

Use of Participatory Extension Approach to Establish WAAPP-BUK Value Chain Innovation Platforms (VCIPs) for Sustainable Agriculture in Nigeria

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Abstract: Participatory Extension Approach is based on an equal partnership between farmers, researchers and extension agents who can all learn from each other and contribute their knowledge and skills. It aims at strengthening rural people's problem-solving, planning and management abilities. Value Chain Innovation Platforms (VCIPs) offer a practical way to deal with the complex issues and multiple stakeholders involved in value chains. West African Agricultural Productivity Program (WAAPP) is a World Bank project aims at helping to provide enabling conditions for technology generation and dissemination. Currently across Africa, IPs are orchestrated by donors or technical assistance partners. This is part of WAAPP's objective in promoting VCIPs in Bayero University, Kano (BUK) - Nigeria. In constituting the IP membership, WAAPP-BUK organised a workshop for all the stakeholders involved in the following WAAPP priority commodities (Maize, Sorghum, Poultry and Aquaculture). A purposive selection of 291 various stakeholders from the WAAPP-BUK adopted communities, adopted schools and other stakeholders that are involved in priority commodities disseminated in the WAAPP intervention areas. To establish an articulated value chain innovation platform, using participatory extension approach, active participation of various stakeholders is instrumental with particular interest to defining the roles of each stakeholder in enhancing technology dissemination process. In the event of changing roles, adaptation of various stakeholders in meeting the challenges would particularly be helpful in sustainable agricultural innovation platforms.

Key words: participatory, approach, value-chain, innovation, platforms.

Introduction

Nigeria agricultural development objectives as outlined in the vision 20:2020 Economic Transformation Blueprint of the current administration as well as the Agricultural Transformation Agenda (ATA) are consistent with NEPAD's vision for agriculture in Africa as outlined in the CAADP (WAAP-NIGERIA Report, 2013).

In 2005, the World Bank designed the African Action Plan (AAP) as the centrepiece of its strategy to help Africa and its sub- regional groups such as the Economic Community of West African State (ECOWAS) to reach the Millennium Development Goals (MDG) of reducing the number of hungry people by 50% by 2015. The AAP emphasizes three focal areas – one of which is strengthening the drivers of economic growth. ECOWAS, in response to the AAP, then formulate the West African Agricultural Productivity Program (WAAPP) as an implementing instrument for achieving two principal objectives of the focal areas, which are to make agriculture more productive and sustainable, and support sub-regional integration (CORAF/WECARD Report, 2012).

WAAPP–Nigeria became effective on 12th January, 2012 after approval by the World Bank. WAAPP is a project for all West African Nations of which thirteen of the fifteen countries are currently participating in the programme. The objectives of WAAPP is to increase agricultural productivity while promoting regional integration. The development objective of the project is to strengthen the National Agricultural Research System (NARS) in Nigeria to contribute to technology development, dissemination and adoption, in order to boost

agricultural productivity, increase in Nigeria's top commodity sub-sector that are aligned with sub-regional priorities.

(WAAP-NIGERIA Report, 2013), identified *the following key performance indicators*:

- Percentage increase in productivity at farmers' level of released aquaculture technologies (one out of the three technologies released in aquaculture is expected to increase productivity by at least 30% over the current technology)
- Percentage increase in yield/productivity of released technologies of at least one of the other top priority commodities (one out of the technologies released for the other priority commodities expected to increase yield/productivity by 30% over the current technology).
- WAAPP-Nigeria has, so far, sponsored the formation of Value Chain Innovation Platforms (VCIPs) in 7 priority commodity sub-sectors, namely, Cassava, Maize, Mango, Rice, Sorghum, and Yam. The WAAPP-assisted VCIPs are being provided sustained technical assistance by a Technical Support Team (TST) appointed by WAAPP earlier in 2014. Each of the TST members is assigned to cover a number of states, where they will visit frequently and facilitate the formation of organizational and management structures, as well as organize the training of the VCIP members on various topics related to the economic activities of the respective value chains (WAAP-NIGERIA Report, 2013).

As from 1st October 2014, WAAPP-assisted VCIPs are already operating in 23 states and the Federal Capital Territory, with more than 160,000 direct beneficiaries.

