

Report of PARI side event

Scaling up Technological Innovation in Africa: The State of Affairs

Date: 14th June 2016, Kigali, Rwanda

Time: 14:30 – 18:00

Venue: MrBbo 001, Camp Kigali, Rwanda

Convenors: FARA / ZEF/ 12 PARI countries

Facilitator: Prof. Olaleye Tayo

Rapporteur: Dr. Ir. Kouévi Augustin



Program of Accompanying Research for Agricultural Innovation
www.research4agrinnovation.org





Table of Contents

| Table of Contents | 2 |
|--|----|
| Context | 3 |
| Objectives | 4 |
| Specific objectives | 4 |
| Setting the Scene | 4 |
| Participants | 5 |
| Programme of the side event | 5 |
| Summaries of presentations and discussions | 8 |
| Presentation from Togo | 10 |
| Presentation from Malawi | 12 |
| Innovation Platforms in Zambia | |
| Burkina Faso | 14 |
| Innovation Platforms in Nigeria | 14 |
| Main questions and issues raised | 20 |
| Answers to main issues and questions | 20 |
| Answers to main issues and questions | 21 |
| Conclusion and recommendations | 21 |
| Limitations | 22 |
| Appendices | 24 |
| Appendix II: List of participants | 24 |

1. Context

The spate of innovation in African agriculture is still low compared to the investments in research and development activities on the continent. This reality is not far-fetched from the truth that a handful of investments are not appropriate or well-targeted. A number of initiatives have failed to yield the required outcomes because thorough analysis and research outcomes were not either considered or not available when the initiatives were designed. To the forestall continuous occurrence of failed interventions, the **Program of Accompanying Research for Agricultural Innovation in Africa** (PARI) was initiated as part of the German Government supported "One World –No Hunger" (SEWOH) initiative, to conduct research activities to support innovation. PARI is a partnership initiative and aims to secure and enhance investments in the Agricultural Innovation Centres (AICs) in a sustainable manner through dedicated cooperation between research and application. PARI essentially conducts necessary research studies to release information, generate knowledge and technologies that could inform the appropriate process to trigger innovations in African countries.

The PARI project takes into account the experiences and successes of the agricultural innovation systems approach in Africa, particularly, the Integrated Agricultural Research for Development (IAR4D) using Innovation Platforms as a means to facilitate interactions and learning among stakeholders.

The PARI project is currently implemented in 12 African countries in strong partnership with the lead National Agricultural Research Institution (NARI), the Forum for Agricultural Research in Africa (FARA) and the AGRODEP group of the International Food Policy Research Institute (IFPRI). The partnership also embraces thematic research contributions from three Germany Universities viz: Centre for Development Studies (ZEF), University of Bonn; University of Hohenheim and Technical University of Munich (TUM).

The background activities of PARI began in 2014 to essentially develop the partnership framework and in 2015 to start initial studies. The 12 African countries have made substantial progress with three baseline studies that have provided vital information on the state of agricultural innovation in the countries. The lessons from these studies will serve as an important resource to inform intervention for agricultural innovation. In the same direction, the linkage of the 12 countries with the AGRODEP group needs to be firmly established to validate the different models and come up with appropriate recommendations.

Thus, the PARI partners organized a side event at the 7th Africa Agricultural Science Week and The FARA General Assembly scheduled for 13-16th June 2016, in Kigali, Rwanda.

2. Objectives

The central objective of this side was to advance the different activity components of the PARI project and to ensure coherence, complementarity and effective contribution to the overarching goal of the program.

Specific objectives

- Bring PARI partners to highlight the main findings of the agricultural innovation baseline studies in the countries in 2015 and the implications of the findings for agricultural innovation policies.
- Bring AGRODEP representatives to highlight the data requirements for the modeling of innovation systems and discuss the alignment of PARI's research data with the data requirements.

Session 2.0 Setting the Scene

Following the opening session, the workshop facilitator took a few minutes to present an annotated highlight on the mode of the presentation on the first day. He touched on the following issues during this scene setting period.

