Lack of standards
- Knowledge of what's available
- Problem of getting data from private companies

What's needed to remove constraints from making government data open?

- Advice and guidance on how to make data open
- Case studies
- Agreed standards for data validation
- What's needed in national, regional and continental fora to put open data on the agenda?
- Heads of State don't understand the benefits and focus on the costs, so they need educating

How can we bring the agricultural and nutrition sectors together, what needs to happen?

- CARICOM meeting – get Open Data on the agenda
- OECS, OCTA also

What should we be doing?

- Providing advice and leadership
- Costs

Priority Area For Action	Open Data
Priority Issues	• Data validation/reliability – who is going to give it the seal of approval? • Concerns about security • Challenge of legacy content – how much would it cost!? • Defining different types of data (restricted vs. open) – need definitions • Implementation issues – lack of practical advice • Digital skills – lack of them • Ownership/ Intellectual property • Patchy coverage (e.g. meteorological data) • Lack of standards • Knowledge of what's available • Problem of getting data from private companies • Big Data and the challenges it raises
Specific activities	• Regional meetings • Guidance through GODAN programme • Setting standards for validation and different levels of validation required (and gaining buy-in) • Data classification (definitions for data types) • More information, advocacy and lobbying • Authentication of data (expert vs indigenous knowledge)
Timeframe	Straight away and on-going
Resources/funding	GODAN resource base needed – advice notes, case studies, "how to" guides, implementation guidelines, standards Funded through GODAN initiative
Partners	CARICOM (Caribbean Community) OECS (Organization of Eastern Caribbean States) OCTA (Overseas Communities and Territories) GODAN members and working groups
Recommendations for CABI MTS	Add Open Data to Knowledge Management priority Refer to, and support, GODAN within strategy

2. Plantwise: success and challenges (Barbados, Costa Rica, Grenada, Jamaica and Panama plus partners)

What are the three priority plant health issues that currently constrain?

- Efforts to increase crop productivity?
  - Diagnostic capacity (speed of diagnosis is key, timely access to international experts for diagnostic support)
  - efficient management of pests (once you've diagnosed it, you need to have an effective management system in place – starting from prevention, IPM principles)
  - Access to pest tolerant varieties, quality planting material
  - Access of plant-based agricultural products to markets?
  - Restrictions based on pest presence (e.g. EU restrictions)/phytosanitary barriers
- Other food safety issues (e.g. EU restrictions on cadmium in cocoa)

Which pest information resources do you use currently to address the issues above?

- PW KB and/or the CPC - Costa Rica uses both, Jamaica uses KB, Barbados uses KB
- If PW KB and the CPC, what improvements do you wish to see in resources to enable them serve your needs better? Access to full text (Costa Rica)
- Caribbean pest diagnostic network
- National databases/publications/universities
- Subscriptions to scientific journals
- University networks
- Museum – specimen collection
- INBIO database
- USDA information
- Crop-specific compendia produced by different universities
- National pest list

How could pest data captured under PHS initiatives (e.g. PW) and deposited in a database (e.g. POMS) be put to better use by your country?

- Costa Rica uses it to develop a national pest list and compare it with international data (and data requested from exporting country) for PRA when importing
- PW data to prioritize topics for producing extension materials, determining hot spots or new diagnoses
- Monitor progress of economically important pests in priority crops within the country
- Pest forecasting tool
- Sharing important concerned for countries at CPHDF – some of this can be generated from clinic data
- Jamaica – discussed at National Steering Committee (reps from across PHS)
- Produce market access reports

How can diagnosis services be improved in the plant health systems of your country?

- Linkages and flow of information from farms to labs (internal and external)
  - Regional diagnostic networks,
  - "Hotline" for farmers
  - Public sector can be too slow – sometimes farmers go private/university
- Cost, expertise and equipment
  - Monitoring for pest forecasting;
  - Need access to taxonomists
  - Training of scientists in new and emerging areas, new techniques (esp. viruses). continuing professional education (distance education, courses, exchange)
  - Consistent methodology/protocols for diagnosis, regional standards
  - Database for key taxonomy information/diagnostic reference,
- Other issues
  - Regional harmonization of emergency response plans and pest declaring (e.g. coffee rust in Central America) plus measures to prevent, e.g. overuse of fungicides in an uncoordinated response
  - Climate change information for forecasting of changes in pest distribution
  - Most countries in Caribbean don't have entry quarantine facilities
  - Testing can be expensive – farmers sometimes can't/don't want to pay

3. Trade and Market Access (Anguilla, Bermuda, British Virgin Islands and Colombia plus partners)

What issues hinder smallholders from participating in and benefitting from agri-food trade? Take into consideration:

- Regional: cost of labour; farmers are not organized; market information; limited opportunities for processing; marketing skills lacking to enter both international and local markets; Market information is important to prevent the exploitation of farmers by middlemen
- Bahamas: lack of consistent supply of quality produce; cost of labour; transporting produce to main market in Nassau from family islands, post-harvest losses and pilfering; crawfish and conch are the main exports, HACCP compliant; quota system in place for crawfish.
- Anguilla: scale limited to local market
- Trinidad: reliable market information is limited for certain crops, e.g. Hot peppers; farmers produce specialty crops, e.g. dasheen leaves, cilantro and hot peppers; fluctuating market conditions
- Colombia: farmers are not organized

Priority Area for Action

Priority Areas	Priority Issues
Trade and market access and development, domestically, regionally and internationally	SPS compliance; Value-chain focus and post-harvest value-addition; GAP and best practices promulgation, and capacity building; Commercialization and contract farming. Import substitution; Diversification and priority crops; Farm/product certification; Linkage between producers and tourism; agri-tourism BVI: Capacity building and diversification of priority crops; Bahamas: SPS; value chain focus; Capacity building; import substitution; Changing consumer taste leading to greater imports; Anguilla: Similar; TT: Similar; Colombia: certification requirements that requires farmers to be organized. Information: for improving crop practice and for alternative cropping systems to aid diversification and reduce imports. Certification requirement. Raised awareness of potential threats to agriculture. Marketing information and knowledge.

4. Invasive Species Management

To dig deeper and also go into details, the participants were divided into 3 groups by random selection and discussed the following:-

The nature and scale of the problem

How much of an issue are IS for the region and why?

- Huge! Massive impact on trade, livelihoods, tourism…
- Lack of data/evidence
- Lack of ownership/no champion in government – because of the transboundary issues
- Vested interests! Relative importance of tourism vs. agriculture
- Pests are very adaptable, so can move faster than the controls!
- "Invasive species to my mind constitute one of the biggest limiting factors to increasing agricultural production. It affects capacity for trade, agricultural production, rural livelihoods, and everything"

Who or what is affected? (types of farmers/professional; business sectors, etc.)

- Everyone/the whole of society
- Think of agriculture more broadly – also growing things, e.g. tourism, etc.

Which are the most important/damaging IS for you now, or give you the most concern in the short-term?

- See national pest lists (Group 1)
- Drosophila suzuki (Canada)
- Brown marmorated stink bug (Panama)
- Kudzu bug (Panama)
- Sweet potato weevil (Barbados)
- Black sigatoka (Grenada)
- Red palm mite (Costa Rica, Caribbean)
- Palm weevil (Caribbean)
- Lethal yellowing (Panama)
- Tuta absoluta (Panama, Caribbean)
- Fusarium oxysporum TR4 (Costa Rica)
- Trogoderma granarum (Costa Rica)
- Moko disease (Grenada)
- Ralstonia (Costa Rica)
- Striga
- Japanese knotweed
- Lionfish (Grenada, Bahamas)
- Water hyacinth
- Rubber vine (Brazil)
- Water weeds in general
- Dog strangling vine
- Wild sugarcane (Costa Rica)
- Globodera rostochiensis (Costa Rica)

Structures and Solutions

What are the barriers at national and regional level to effective IS management?

- Geographical barriers/porous borders
- Socio-economic barriers (if people can't afford the food in the shops, they will import it from other places)
- Lack of public awareness
- Weak legislation (and lack of enforcement) and plant quarantine systems
- Lack of political will (compare to Zika virus!)
- Lack of compliance with plant quarantine (not harsh enough penalties?)
- Funding
- People don't trust biological control
- Lack of awareness of IS and social/economic threat. BIG SCARY MONEY
- Inadequate human resources – both availability and capacity
- Week diagnostic infrastructure in border posts/entry quarantine facilities
- Shared infrastructure – can't upgrade/renovate because we use other institutions' facilities
- Small size of esp. small island states prevent internal quarantine systems
- Getting to species level diagnoses of invasive species and whether it's invasive or native in the first place
- Political issues – staff turnover and political instability

What should we do collectively to address IS issues and remove the barriers mentioned above? How will we achieve this?

- Develop better forecasting systems
- Share knowledge and collaborate
- Develop regional action plans and surveillance systems
- Awareness raising (targets: tourism actors, decision makers)
- Small-scale practical infrastructure everywhere (e.g. incinerators)
- Structured national protocols – and share them to avoid reinventing the wheel
- Data sharing
- Use sub-regional/regional networks/organizations (e.g. OIRSA, Andean community, etc.)
- Improve quarantine systems

Why is this not just more of the same? What is new in the ideas being proposed?