Literature Review

Overview of value chain innovation platforms

The new paradigm in agricultural innovation is based on the premise that failure to utilise useful agricultural information and knowledge, and adopt technologies is not due to ignorance of the farmers, but mainly due to inadequate participation in all stages of the process by those intended to benefit. In this new paradigm, farmers analyse, choose, experiment and evaluate, while outsiders convene, catalyse, advise, search, supply and provide support and consultancy. Community inclusion is particularly useful in providing opportunities for linking research-led and community-led projects (Hounkonnou, et al. 2012).

Makini et al. (2013) argued that value chain innovation platforms offer a practical way to deal with the complex issues and multiple stakeholders involved in value chains. They bring together a range of stakeholders: farmers, traders, processors, input suppliers, credit suppliers, market information providers, insurance services, policymakers, extensionists and researchers. Together, these stakeholders design solutions to problems along the value chain.

According to World Bank (2011), an innovation platform is described as a forum established to foster interaction among a group of relevant stakeholders around a shared interest. The stakeholders perform different but complementary roles in the development, dissemination and adoption of knowledge for socio-economic benefit. This could be in the form of new ideas, methodologies, procedures, concepts or technologies used or adapted from other locations. Reference is basically the value chain but other actors playing critical roles in the innovation process can be included. Innovation Platforms seek to harness innovations related to technology processes, institutional and social-organizational arrangements. The report of the World Bank (2011) emphasised that to promote these innovations, partnerships along and beyond agricultural value chains must be fostered to bring on board actors with special mix of skills. These skills are complemented with functional expertise since the new ways of working require a mix of scientific, technical, managerial and entrepreneurial skills.

Innovation Platforms are applicable to all aspects of agriculture and for a wide range of technologies from simple to complex/integrated and composite. Platforms present

opportunities to increase the yield in farmers' fields through increased access to information, inputs, agricultural lending, and capacity building. With increased market linkages, farmers' incomes increase, and contribute towards reduced poverty. Innovation Platforms have to strategically engage researchers for continual contribution to the development of technologies, new products, increased productivity, natural resource management, policy, markets development and gender.

Types of innovation platforms

- Farmer-based. This type of platform helps farmers market their produce. It invites members from further along the value chain, such as buyers and processors, along with service providers such as financial organizations. It may deliberately avoid certain groups or individuals—such as traders who the farmers think exploit them. A goal of such a platform may be to enable the farmers to sell directly to larger urban buyers. Such platforms may facilitate negotiations on behalf of the farmers, arrange deals and coordinate production and trading.
- Value-chain-based. This type of platform focuses on the value chain as a whole. It may be established by a research or development organization, or perhaps by a leading actor in the value chain, such as a processor or supermarket chain. It aims to identify and overcome bottle-necks in the chain and find ways to make the chain more efficient.

Benefits from value chain innovation platforms

- Farmers can benefit from such platforms by learning about market demand and requirements, changing what they produce and how they produce it. They can organize into groups to bulk their produce and negotiate better prices. They learn marketing skills and the importance of trust and long-term trading relationships. They may get services such as credit and improved production technologies via the platform. Production systems become more profitable.
- Traders and processors can benefit by getting a larger, more reliable, better quality supply of inputs. They may welcome farmers getting organized as this reduces their transaction costs.
- Service providers such as input suppliers, credit organizations and business services gain clients for their products and services.
- Research and development organizations may use innovation platforms to engage market actors and to study and improve market and value chains.

Agricultural value chain innovation platform

A crop value chain innovation platform is a network of all economic and institutional actors who have vested interest in the crop sector; also called Stakeholders. Irrespective of category, most agricultural IPs are characterized by:

- Informality
- Transitory organizational structure, objectives, focus, relationships, and modes of operation
- Some IPs crystallize into formal organizations
- Essentially, an agricultural Innovation Platforms should be context-specific in all of its aspects. Cookie-cutter approach should be avoided
- Innovation platform is the hallmark of IAR4D
- Membership can be open to both individual persons and groups or corporate entities (e.g. Cooperatives, MSMEs and big corporations)
- IPs have proved to be effective innovation brokers

- Currently across Africa, IPs are orchestrated by donors or technical assistance partners. This calls for such IPs to be brokered and nurtured to a point where they can stand and begin to fulfil their mission as brokers of innovation.