- i) *Self-Introduction*: A brief self-introduction of participants who were requested to indicate: their name, institutional affiliation, area of interest, specialization or expertise was done.
- ii) Working definitions of issues of relevance to the workshop to ensure that discussions and interactions will be based on common understanding. Two of such issues are presented below.
 - Innovation: A multi-stakeholder, multi sectorial process that is usually context specific and often involves changing relationships between the stakeholders.
 - Agricultural Innovation: a multi-stakeholder, multi-sectorial process which when guided by Innovation Platforms parameters addresses constraints related to farm productivity, post-harvest value addition, institutional learning and change.

The presentation schedule is detailed in Appendix 2. Due to time constraint, each presenter was allocated ten (10) minutes each for presentation. After each of the blocks of presentation, there was a discussion of 20 minutes. The presentation followed the order shown below:

- **BLOCK -1** Situation analysis of agricultural innovations by countries represented
- Discussions
- BLOCK-2 Overview of agricultural Innovation Platforms- by countries represented
- Discussion
- Coffee Break
- BLOCK-3 State of investment in agricultural Innovation -by countries represented
- Discussion
- **BLOCK -4** Presentation from AGODEP...e-Atlas

- **BLOCK-5** Presentation on "Farmers' Innovation contest"
- Discussions and closing

3. Participants

In all, six (6) females, and forty two (42) males participated in this side event. (See list of participants in Appendix II).

4. Programme of the side event

- Opening remarks by Dr. Yemi Akinbamijo (ED, FARA), and Dr. Detlef Virchow (ZEF, Germany).
- Presentations and discussions
 - Dr. Stefan Schmitz (Head of Directorate Food, Agriculture and Rural Development BMZ, Germany): Key note Presentation. The Green Innovation Centers: Scaling up innovations and disseminating knowledge in rural areas
 - o Dr. Geoffrey Kamau (KALRO, Kenya): Situation analysis of agricultural innovations in Kenya
 - o Mr. Todje ALPHA (Togo): Situation analysis of agricultural innovations in Togo
 - Mr. William KASAPILA (Malawi): Situation analysis of agricultural innovations in Malawi
 - o Dr. Richard AMPADU-AMEYAW (Ghana): Overview of agricultural Innovation Platforms in Ghana
 - o Mr. Christian CHOMBA (Zambia): Overview of agricultural Innovation Platforms in Zambia
 - o Dr. Justin OKOLLE (Cameroon): Overview of agricultural Innovation Platforms in Cameroon
 - o Prof. Philip DAYO (Nigeria): State of Investment in Agricultural Innovations in Nigeria
 - o Dr. Alpha Oumar KERGNA (Mali): State of Investment in Agricultural Innovations in Mali
 - o Dr. B. Patrice ADEGBOLA (Benin): State of Investment in Agricultural Innovations in Benin
 - o Dr. Abd Salam EL VILALY (AGRODEP team, IFPRI, Senegal): An Advanced Data Exploration System to Enhance Country Data and Knowledge Management
 - o Dr. Justice TAMBO (ZEF, Germany): Farmers Innovation contest.

Opening speech by the Executive Director, Forum for Agricultural Research in Africa (FARA)

- 1. Welcome participants from.....
 - a. From Germany: BMZ, ZEF, University of Munich and GIZ
 - b. Partners from 12 African countries: Nigeria, Ghana, Togo, Benin, Burkina Faso, Mali, Kenya, Ethiopia, Malawi, Zambia and Tunisia.
 - c. IFPRI from the AGRODEP
 - d. Enthusiast on the subject of agricultural innovation
- 2. FARA is grateful to the government and the people of Germany for commencing the "One World No Hunger" initiative with the aim of eradicating hunger and malnutrition in our world. This is one huge challenge, and it requires concerted efforts from all.
- 3. The framework for implementing the SEWOH program with a mindset of research for development is noteworthy; it is the right pathway to achieve sustainable impact from our endeavors.
- 4. The enactment of the Program of Accompanying Research for Agricultural Innovation (PARI) is a research program that will propel and support the development activities within the GIZ led Agricultural Innovation Centers or Green Innovation Centers, which is also laudable.
- 5. FARA is glad to facilitate the implementation of PARI activities in the countries with our national constituents that are also enthusiastic about the initiative.
- 6. The current progress of PARI since its partnership formation in 2014, to its launch early in 2015 and the different countries studied are impressive. It clearly shows that working together, pulling together and delivering together is the way to eradicate hunger through science in our world.
- 7. The ideals of PARI align perfectly well with the various continental frameworks; sustaining CAADP momentum, the SITSA and the S3A. Further, I also know that the different countries are aligning the ideals of PARI with the National Agricultural/Food Security Investment Plans (NAFSIPS).
- 8. I want to underscore the importance of pulling up data from PARI endeavors, particularly from the baseline analysis conducted on the three cross cutting studies in 2015. Information from this shows that the different countries are rich in knowledge and