- Evidence of financial impact
- Better tools for forecasting and pest risk analysis
- Multilateral approach
- Filling information gaps
- Building on Plantwise
- Emergency response plan at regional level
- Use of technology and sharing technology

Who would be the key collaborators who need to come together nationally and regionally to make an impact (and what is CABI's role in helping this process)?

- Tourism industry (as both culprit and victim)
- Horticulture
- Exotic pet industry (and the plants that come in with them)
- Multilateral and regional institutions (BCIE would be interested in helping to fund)

What can CABI do to help?

- Share experiences from other parts of the world, platform for sharing case studies
- Development of factsheets and handouts for potential threats
- Support for Pest Risk Assessments (PRAs)
- Directory for where to source good planting material
- Support for risk analysis – if I'm importing X from Y, what are the top 5 I need to look out for? And what other countries have X that don't have those pests?
- Videoconferences with CABI experts for advice

Appendix C: Acronyms

ABS	Access and Benefit Sharing
APW	American palm weevil
BCAs	Biological Combat Assessment System
BCIE	Banco Centroamericano de Integración Económica
CARICOM	Caribbean Community
COIPORCA)	Corporación Colombiana de Investigación Agropecuaria
CPHDF	Caribbean Plant Health Directors Forum
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária (Brazilian Agricultural Research Corporation)
EMT	CABI's Executive Management Team
GAP	Good Agricultural Practice
GODAN	Global Open Data in Agriculture and Nutrition
HACCP	Hazard Analysis and Critical Control Point
HVH	High Value Horticulture
IAS	Invasive Alien Species
ICT	Information and Communication Technologies
INBIO	Instituto Nacional de Biodiversidad (National Biodiversity Institute, Costa Rica)
INGOs	International Non-Governmental Organizations
INIA	National Agricultural Research Institute
IPM	Integrated Pest Management
ISC	Invasive Species Compendium produced by CABI
LO	CABI's Liaison Officer
MoA	Ministry of Agriculture
MTS	Medium Term Strategy
NPPOs	National Plant Protection Organizations
OCTA	Overseas Communities and Territories
OECS	Organization of Eastern Caribbean States
OIRSA	Organismo Internacional Regional de Sanidad Agropecuaria (Guatemala)
PHFSCC	Plant Health Food Safety Coordination Committee
PRAs	Pest Risk Assessments
PW KB	Plantwise Knowledge Bank
SDG/GG	Sustainable Development Goals/now Global Goals for Sustainable Development
UNESP	Universidade Estadual Paulista
UNESP FCA	UNESP – School of Agricultural Sciences
USDA	United States Department of Agriculture

Appendix D: Programme

IMPROVING LIVELIHOODS THROUGH KNOWLEDGE SOLUTIONS AND PARTNERSHIPS

American and Caribbean Member Countries Regional Consultation

9-11 February 2016, Barceló San José Palacio, San José, Costa Rica

Tuesday, 9 February 2016	
Arrival of Delegates	
1900 – 2100	Welcome Reception (Aguamarina by the Swimming Pool)