Formation of innovation platforms

Innovation platforms can be formed at three levels – operational (local), intermediary and national levels. They may deal with different sectors such as dairy, food crops, horticulture, and natural resources among others and may have different objectives. All however deal with common problems found in a specific sector or sub-sector for which solutions depend on more than one actor. Stakeholders may have different interests yet share a common objective and depend on one another in responding to the challenges and opportunities encountered.

At the local level (district, community), platforms often look for practical solutions to a local problem or opportunity, by linking local actors (e.g. farmers) to markets and other stakeholders. Higher level platforms which may be at provincial or national level target policy change. They inform policy makers who in turn formulate policy that will have an influence on local level activities. A platform innovation broker (champion) is responsible for connecting the local and higher levels and for providing guidance for a period before leaving these roles to the local stakeholders (Makini et al., 2013).

Formation of innovation platforms falls into three broad phases:

- i) Engaging with stakeholders (this includes initiation and visioning),
- ii) Planning, learning and assessing (includes establishment and management)
- iii) Ensuring sustainability (includes management and sustainability measures).

At each of these phases of the innovation process, the role of the participants is likely to change from interest to active collaboration and finally ownership and leadership. The role of research and development organizations changes from initial leadership to facilitation of the process and finally to providing backstopping when and as required, the role of the private sector changes from interest to one of active collaboration and finally farmer support and commercial opportunity.

Process for the formation of innovation platforms

Makini et al (2013) discussed the following processes for the formation of innovation platforms;

- Delimitation of Innovation Platform (Initiation)
- Establishment (Stakeholder mapping, scoping study and visioning)
- Developing Action Plans and Implementation
- Sustainability, Scaling-up and Participatory Monitoring and Evaluation.

Delimitation of innovation platform (initiation)

To initiate an innovation platform, it is important to get a general understanding of the challenges constraining the productivity and profitability of a region. Information may be obtained from literature review, secondary data, key informant interviews, focus group discussions, case studies, market chain analysis and other methods. The topographic areas (site) to intervene in may be identified with local resource persons. Alternatively, priority commodities could be identified in advance, thus guiding the choice for a geographic location based on the agro-ecological and economic potential of that commodity. This is done by the initiator/ broker/leader.

Establishment (stakeholder mapping, scoping study and visioning)

This stage entails a situation analysis to capture current knowledge, attitudes and practices of stakeholders. Key stakeholders are identified and roles clearly defined. Farmers, input suppliers, output handlers, financial institutions, extension agents, research institutions and policy makers and other actors may also be identified. These various stakeholders are involved in a visioning process that involves reflecting on where they currently are and where they would want to see themselves in a period of five or ten years' time. The visioning process may be researcher or market led. The researcher led process involves sensitization of stakeholders about the agricultural problems to discuss the potential role they can play in resolving them. Stakeholder-mapping, selection and identification of action entry-points are done and the needs, challenges and opportunities of specific platform topics are defined. Initial orientation and boundaries of the platform-to-be are also set.

The market led process can still be approached by researchers identifying a good market for a commodity and initiating an IP along the same pathway as above. Researchers should also be able to listen to suggestions and requests for participation if an IP is started by market players or farmers associations.

Developing action plans and implementation

At this stage narrowing down of the main points raised from the joint analysis and defining of a clear strategy for action is done. It is essential for platform participants to understand the mandate and tasks of the organization providing the main facilitation services. Similarly, roles and responsibilities of stakeholders and facilitator(s) at action sites such as governance, M&E, capacity building are defined.

Sustainability, scaling-up and participatory monitoring and evaluation

For innovation platforms to avoid pitfalls of previous approaches there is need to map out sustainability and scaling out strategies upfront. The success of an IP scaling out process depends on the effectiveness of the Participatory monitoring and evaluation (PM&E) framework established by the stakeholders. PM&E helps to ensure that milestones of the programme are met and also assesses whether the delivery process and management are on course and that necessary changes are made. Joint identification of success indicators is a prerequisite for a sound PM&E framework.

Establishing WAAPP – BUK Value Chain Innovation Platforms.

In constituting the IP membership, WAAPP-BUK organised a workshop on the 7th June, 2016, at Faculty of Agriculture, Bayero University, Kano - Nigeria, for all the stakeholders involved in the following WAAPP priority commodities (Maize, Sorghum, Poultry and Aquaculture) and considered obstacles that could likely hinder the accomplishment of the objectives.