technologies generated over the years, but these need to be upgraded to achieve greater benefits for the well-being of our people. More importantly, our studies need to inform the direction of interventions and investments to achieve greater benefits for the well-being of the African people. More importantly, our studies now need to inform the direction of interventions and investments to achieve innovations that are scaled beyond pilot to achieve broad socio-economic benefits.

- 9. Dear partners, the expectations for development outcomes and impact from the PARI projects are high and we will need to improve upon this.
- 10. As we deliberate on the progress on the 2015 outputs and other issues in this event, I wish you all fruitful deliberations.

Key points from the presentation of the Director General of ZEF, Prof. Von Braun (Presented by Dr. Detlef Virchow, Ph.D.)

- The Executive Director of FARA, Dr. Yemi Akinbamijo, The Head of Directorate Food Agriculture and Rural Development (BMZ), Dr. Stefan Schmit and colleagues from African Agricultural Scientists and all protocols observed.
- 2. On behalf of Prof. Braun, the DG of ZEF, I welcome you all to this side event.
- 3. The objectives of PARI are:
 - a. to feed Africa through African Agriculture
 - b. to produce sufficient food for Africa and have excess to export and create employment
- 4. Science and technology are twin brothers needed for innovation, but are not enough
- 5. Besides science leading to technological development and innovation, science is needed to develop innovations.
- 6. Thus, besides the new varieties that have been developed, there is the need for new organizational arrangements like efficient (rice) irrigation schemes, financing schemes

- and vocational training. In addition, there is the need for technology and innovations developed to be driven by farmers and other actors (i.e. the value chains)
- 7. There is also the need to stimulate and identify innovations, rather than from top-down approaches, to rather bottom-up approaches for the scaling-out of these innovations.
- 8. There is the need for investments from banks, national governments and international partners.
- 9. These are some of the issues that PARI is set to tackle, so, let us talk innovations.
- 10. Thank you!

5. Summaries of presentations and discussions

5.1. Key points from the opening remarks

- FARA values, very much, the Program of Accompanying Research for Agricultural Innovation (PARI), and places high expectations on its contributions to agricultural innovations and reduction of hunger in Africa.
- Both technological, organizational, and institutional innovations are needed for better agricultural productions and for reducing hunger.

5.2. Key points of presentations

- PARI as part of "One World No hunger" initiative of BMZ-Germany: Innovation emanating from and/or supported by all stakeholders, and improved total factor productivity are keys for increasing agricultural production and reduction of hunger. Dr. Stefan Schmitz stated that the crucial questions to answer are:
 - o How to enhance productivity?
 - o How to enhance food and nutrition security?
 - Which will be the most beneficial investment in innovations for agri-food system growth?
 - What kind of innovations would that be?
- He stated that the key challenge of the sub-Saharan Africa (SSA) when compared to the global trend between 1981-1990 as well as between 2001 -2009 was the low total factor productivity (TFP) (Fig 1). There is the need to increase the TFP of agriculture in the SSA.

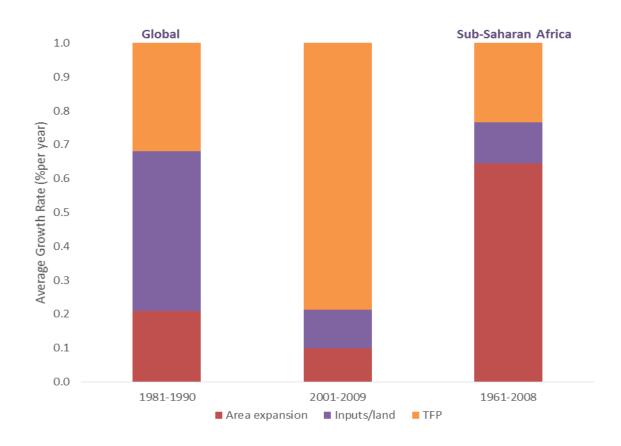


Fig 1: Key challenge of African Agriculture compared to global Agriculture (Source: Fuglie, K. et al. (2013¹)

¹Fuglie, K., & Rada, N. (2013). Resources, Policies, and Agricultural Productivity in Sub-Saharan Africa. *USDA-ERS Economic Research Report*, (145).