Wednesday, 10 February 2016 (Ballroom Greco B)	
0830 – 0900	Registration (Ballroom Greco B)
Opening Plenary Session: CABI and its Membership	
Chairperson: Dr Dennis Rangi, Director General, Development	
0900 – 0920	Welcome Address and Introduction *Dr Arlet Vargas, Deputy Director, Plant Health Department, Ministry of Agriculture and Livestock* *Dr Dennis Rangi, Director General, Development*
0920 – 0950	CABI: Progress Updates and Medium-term Strategy Review *Dr Trevor Nicholls, Chief Executive Officer, CABI*
0950 – 1010	Keynote Address - Costa Rica's Agricultural Development and Outlook *Mr José Joaquín Salazar, Vice Minister, Costa Rican Ministry of Agriculture and Livestock*
1010 – 1040	CABI in the Americas and Caribbean – Partnerships and Action *Dr Yelitza Colmenarez, Regional Representative, South America, CABI*
1040 – 1110	Networking Break (Ballroom Greco B) and Group Photo (by the Swimming Pool)
Session 1: Presenting Case Studies from Member Countries and partners	
Chairpersons: Ms Rena S. Glinton, Permanent Secretary, Ministry of Agriculture and Marine Resources, Bahamas and Dr Ulrich Kuhlmann, Regional Director, Europe and the Americas and Plantwise Programme Executive	
1110 – 1210	Working in Partnership with CABI – Presentations from member countries and partners Canada – *Dr Michèle Marcotte, Director of Research, Development and Technology, Eastern Cereal and Oilseed Research Centre, Agriculture and Agri-Food Canada (AAFC)* Chile - *Dr René Andrés France, Fitopatólogo* Jamaica - *Mr Dermon L. Spence, Chief Technical Director, Ministry of Agriculture and Fisheries* Brazil – *Professor Carlos Frederico Wilcken, Vice-Director, Faculdade de Ciências Agronômicas, São Paulo State University (UNESP)*
1210 – 1310	Showcasing Costa Rica's Agriculture (Demonstrations) *Opened by The Hon. Dr Luis Felipe Arauz Cavallini, Minister of Agriculture and Livestock*
1310 – 1410	Buffet Lunch (Anfora Restaurant)
Session 2: Reviewing/Identifying Priorities of Member Countries	
Chairpersons:Mr Daniel Lewis, Chief Agricultural Officer, Ministry of Agriculture, Forestry and Fisheries, Grenada and Mrs Andrea Powell, Chief Information Officer, CABI	
1410 – 1425	Introduction *Mr Naitram (Bob) Ramnanan, Regional Representative, Central America and the Caribbean, CABI*
1415 – 1540	Breakout Discussions 1 - Sub-Regional Discussions (2 groups) (Americas and the Caribbean)
1540 – 1610	Networking Break (Ballroom Greco B)
1610 – 1710	Reporting back, and agreeing on broad Regional Priority Areas
1900 – 2200	Official Dinner (Aguamarina by the Swimming Pool)

Thursday, 11 February 2016 (Ballroom Greco B)	
Session 3: Prioritizing Key Issues	
Chairpersons: Mr William Vanterpool, Director of Agriculture, Ministry of Agriculture, Anguilla and Dr Qiaoqiao Zhang, Director of Memberships, CABI	
0830 – 0850	Introduction: Objectives of the day Presentation of the consolidated Priority Areas and Issues (identified on the previous day) *Dr Ulrich Kuhlmann, Regional Director, Europe and the Americas and Plantwise Programme Executive*
0850 – 0950	Highlighting issues of select CABI strategic areas Knowledge Business (open data and mobile information delivery) – *Mrs Andrea Powell, Chief Information Officer* Plantwise: success and challenges – *Dr Ulrich Kuhlmann, Regional Director, Europe and the Americas and Plantwise Programme Executive* Trade and Commodities (CABI's role in facilitating trade and market access) – *Dr Julie Flood, Global Director, Trade and Commodities* Bioservices (CABI's Policy on Access and Benefit Sharing Compliance under the Nagoya Protocol including plenary discussions) – *Dr Richard Shaw, Country Director, CABI Europe-UK*
0950 – 1050	Breakout Discussions 2: Highlighted issues of CABI strategic areas (3 groups) Group 1: Open data and mobile information delivery Group 2: Issues in relation to Plantwise Group 3: CABI's role in facilitating trade and market access
1050 – 1120	Networking Break (Ballroom Greco B)
1120 - 1220	Focusing on invasive species – threats facing the Americas and Caribbean Introduction by CABI – Dr Richard Shaw, Country Director, CABI Europe-UK Presentations from the researchers and policy makers *Dr Peter Mason, Research Scientist, Ottawa Research and Development Centre Agriculture and Agri-Food Canada* *Dr Bernard Laehr, Researcher, Corporación Colombiana de Investigación Agropecuaria (COIPORCA), Ministry of Agriculture, Colombia*
1220– 1300	Breakout Discussions 3: Key Invasives Issues and Questions (2 groups)
1300 – 1400	Buffet Lunch (Anfora Restaurant)
Session 4: Crystallizing Key Issues into Actions and Partnerships for Implementation	
Chairpersons: Mr Ronald Smith-Berkeley, Permanent Secretary, Ministry of Natural Resources and Labour, British Virgin Islands and Mr Naitram (Bob) Ramnanan, Regional Representative, Central America and the Caribbean, CABI	
1400 – 1530	Reporting back on the outcomes of Breakout Discussions 2 and 3, and Discussions on Regional "Priority Areas and Issues For Action"
1530 – 1600	Networking Break (Ballroom Greco B)
1600 – 1645	Discussions on collaboration with international, regional and sub-regional bodies and other partners (e.g. the private sector, south-south co-operations and triangular co-operations)
1645 – 1700	Feedbacks from delegates
1700 – 1720	Closing Remarks and Vote of Thanks Dr Trevor Nicholls, Chief Executive Officer, CABI
1900 – 2100	Cocktails (Aguamarina by the Swimming Pool)

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