Methodological Perspective

Survey sites

This survey was conducted in Kano State of Nigeria, West Africa. Kano State is located in the North Western part of Nigeria on latitude 11⁰ to 34⁰ N and longitude 8⁰ to 34⁰ E, and 472.45 meters above sea level. It has a total land of 20,760 square kilometres and is predominantly inhabited by Hausa and Fulani ethnic groups. Kano is the second largest industrial and commercial center in Nigeria after Lagos. According to [NPC \(2006\)](#) it then had a population of 9,383,682, with 4,844,128 males and 4,539,554 females. The ecology is

typically that of Sudan Savannah vegetation, with average annual rainfall of 700mm, while the amount and frequency in distribution vary across the state. There is significant variation in temperatures in the state, with minimum of as low as 15⁰c and maximum of 35⁰c, in March/April and December/January respectively (Kasali, 2011).

Sampling procedure and sample size

The sampling procedure for the survey was multistage in which the first stage involved a purposive selection of the study sites (Four secondary schools) considered as adopted schools in the WAAPP intervention and eleven (11) adopted villages. The second stage also involved a purposive selection of agricultural science/animal husbandry/fisheries based students and household members that are beneficiaries of the WAAPP-BUK intervention with particular interest to gender mainstream in the study sites.

Ten (10) households from each of the eleven (11) adopted villages were purposively selected. In addition to these participants, 20 agriculture-based students and 4 of their teachers from the four (4) scaled-up adopted secondary schools (two boys and two girls) were also invited for the workshop. Other participants were representatives from; state ADP (KNARDA) (15), Sovet International (Poultry feeds and management) (7), Premier Seeds (5), All Farmers Association of Nigeria (AFAN) (25), Dawanau Grain Marketers Association (11), Agro-dealers (6), Women Farmers' Advancement Network (WOFAN) (12) and Murtala Suya Spot (4). The basis for the selection of the participants was their involvement in any of the WAAPP-BUK priority commodities.

Data collection procedures

Some of the structured questions raised during the workshop include those on the benefits derived from the WAAPP-BUK from 2013 through 2016. Questions on the socio economic status of the participants, agricultural and related activities involved in relation to these priority commodities, nature of acquisition and values of their skills were asked during the survey. In addition to the questions on knowledge about the WAAPP-BUK technologies, trainings received on the use of various technologies and challenges on managing VCIPs on WAAPP-BUK interventions were also assessed.

Results and Discussion

WAAPP-BUK Priority Commodities Distributed to Farmers;

Cereals;

- Maize (EVDT-1999) – 5Kg for each farmer.
- Sorghum (CSR -01 and Samsorgh-40) – 2Kg for each farmer.

Legumes;

- Cowpea (IT99K-573-1-1) – 2Kg for each farmer.
- Groundnut (Samnut- 22 and 23) – 2Kg for each farmer.
- Soybean (TGX – 1835) – 5Kg for each farmer.

Aquaculture;

Two (2) polythene tanks were taken to each of the following adopted schools: Girls Senior Secondary School, Kabo, Musa Iliasu College, Science Girls Secondary School, Garko and Senior Secondary School, Wudil, in addition to the Faculty of Agriculture, Bayero University, Kano (Faculty Farm), making a total of ten (10) polythene tanks. One (1) of the tanks was stocked with 300 super jumbo size of Dutch Clarias for fish farming. The other

tank was filled up with water for sorting fishes of larger size. This ensured feed and space utilisation. A bag of fish feed was given to each school as start-up for feeding the fishes.

Cockerels

Three cockerels were distributed to each participating woman in four (4) WAAPP-BUK adopted villages, which was presumed to serve at least 8 local chickens, with aim of improving semi-intensive poultry production in these communities. Thus, 80 cockerels were distributed with start-up feeds, anti-stress, vaccines, antibiotics and feeders. Other twenty cockerels were also distributed to three (3) WAAPP-BUK adopted secondary schools. This would enable the students of these schools to have practical skills in poultry production.