Fuglie, K. (n.d): Productivity Growth and Technology Capital in the Global Agricultural Economy

- Presentation from Togo
- The main promoters of innovation in Togo are detailed in Table 1 and the number of innovations in terms of groups, crops and numbers are detailed in Table 2 as presented by Dr. Todjé ALPHA.

Table 1: Promoteurs Impliqués dans les innovations au Togo

| Groupes d'innovations | Auteur/obtenteur | Principaux promoteurs | Principaux bénéficiaires |
|---|--|---|---|
| Variétés | CIMMYT, IITA, AfricaRice, ITRA, IRRI, IRHO, IER, ISRA, CRI, IRAT, ITRA | ITRA, ICAT, IFDC, ONGs, Autres SNRs, | Producteurs, transformateurs, consommateurs |
| Races | Sahel (Niger), CIRAD | ITRA, ICAT, ONGs | Eleveurs, Transformateurs, Consommateurs |
| Techniques culturales | ITRA, IITA, IFDC | ITRA, ICAT, IITA, IFDC, ONGs | Producteurs |
| Pratiques de gestion des sols ou de l'eau | IFDC, CIRAD | ITRA, ICAT, ONGs | Producteurs |
| Agroalimentaire | ITRA | ITRA, ONGs | Producteurs, transformateurs Consommateurs |
| Protection des récoltes | IITA | ITRA, ICAT, ONGs | Producteurs, commerçants consommateurs |

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Table 2: Group and number of innovations

| Group of Innovations | Speculations | Number of Innovations |
|--|--|-----------------------|
| Cereals | Mais | 6 |
| | Riz | 5 |
| | Sorgho | 3 |
| Tubercules et Plantes à racines et autres amylacés | Manioc | 6 |
| | Igname | 3 |
| Légumineuses à graines | Arachide | 2 |
| | Niebe | 2 |
| | Soja | 2 |
| Culture de rentes | Café | 3 |
| | Cacao | 3 |
| | Coton | 2 |
| Cultures Maraîchères | Tomate | 2 |
| Cultures War archeres | Piment | 3 |
| | Gombo | 2 |
| Protection des récoltes | Principales cultures | 2 |
| Espèces animales | Ovin | 1 |
| • | Caprin | 1 |
| | Bovin | 3 |
| | Porcin | 2 |
| | Volailles (Poules) | 1 |
| Système d'élevage des petits ruminants | Ovin/Caprin | 2 |
| Techniques culturales | Principales cultures | 17 |
| Pratique de gestion du sol ou de l'eau | | 9 |
| Agro-alimentaire | Maïs, Manioc, Igname, lait, Néré | 8 |
| Transfert de technologies | Principales cultures et espèces animales | 2 |

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- Presentation from Malawi - (Dr. Geoffrey Kamau; Mr. Todje ALPHA; and Mr. William KASAPILA).
- State of affairs of agricultural innovations in PARI countries: Many technological innovations recorded less than 50% of rate of adoption in each country. The distribution of agricultural innovation by sector is presented and it indicates that the highest percentage of innovations are from cereals (41%) as well as legumes and oil seeds (21%) (Fig 2).

Percentage(%) 44 45 40 35 30 25 21 20 16 14 15 10 5 3 2 Plant
Protectio 0 Cereals Horticult Livestock & Pasture

Fig 2: Percetages of agrocultural innovations by sector, Malawi

- According to the authors, the four most successful innovations are: (i) conservation agriculture, (ii) compost manuring and application, (iii) plant breeding and livestock/aquaculture. However, the innovation called *Sasakawa* failed due to land limitation.
- Overview of agricultural Innovation Platforms in Zambia**Error! Bookmark not defined.** (Drs. Richard AMPADU-AMEYAW; Mr. Christian CHOMBA; and Dr. Justin OKOLLE).
- The IPs identified in Zambia (Table 3) were grouped by agricultural commodity, value chains and locations and were seven (7), 11 and 16 respectively.

