

OFFICIAL FEEDBACK FORM

DIALOGUE DATE	Thursday, 27 May 2021 09:30 GMT +08:00
DIALOGUE TITLE	Multi-Stakeholder Dialogue on Innovation and Technology (Precision Agriculture and Precision Breeding)
CONVENED BY	Dr. Mary Ann Sayoc (Philippine Seed Industry Association), Dr. Gabriel Romero (Philippine Seed Industry Association), Edilberto de Luna (CropLife Philippines), Amy Chua (Philippines Partnership for Sustainable Agriculture)
DIALOGUE EVENT PAGE	https://summitdialogues.org/dialogue/20328/
DIALOGUE TYPE	Independent
GEOGRAPHICAL FOCUS	No borders, Philippines

The outcomes from a Food Systems Summit Dialogue will be of use in developing the pathway to sustainable food systems within the locality in which they take place. They will be a valuable contribution to the national pathways and also of interest to the different workstreams preparing for the Summit: the Action Tracks, Scientific Groups and Champions as well as for other Dialogues.

1. PARTICIPATION

TOTAL NUMBER OF PARTICIPANTS

159

PARTICIPATION BY AGE RANGE

0-18

44

19-30

67

31-50

47

51-65

2

66-80

80+

PARTICIPATION BY GENDER

63 Male

95 Female

1 Prefer not to say or Other

NUMBER OF PARTICIPANTS IN EACH SECTOR

83 Agriculture/crops

2 Fish and aquaculture

6 Livestock

2 Agro-forestry

4 Environment and ecology

5 Trade and commerce

10 Education

Communication

6 Food processing

Food retail, markets

2 Food industry

1 Financial Services

Health care

Nutrition

21 National or local government

Utilities

Industrial

17 Other

NUMBER OF PARTICIPANTS FROM EACH STAKEHOLDER GROUP

5 Small/medium enterprise/artisan

2 Large national business

43 Multi-national corporation

2 Small-scale farmer

2 Medium-scale farmer

Large-scale farmer

3 Local Non-Governmental Organization

8 International Non-Governmental Organization

Indigenous People

21 Science and academia

1 Workers and trade union

Member of Parliament

Local authority

59 Government and national institution

Regional economic community

United Nations

International financial institution

2 Private Foundation / Partnership / Alliance

2 Consumer group

5 Other

2. PRINCIPLES OF ENGAGEMENT

HOW DID YOU ORGANIZE THE DIALOGUE SO THAT THE PRINCIPLES WERE INCORPORATED, REINFORCED AND ENHANCED?

We organized the dialogue in collaboration with the government, industry partners, and a multi-stakeholder NGO. We invited participants from both the public and private sectors, academe, farmers' organizations, and civil society. This reflected the multi-stakeholder diversity of the dialogue, with the principle of inclusivity, respect, and complementation adhered to. The choice of the dialogue's theme - Innovation and Technology- was based on the outcome of the National Food Security Summit held one week earlier. One of the key strategic interventions to modernize agriculture was to promote innovation, research and development and technology. With this in mind, we organized two focus group discussions - one in precision agriculture and one in precision breeding. In organizing this dialogue, we also acted with urgency and committed to continue doing so as we organize the follow through sessions.

HOW DID YOUR DIALOGUE REFLECT SPECIFIC ASPECTS OF THE PRINCIPLES?

The principle of embracing multi-stakeholder diversity and inclusivity was reflected in the good mix of participants coming from different sectors - government, business community, academe, farmers' organizations and civil society. The participants recognized the complexity of the food systems and the challenges that need to be addressed i.e. pest and diseases, climate change, digital divide, absence of tropical breeds of dairy animals, etc. The breakout sessions surfaced complementation of work among key players i.e. public-private collaboration in precision breeding, consultations on policies enabling precision agriculture, genome editing, landholdings, and labor concerns.

DO YOU HAVE ADVICE FOR OTHER DIALOGUE CONVENORS ABOUT APPRECIATING THE PRINCIPLES OF ENGAGEMENT?

Yes. It would be helpful if convenors familiarize themselves with the principles of engagement before starting to organize a dialogue. Convenors should reach out to diverse stakeholders across the value chain. The program flow of having an opening plenary with keynote speakers followed by focus group discussions and then a closing plenary works well. Allocate at least 3 hours for the dialogue.

3. METHOD

The outcomes of a Dialogue are influenced by the method that is used.

DID YOU USE THE SAME METHOD AS RECOMMENDED BY THE CONVENORS REFERENCE MANUAL?