The importance of maize as staple food crop in Nigeria, in addition to its value chain innovation platforms were highlighted. Maize value chain actors and functions were indicated in the value chain;

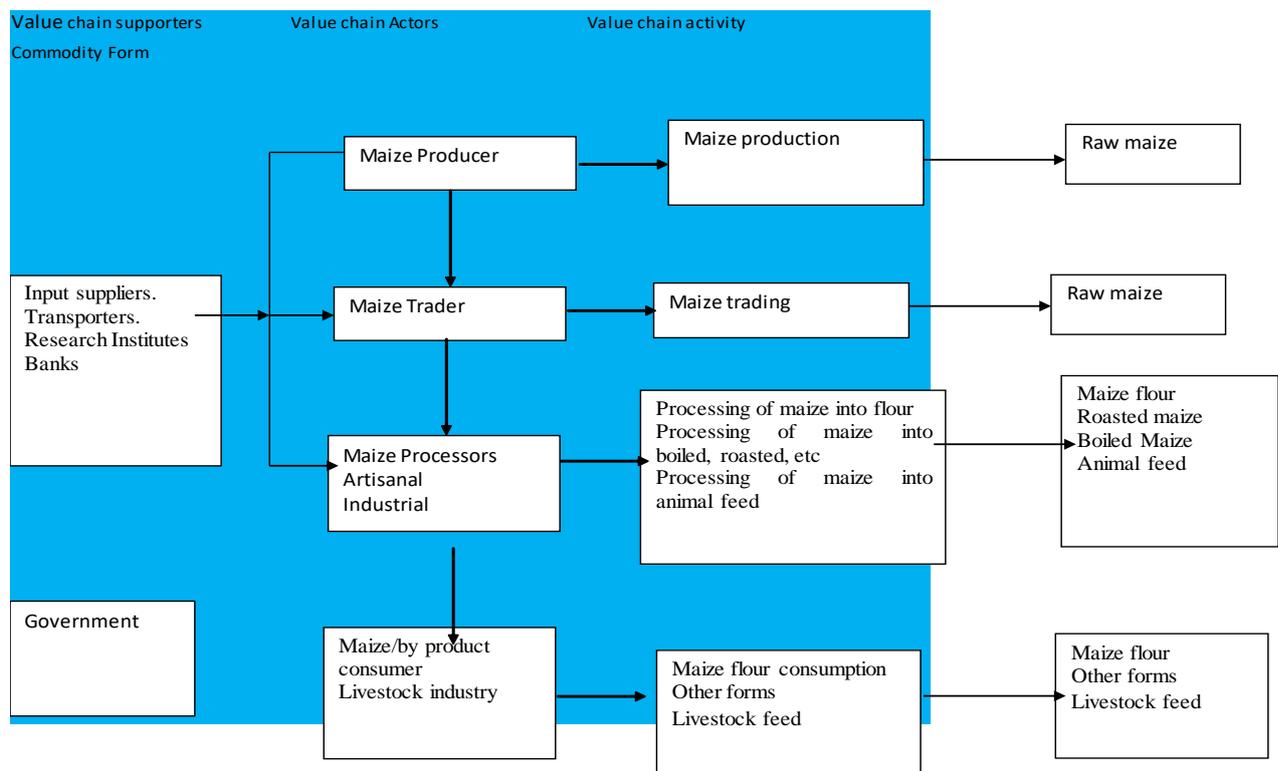


Figure I: WAAPP-BUK Maize Value Chain Innovation Platforms.

Potentials for WAAPP-BUK Maize Value Chain

- ▶ One major potential is in production which can be increased through increasing the hectareage.
- ▶ Improving the supply system for inputs.
- ▶ Improving the technical skills of the farmers especially with regards to best agronomic practices
- ▶ This will improve both the efficiency of production and the quality of the outputs (aflatoxin issues).
- ▶ Major impact can be made along the maize value chain through the promotion of processing.
- ▶ A substantial portion of the maize produced is taken to other States, particularly Lagos, Enugu and Onitsha for processing into animal feeds and other products
- ▶ Establishment of maize aggregation centres in at-least three locations in a state. Based on existing production potentials and proximity to up-takers

- ▶ Capacity building and formation of producer, processor and marketing cooperatives will help in developing the maize VC

Poultry innovation platforms

As one of the priority commodity, the participants were also trained on how a value chain innovation platforms are formed for poultry production.