12

Table 3: Summary of Innovation Platforms forms in Zambia

| | Number of IPs | |
|---|--|---|
| By Agricultural Commodity | By Value Chain/Title | By Location (District) |
| 7 | 11 | 16 |
| ✓ Maize ✓ Cassava ✓ Rice ✓ Sorghum ✓ Soybeans ✓ Wheat ✓ Cross-cutting (Conservation Agriculture-CA) | ✓ New Seed Institution for Maize in Africa (NSIMA)- National Coordination Unit ✓ National Pro- vitamin A Orange Maize Steering Committee (NPASC) ✓ Cassava improved Varieties (early- maturing and high- yielding varieties) ✓ Disease-free Cassava Planting Materials ✓ High Quality Cassava Flour (HQCF) ✓ Cassava Value Chain ✓ System of Rice Intensification (SRI) ✓ Sorghum Value Chain ✓ Soybean Seed Production ✓ Mpika Wheat Innovation Platform ✓ National Conservation Agriculture Task Force (NCATF) | ✓ Lusaka-3 (two IPs for Maize & one IP under CA) ✓ Kaoma, Kasama, Mansa, Samfya & Serenje-8 (all IPs for Cassava) ✓ Chinsali-1 (IP for Rice) ✓ Masaiti-1 (IP for Sorghum) ✓ Siavonga-1 (IP for Sorghum) ✓ Mpika-1 (IP for Wheat) ✓ Unidentified location-1 (IP for Soybean) |

- In Burkina Faso, Souleymane OUEDRAOGO details of the identified agricultural innovations are synthesized in Table 4and those technologies with high potential for innovation are detailed in Table 5. From the latter Table, those technologies with high potential for innovation are livestock (8) < agriculture (9) and <market (21).

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- A total of 48 IPs recorded in Cameroon were identified from four (4) out of the five agroecological zones (Fig 3) and the major entry points were around these products -poultry, cattle/maize/plantain, pig/cassava/cocoa (Fig 4).

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- In Ghana, categories of technologies/innovations identified (Fig 5) and the most prominent of these are improved crop variety (119) > Food Engineering (24) > Agro/Food Processing (24) > soil fertility management (21) = ruminants and other food animals (21). In Ghana, the following challenges were identified as being obstacles to the IPs:
 - Most IPs start as projects with no sustainability plan: the comprehensive action plan to scale up and scale out technologies are almost absent
 - IPs established to address shortfalls in previous R&D processes, traces of past methods still practised: emphasis still on farmers and extension activities while other value chain actors are ignored
 - Innovation platforms mostly at community level, when it can be extended to regions and even national (e.g. CIP supported by FARA): funding- declining and delays in release of funds and therefore slowing down IP activities

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State of investment in agricultural Innovation (research included) in PARI countries: In general, less than 10% of national budgets are allocated to agriculture, and very little percent of agriculture budgets are allocated to agricultural research. (Dr. Alpha Oumar KERGNA; Dr. B. Patrice ADEGBOLA)

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- Innovation Platforms in Nigeria Prof. Philip DAYO
- In Nigeria, details of agricultural innovations (Table 6) and the percentage adopted showed Cowpea- SAMPEA6 and IFEBROWN had between 86.30 and 87.8% rate of adoption, while other crops oil palm, tomatoes (JM94/54) and yam (MINISETT) had between 64-87% rate of adoption (Table 6).,
- AGRODEP Dr. Abd Salam EL VILALY
- An advanced database has been developed for all PARI countries by AGRODEP/IFPRI. This will be further upgraded as more data is being provided by the 12 PARI countries, consequently, close interaction between the AGRODEP team and PARI partners is needed to fine tune this database management tool.

o Table 4: Agricultural innovations' inventory in Burkina Faso

| | Types | | | | | | | |
|---------------------------|--------------------------|-----------|----------------|-----------------------------|-----------------|----------|----------------------|-------|
| Domain | Socio- organisational | Technical | Organisational | Socio-technico- economic | Socio-technical | Economic | Technico economic | Total |
| Agriculture | 1 | 4 | | 1 | 1 | | 2 | 9 |
| Food processing | | | | 1 | 2 | | 2 | 2 |
| Alimentation | | | | | | | | |
| Apiculture | | | | | | | 1 | 1 |
| Livestock | | 6 | | | 2 | | | 8 |
| Environnent | | 2 | | | 2 | | | 4 |
| Infrastructures | | | | | | | | |
| Irrigation | | | | | | | | |
| Milk | | | | | | | 2 | 2 |
| Market | 14 | 9 | 1 | | | | | 24 |
| Soil fertility management | t | | | | | | | |
| Socio-organisation | | | | | | | | |
| Total | 15 | 21 | 1 | 2 | 7 | | 7 | 53 |