Yes

No

4. DIALOGUE FOCUS & OUTCOMES

MAJOR FOCUS

The multi-stakeholder dialogue focused on sharing some innovations such as drones, biotechnology, and genome editing, and their potential positive impact in helping manage food production systems, a solution area under Action Track 3. The Philippines UNFSS Core Group, through the leadership of the National Convenor, also identified thematic areas that the country will focus on in relation to the conduct of sub-national dialogues in the Philippines. One of these thematic areas is the advancement of innovations and science-based farm production systems. This dialogue aimed to contribute to this. Specifically, it identified key challenges faced by the Philippine agriculture industry in mainstreaming precision agriculture and precision breeding. The session was targeted to gather insights and recommendations on how to scale up the promotion and adoption of innovations around precision agriculture and precision breeding, which can eventually support efforts on achieving food security.

ACTION TRACKS

- Action Track 1: Ensure access to safe and nutritious food for all
- Action Track 2: Shift to sustainable consumption patterns
- Action Track 3: Boost nature-positive production
- Action Track 4: Advance equitable livelihoods
- Action Track 5: Build resilience to vulnerabilities, shocks and stress

KEYWORDS

- Finance
- Innovation
- Human rights
- Women & Youth Empowerment
- Policy
- Data & Evidence
- Governance
- Trade-offs
- Environment and Climate

MAIN FINDINGS

I. Precision Agriculture

The breakout session on Precision Agriculture was able to impress its importance in the whole gamut of the food systems, yet there are important points raised that need to be addressed. Precision agriculture needs an active public-private partnership. The workshop clearly showed that there has to be an enabling policy, which may partake of a legal framework and/or mainstreaming precision agriculture in the commodity programs of the Department of Agriculture and the crafting of a roadmap.

As digital agriculture is largely influenced by information technology, the workshop agreed to decentralize technology and infrastructure development. As to the matter of upscaling digital agriculture, the issue of small landholding is a concern. The emerging consensus along this end is to pursue and support the government's farm clustering and consolidation approach. The private sector and companies may take the lead in this initiative.

Other challenges mentioned during the roundtable discussion included the lack of intensive research and development for all crops, lack of accredited facilities to implement technologies specifically in monitoring residue levels, and poor internet connectivity especially in the rural areas. Moreover, the role of the youth in further promoting precision agriculture was also heavily mentioned during the event but there were recommendations on marrying the skills of the young ones and the expertise and knowledge of the more matured farmers.

The role of educational institutions was also emphasized. The workshop agreed that precision agriculture must be included in the curriculum.

ii. Precision Breeding

The other breakout session was on precision breeding. The discussions from that group reported the need to scale up the support and promotion of precision breeding in the Philippines, given that the country has been dependent on imported livestock breeders from temperate regions. It also reported the need to modify crops and animals to adapt to the changes happening in the environment, especially given the impacts of climate change and biosecurity threats.

Some of the recommendations during the session included the 1) increase in funding and investment opportunities to support the uptake of precision agriculture; and 2) maximization of available resources, systems, and partnerships including the existing breeding institutions, the functional biotechnology regulatory system for genome editing and precision agriculture, and the inter-regional collaborations that respond to the high cost of laboratories, genome editing tools, and licensing.

In terms of funding, some shared that the Department of Agriculture-Bureau of Agricultural Research could allocate funds to the National Livestock Program to support the establishment of tropical dairy breeding in the country for water buffalos, cattle, and other livestock animals.

Also, to respond to the challenge of the weak private-public partnership on precision breeding, PPP should be scaled up and the successful or working models highlighting private sector engagements should be explored. Furthermore, the convergence and harmonization of government institutions was recommended to be done to create an impactful response and establish a pool of funds. These can be pursued through the creation of a consortia, which will lead to the identification of milestone targets and strategies. The Philippine Seed Industry Association (PSIA), citing its membership, network and expertise, volunteered to initiate the establishment of the consortium.

ACTION TRACKS

✓	Action Track 1: Ensure access to safe and nutritious food for all
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KEYWORDS

	Finance	✓	Policy
✓	Innovation	✓	Data & Evidence
	Human rights	✓	Governance
✓	Women & Youth Empowerment		Trade-offs
		✓	Environment and Climate

OUTCOMES FOR EACH DISCUSSION TOPIC - 1/2

I. Precision Agriculture

As can be deduced, the following outcomes are to be worked out:

1. Enabling policies on precision agriculture should be put in place. This will involve: a) a policy framework or a program (precision agriculture program, as the way of organic agriculture program; b) mainstreaming of precision agriculture as a strategy of the commodity programs of the DA; c) crafting of a road map.
2. Private sector and government to lead in upscaling precision agriculture. It may involve demonstration areas, most preferably following the farm clustering and consolidation schemes to promote efficiency. In the process, will involve the organization of smallholder farmers.
3. Basic infrastructure needs to be addressed. Water and IT infrastructure requirements. It will require convergence initiatives with other agencies of the government.
4. Regulations decentralized to the regions. In the case of drones, permitting and licensing are done at the National Capital Region.
5. Inventory of firms, entities, and expert groups engaged in precision agriculture. This is needed to determine the current breadth and reach of precision agriculture adoption in the Philippines. This is an important component in road map preparation.