The resource person explained what innovation platforms is, which was then linked up to value chains. Benefits to be derived in upgrading of local chickens in the three WAAPP-BUK communities were stated and discussed, thus;

- Solve problems in chicks supply capacity
- Enhance local capacity to supply veterinary services and feeds
- Enhance business development services
- Develop reliable markers and business skills

The needs for poultry innovation platforms;

- There is a need for the system transition to market oriented production.
- This requires the involvement of a large number of actors across the whole chicken value chain in the country.
- The VCIP program brings these stakeholders together through the innovation platforms.

Objectives of the WAAPP-BUK Poultry Innovation Platforms;

- To improve chicken genetics and the delivery of adapted chickens to support poverty reduction,
- To improve productivity,
- To increase household animal protein intake,
- To empower women farmers in rural communities.
- It also aimed at contributing to the improvement of living conditions of WAAPP adopted villages and schools through achieving the goals.

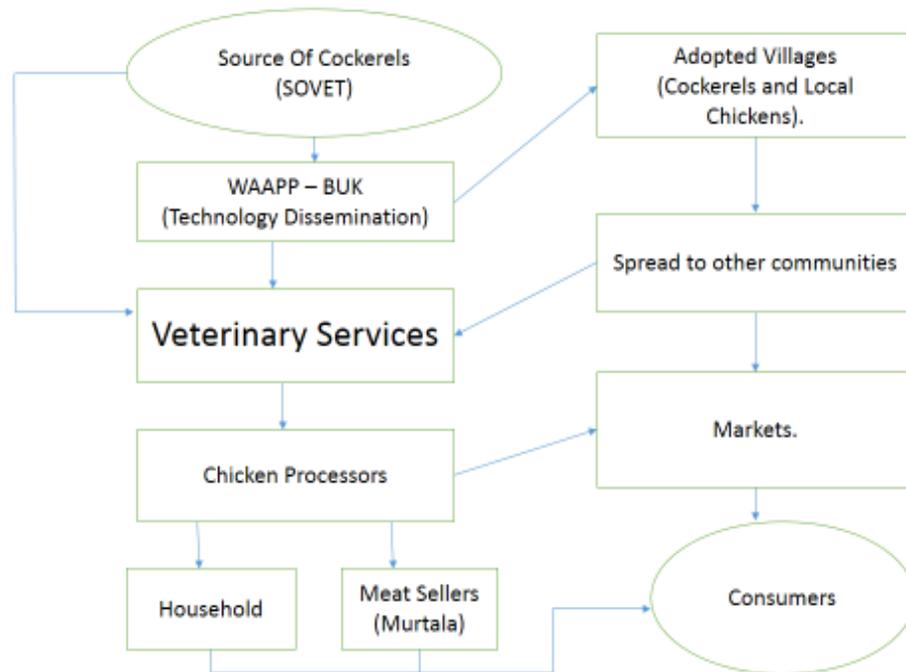


Figure II: WAAPP-BUK Poultry Value Chain Innovation Platforms.

Challenges in Managing Innovation Platforms

Managing an IP is not meant to ensure similarity of interests among actors, but rather to guide diverse objectives into a common vision, uphold transparency, gender and policy issues.

Main challenges in managing WAAPP-BUK VCIPs:

- ✓ The overall challenge in managing an IP is to ensure a progressive process with sustainable reciprocal benefits.
- ✓ Attendance and commitment of platform members is a major challenge.
- ✓ Existence of platform long after the stipulated WAAPP-BUK project ('project' period) largely depends on the ownership entrenched in actors in the early stages.
- ✓ An IP cannot function while actor objectives are competing. For instance, a stockist aiming to make profit may not share an IP with an NGO that is promoting free inputs.
- ✓ Learning and feedback among relevant actors do not spontaneously happen.
- ✓ Documentation on the functioning and dynamics of the IP entails a clear strategy.
- ✓ Transparency stems largely from openness.
- ✓ Leadership in IPs should not be position-based, but rather task-oriented. This will therefore change depending on the need/expertise required. There could well be several levels of leadership complementing each other.
- ✓ Finances need to be controlled skilfully.

Concluding Observations:

To establish an articulated value chain innovation platform for the WAAPP-BUK priority commodities, active participation of various stakeholders is instrumental, with particular interest to defining the roles of each stakeholder in enhancing technology dissemination

process. In the event of changing roles, adaptation of various stakeholders in meeting the challenges would particularly be helpful in sustainable agricultural innovation platforms.

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