o Table 5: Technology of high potential for innovation in Burkina Faso

| | | | | Tec | hnology domain | | | | | |
|---------------------------------|-------------|-----------------|-----------|----------------|----------------|-----------|--------|-------------|---|-------|
| Categories of technology | Agriculture | Agro/Alimentary | Cosmetics | Crop/livestock | Energy | Livestock | Market | Pharma-copy | | Total |
| Agriculture | 1 | 6 | | | 1 | | | | 1 | 9 |
| Crop-livestock | | | | 1 | | | | | | 1 |
| Food processing | | 5 | | | | | | | | 5 |
| Livestock | | | | | | 10 | | | | 10 |
| Energy | | | | | 1 | | | | | 1 |
| Environment | | 1 | | | | | | | | 1 |
| Environment/food processing | | 9 | | | | | | | | 9 |
| Environment/cosmetics | | | 3 | | | | | | | 3 |
| Market | | 3 | | | | 3 | 1 | | 1 | 8 |
| Storage & conservation | | | | | | | | | 2 | 1 |
| Agriculture/agro- alimentary | | 1 | | | | | | | | I |
| Total | 1 | 25 | 3 | 1 | 2 | 13 | 1 | | 4 | 50 |

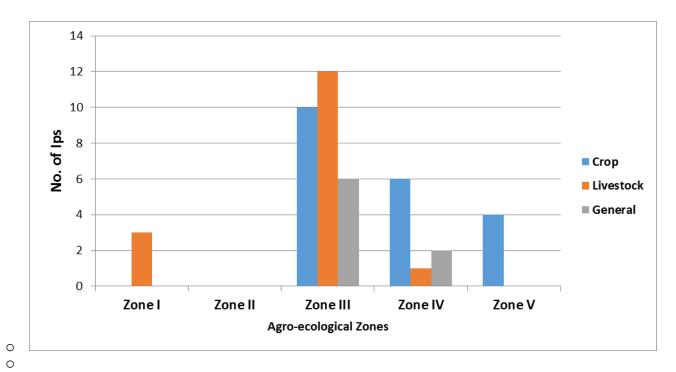


Fig 3: Location of Innovation Platforms in Cameroon

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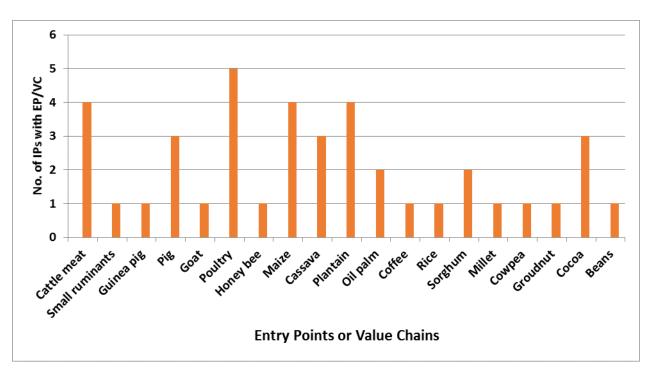


Fig 4: Entry points for innovation platforms in Cameroon

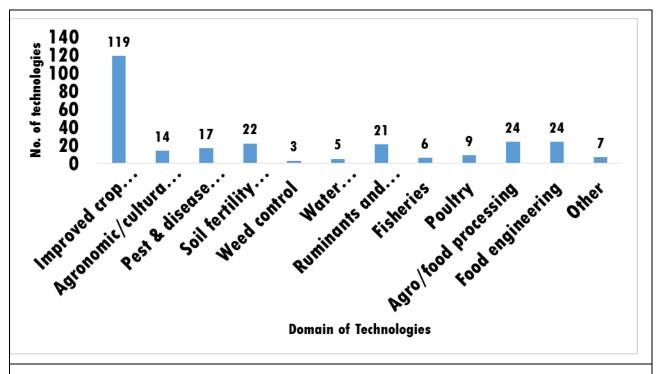


Fig 5: Innovation Platforms in Ghana

Table 6: Innovation Platforms, Nigeria:

| Commodity name | Innovation name | Adoption rate % |
|----------------|-----------------------------|-----------------|
| Cassava | TMS30572 | 6 |
| C | NR8082 | 9 31 |
| Cassava | | |
| Cocoa | PRECOCITY | 56 |
| Coconut | GREENDWARF | 69 |
| Cowpea | SAMPEA6 | 87.8 |
| Cowpea | SAMPEA8 | 12.2 |
| Cowpea | IFE BROWN | 86.3 |
| Cowpea | IFE BPC | 9.6 |
| Irish Potato | NICOLA | 51 |
| Maize | SAMMAZ11 | 32 |
| Millet | LCIC-MV-1 | 51.2 |
| Oilpalm | TENERA | 64 |
| Okra | NHAE47-4 | 9.9 |
| Okra | LD-88 | 37.1 |
| Rice Lowland | FARO 44 | 59.4 |
| Rice Lowland | FARO 52 | 13.8 |
| Rice Upland | FARO46/ITA150 | 12.8 |
| Rice Upland | FARO48/ITA301 | 7.9 |
| Rice Upland | FARO55/WAB-1-B-P38-HB | 6.2 |
| Rice Upland | NERICA-1/WAB-450-1-B-P38-HB | 42 |
| Rice Upland | WAB 189 | 23-46 |
| Rice Upland | ITA 150 | 46 |
| Rice Upland | NERICA 2 | 14 |
| Sorghum | SAMSORG38 | 27.9 |
| Sorghum | SAMSORG39 | 16.1 |
| Sorghum | SAMSORG40 | 13.5 |
| Sorghum | SAMSORG41 | 42.6 |
| Soyabean | TGX-1448-2E | 87 |
| Sugar Cane | NCS-001 | 48 |
| Tomato | JM94/54 | 72 |
| Wheat | LACI-WHIT-1 | 52 |
| Yam | MINISETT | 78 |

- Farmers Innovation contest (Dr. Justice TAMBO).
- Innovations do not come only from scientists. Farmers also have innovations and most of these innovations are yet to be discovered, acknowledged, rewarded/encouraged, and promoted. The discovery of hidden farmers' innovations may also feed into research activities.

6. Main questions and issues raised

Issues and questions raised during plenary discussions are as follows:

- o How is innovation operationalized in PARI programme?
- What is the difference between a cooperative and an innovation platform?
- The sustainability of Innovation Platforms (IP) is a challenge. How to make sure that IPs sustained?
- o Impacts of IPs need to be studied.
- o All needed investment data are not available in countries.
- It is necessary to combine research and extension to enhance chances of dissemination and adoption of innovations.
- Who are the experts to evaluate innovation applications during the innovation contests?

7. Answers to main issues and questions

The following were the key answers given to questions and issues:

 Existence of markets for products and consideration of interests of stakeholders are key for sustaining IPs.

Main questions and issues raised

Issues and questions raised during plenary discussions are as follows:

- o How is innovation operationalized in PARI programme?
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- The sustainability of Innovation Platforms (IP) is a challenge. How to make sure that IPs are sustained?
- o Impacts of IPs need to be studied.
- o All needed investment data are not available in countries.
- It is necessary to combine research and extension to enhance chances of dissemination and adoption of innovations.

• Who are the experts to evaluate innovation applications during the innovation contests?

8. Answers to main issues and questions

The following were the key answers given to questions and issues:

- Existence of markets for products and consideration of interests of stakeholders are key for sustaining IPs.
- Prior to the establishment of IPs, the whole value chains need to be studied in order to enhance chances of success and sustainability of IPs.
- Ownership of IPs by stakeholders and rigorous monitoring and evaluation methods are also important for the success and the sustainability of IPs.
- Cooperatives are hardly composed of multiple stakeholders, while IPs are essentially multistakeholders' platforms.
- Financial contributions (payment of periodical [monthly/bimonthly/...] dues) from stakeholders can also improve the chances of sustainability.
- Evaluators of applications in innovation contests may not be made only of scientists.
 Farmers' organisations may also be involved.