ACTION TRACKS

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|---|--|
| ✓ | Action Track 1: Ensure access to safe and nutritious food for all |
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KEYWORDS

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|---|---------------------------|---|-------------------------|
| | Finance | ✓ | Policy |
| ✓ | Innovation | ✓ | Data & Evidence |
| | Human rights | ✓ | Governance |
| | Women & Youth Empowerment | | Trade-offs |
| | | | Environment and Climate |

OUTCOMES FOR EACH DISCUSSION TOPIC - 2/2

II. Precision Breeding

Precision breeding and genome editing are increasingly becoming a practice in the Philippines, where there is an expressed need to repurpose the crops to adapt to the effects of climate change or to tropicalize livestock animals being imported from temperate countries. The multi-stakeholder dialogue obtained the following recommendations and suggested action points:

1. Public-private partnerships to be strengthened, which can commence through the establishment of a national consortia that could identify specific target areas and funding opportunities in support of mainstreaming precision breeding. The discussions enumerated the value of doing this around the following areas:
 - Investments on laboratories and genome editing tools which are currently very costly in the market
 - Identification of researchable areas
 - Harmonization of the efforts of various government agencies such as the Department of Agriculture and the Department of Science and Technology to complement existing efforts and allocated government funds
 - Exploration of PPP models to determine what worked or that need to be customized according to the target areas and strategies
2. Enabling policies and mechanisms should be in place. The government is currently working on the implementing rules and regulations (IRR) on genome editing that will be subjected to public consultations. This can kick start the process on creating an enabling environment for precision breeding. Further inputs include the following:
 - Creation of responsive regulatory policies on licensing. Currently, licensing is expensive especially for commercial purposes, while it is free for research.
 - Adopting the guidelines set by the National Committee Biosafety of the Philippines on genome editing. The members of NCBP are currently advising the Department of Agriculture on crafting the IRR related to genome editing.
3. Science communication on biotechnology should be mainstreamed. There are negative perceptions of the public on this area, especially on the genetically-modified crops or animals. Some recommendations under this item are the following:
 - Strengthen social media use among the scientific and research community
 - Simplification or translation (laymanize) of technical research or reports of scientists and experts

ACTION TRACKS

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| ✓ | | ✓ | Environment and Climate |

AREAS OF DIVERGENCE

I. Precision Agriculture

The issue of the young generations and aging farmers surfaced during the workshop. Others are of the view that precision farming will entice the young generations to go into farming. Others reacted that precision agriculture must also provide opportunities for aging farmers. The latter contend that technology is not only for the young. Older generations have experience and can contribute. There must be no age divide or differential insofar as precision agriculture is concerned.

II. Precision Breeding

Precision livestock breeding should also be included in the discussion, not just crops. This is to recognize the challenge that the Philippines continues to import livestock animals for 25 years now from temperate countries that are not suitable for the tropical environment of the country. The government should also invest its funds towards establishing an infrastructure for tropical dairy breeding, especially for water buffalos, cattle, and other livestock animals. There are local researchers and experts in the Philippine Carabao Center who are currently tropicalizing the imported animals whose expertise should be maximized.

The purported cheaper genome editing tools may not be true after all. The accessibility of genome editing tools especially CRISPR/Cas system may be easy for research purposes but commercialization of products developed may be restricted and entail exorbitant licensing fees. It was therefore recommended to explore other tools such as TALENS that require simple and affordable licensing terms if any.

The regulation of genome edited crops remains unclear with the government considering some form of assessment (e.g. testing presence of transgenes) while the industry prefers no pre-market evaluation much like what is done with conventional crops. An advisory team has been tasked by the Department of Agriculture to work out a suitable guideline for genome editing.

ACTION TRACKS

<input checked="" type="checkbox"/>	Action Track 1: Ensure access to safe and nutritious food for all
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<input type="checkbox"/>	Women & Youth Empowerment	<input type="checkbox"/>	Trade-offs
<input type="checkbox"/>		<input type="checkbox"/>	Environment and Climate

ATTACHMENTS AND RELEVANT LINKS

RELEVANT LINKS

- **Official event website**
<https://www.ppsa-ph.org/unfssphdialogueoninnovation>
- **Official Programme Agenda**
https://8455bce1-7d54-4626-acb8-42053d4de223.filesusr.com/ugd/70c76a_bbeb1f3f19954490b47caf8036620913.pdf
- **Department of Agriculture Secretary William Dar message**
<https://www.dropbox.com/s/y1qbhm33wf3f32s/Secretary%20William%20%20Dar%20Message.mp4?dl=0>
- **CAMP President Dr. Eufemio Rasco, Jr. message and short lecture on food systems**
<https://www.dropbox.com/s/4s2709k68gmd7m/Dr%20Eufemio%20T%20Rasco%20Brief%20Lecture%20on%20Food%20Systems.mp4?dl=0>