9. Conclusion and recommendations

Concluding remarks and recommendations of the side event are summarized as follows:

- Agricultural innovations and improving total factor productivity are necessary for reducing hunger
- Mechanisms may be found to improve investments in agriculture, agricultural research, and agricultural innovation, in each country.
- Articulation between research and extension may be well established such as to ease dissemination and adoption of innovations.
- Conditions for sustainability of innovation platforms may be determined and established around IPs.
- Impacts of existing IPs need to be studied as to inform further IP mediated initiatives.

10. Limitations

Time constraints did not permit the in-depth presentations especially the last two presentations on innovation contest and PARI database design and management. Another opportunity may be found to allow PARI partners to contribute to the improvement of the database management tool that is under construction by AGRODEP/IFPRI.

11. Appendices

Appendix I : Programme of the sidevevent

| Tuesday 14 th Ju | une, 2016 | |
|-----------------------------|---|---------------------------------------|
| 14:00-14:15 | Welcome and opening remarks | Dr. Yemi (ED FARA)/ Prof. |
| | Setting the scene | Von Braun (DG ZEF) |
| 14:15 – 14:30 | Key note Presentation. The Green Innovation Centres: | Dr. Stefan Schmitz, |
| | Scaling up innovations and disseminating knowledge in | Head of Directorate Food, |
| | rural areas. | Agriculture and Rural Development BMZ |
| | PARI progress in Africa | |
| 14:30 – 15:15 | Situation analysis of agricultural innovations in Kenya | Dr. Geoffrey Kamau |
| | Situation analysis of agricultural innovations in Togo | ALPHA Todje |
| | Situation analysis of agricultural innovations in Malawi | William Kasapila |
| | Discussions | |
| 1515 - 1600 | Overview of agricultural Innovation Platforms in Ghana | Dr. Richard Ampadu-Ameyaw |
| | State of investment in agricultural Innovation Zambia | Dr. Moses Mnwale |
| | Overview of agricultural Innovation Platforms in Cameroon | Dr. Justin OKOLLE |
| | Discussion | |
| 16:00-16:15 | Coffee Break | |
| 1615 - 1700 | State of investment in agricultural Innovation Nigeria. | Prof. Dayo philip |
| | State of investment in agricultural Innovation Mali | Dr. Alpha Oumar Kergna |
| | State of investment in agricultural Innovation Zambia | Dr. ADEGBOLA B. Patrice |
| | Discussion | |
| 17:00 – 17:30 | Presentation from AGODEPe-Atlas | AGRODEP team |
| | Presentation on "Farmers Innovation context" | Dr. Justice Tambo |
| 1730 - 1800 | Discussions and closing | |

11.1. Appendix 1: List of participants

| DATE | JTATOR: | PARI 14-Jun-16 Prof. Olaleye (Consultant) MrBbo 001 | | | |
|------|----------------------|--|---------------------------|---|------------|
| No. | Name in full | City/Country | Institutional affiliation | Contact details & E-mail Address | Signature |
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| | DAO Balasadi | T060 | ITRA | 60228 90 7602 25 Lalabaditlasegnal Com | Durgry |
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11.2. Appendix 3: Copies of presentations

11.3. Appendix 4: Some photographs





Participants of the PARI side event



Dr. Yemi Akinbamijo opening the side event



Dr. Detlef Virchow co-opening the side event



Prof. T. Olaleye, facilitator of the event



Dr. S. Schmitz presenting on One world No Hunger Initiative of BMZ



Dr. Geoffrey Kamau presenting on situation analysis of agricultural innovations in Kenya







Panel of presenters responding to questions on situation analysis of agricultural innovations



Dr. Richard AMPADU-AMEYAW presenting on Overview of agricultural Innovation Platforms in Ghana



Mr. Christian CHOMBA presenting on Overview of agricultural Innovation Platforms in Zambia



Dr. Justin OKOLLE presenting on Overview of agricultural Innovation Platforms in Cameroon







Dr. Alpha Oumar KERGNA presenting on state of investment in agricultural Innovation in Mali



Dr. B. Patrice ADEGBOLA presenting on state of investment in agricultural Innovation in Benin



Dr. Abd Salam EL VILALY presenting an Advanced Data Exploration System to Enhance Country Data and Knowledge Management



Dr. Justice TAMBO presenting on Farmers Innovation contest