

## Ghana National Policy Roundtable of the Program of Accompanying Research for Agricultural Innovation (PARI)



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*Program of Accompanying Research for Agricultural Innovation*

[www.research4agrinnovation.org](http://www.research4agrinnovation.org)



## Background

The Program for Accompanying Research for Innovation (PARI) is a partnership initiative between the Center for Development Research (ZEF), the Forum for Agricultural Research in Africa (FARA), and the International Food Policy Research Institute (IFPRI), which is entrenched in the “One World – No Hunger” initiative of the Government of Germany. The PARI project aims to secure and enhance investments in the Agricultural Innovation Centers (AICs) in a sustainable way through a dedicated cooperation between research and application. Leveraging on the successes of research and innovation initiatives in African agriculture including the integrated agricultural research for development (IAR4D) concept promoted by FARA. The programme aims to build an independent accompanying research to support the scaling of agricultural innovations in Africa and thereby spur development of the African agriculture sector.

Participants (25-30) will include leading experts from governments, research organizations, academia, private sector, farmers’ organizations and non-governmental organizations, and a team of the Germany supported Green Innovation Center in the country. Government representatives will be invited from the Ministries of Agriculture, Science & Technology and Finance (Chief Director level) as well as others that are relevant in the national context.

A National Roundtable on PARI was held between 31<sup>st</sup> –July to 1<sup>st</sup> August 2017 in Accra, Ghana. The meeting was hosted by Science and Technology Policy Research Institute (STEPRI) of the Council for Scientific and Industrial Research (CSIR), which is the principal partner of PARI in Ghana.

The expected outcomes of the roundtable include set of policy and investment implications arising from the research jointly identified by the participants, report summarizing the main points of discussion among others.

The objectives of the meeting were to:

1. Present preliminary PARI research findings of relevance to key stakeholders engaged in national innovation processes.
2. Ground-truth the findings with local expertise and receive guidance on further research.
3. Jointly identify policy implications of the research, especially scope for promising innovations that would serve agricultural development, jobs and food security.

## Opening



The opening started with a welcome by Dr Yemi Akibamijo, the Executive Director (ED) of FARA, who stated that the dialogue is coming up at an opportune time in the development history of Africa agriculture. A time when concerted efforts are geared towards the use of agriculture as source of solution to various social and economic problems that are ravaging the

continent. He further stressed that the logic behind the choice of agriculture as source of solution to most social problems is not fetched; as it is the most prominent livelihood in Africa, engaging an average of 65% of the population. Thus getting agriculture to become a prosperous livelihood will automatically mean turning 65% of Africa inhabitants into comfortable and prosperous individuals. This is the most desired change on the continent, and it is considered do-able by all and sundry. The lever for achieving the desired change in Africa agriculture revolves around its science. The next revolution will be in Africa but that must be propelled by coherent action and strategic moves with the Science Agenda (S3A) as a propellant and for which policy dimension as its important component. He concluded by commending the efforts of IFPRI, ZEF and CSIR towards the implementation of the PARI project and thanked the Government of the people and the Republic of Germany, for the good support to agricultural research in Africa and the global effort to eradicate hunger in the world.

This was followed by a brief from Dr. Ousmane Badiane, Africa Director, IFPRI, who thanked STEPRI for hosting the meeting and started by quoting Dr John Mellon, who stated that “the most effective way to get people out of poverty is to raise the productivity of what they depend on for their livelihood”. In Africa, that livelihood is farming and raising its productivity depends on sound policies. He stressed on the importance of good policies in the development of innovation systems to make technologies work.

Dr Heike Baumuller presented comments on behalf of Prof Joachim von Braun, Director of ZEF. Stating that putting PARI into broader political context entails focusing on achieving sustainable development and food security as part of the global agenda. She informed audience that the German government hosted a high level meeting on food security under the Berlin charter whose driving principles are science and innovation. PARI therefore seeks to achieve food security through sustainable agriculture and rural development. This involves scaling up and bringing researchers together to identify opportunities for public and private investment. This is further scaled up through learning and exchange of ideas with

partners in India and elsewhere. The meeting offers opportunity to share preliminary findings, the outcomes from which will help Ghana policy makers make informed decisions.



Dr. Victor Agyemang, the Director of CSIR welcomed all present and stated that, innovation is assuming a very important status in the Ghanaian national dialogue. This is symbolized by renaming the Ministry of environment to Ministry of environment, science technology and innovation. He further stated that The president of Ghana, Dr Nana Akufo Addo Donkwa, recently reiterated his

commitment to research and innovation particularly in the universities and an important component here is policy research.

He lamented that within CSRI, of the 3,500 staff on ground, only 2% are involved in policy research. Within the 7 thematic programs in CSRI, those related to food security, science and society and innovation for market are directly linked to policy. The policy dialogue is timely as it may offer additional policy guidance to control over dependence of food import. For example, in 2016 alone, Ghana imported 1.1 billion USD worth of rice alone! While agricultural contribution to GDP is 19%, the sector receives only 12% in finance. Of the 12%, very little goes to research. While 60% of agricultural research fund goes to crop production, 10% goes to animal research and another 10% to forestry 10%. Unfortunately, policy research receives less than 1%. This calls for the need to change the way agriculture is financed in the country. He stated that CSRI is privileged to be part of this round table as it represents a way forward and that all recommendations arising from the discussion will be delivered to the minister of agriculture for the attention they deserve.

### **Session 1: Agricultural innovation in Ghana – Setting the scene**

In a presentation titled Overview of PARI research and outputs related to Ghana and delivered by Dr. Heike Baumüller, participants were introduced to an outline of PARI research themes, as a way of understanding the Ghanaian innovation environment through identification, documentation & impact assessment of promising innovations to map areas with high potentials for investment. Following this, Dr. George Essegbey presented on Pathways to influence agricultural policies in Ghana, where he reviewed the general pathway influencing agricultural policies in Ghana by discussing key elements of the generic policy cycle starting with agenda setting to formulation, adoption, implementation, M&E,



support and maintenance. Highlighting champions and stakeholders and giving an example of the 2010 science, technology and innovation policy.

A presentation on the Status of agricultural innovations, innovations financing and innovation platforms in Ghana was then given by Dr. Richard Ampedu. He reviewed the status of innovations, IPs and



investment in Ghana, which respect to the way the platforms are organized, how they are selected and their roles in stimulating innovations. He reported that 270 Innovations identified, with 10 being promising. He further presented on the rice value chains, where he reported that the highest yield as 1.5ton/ha despite the availability of surface water to improve on this

productivity.

### Discussions from session 1

Comments my participant: There are a number of innovations developed by farmers and this calls for more recognition of their efforts and work with them to be able to identify further the innovation. An example is in management of *Tuta absoluta* using ash.

1. **Directed to PARI:** What is the entry point of PARI interventions with respect to value chains/agro ecologies?

**Response by Heike:** There are different entry points at continental and sub-national levels. All of them are guided by opportunities for investment. For value chains, most of the work has been on rice and maize as they are part of the green areas. Others are cocoa and cassava.

2. **Directed to STEPRI:** Is there an experience on the cycle adopted to private process?

**Response by George:** As long as it is public policy, there has to be a sector ministry that is dealing with that policy even if it comes from the private sector.

3. **Directed to STEPRI:** What is the actual impact of the policies?

**Response by George:** There is an implementation plan after the adoption of the process and a critical component is finance. An example of successful one is market-oriented policy.

4. **Directed to STEPRI:** Why the focus on government for investment & finance? What of other types of financing that don't come from government but can help STI?

5. **Directed to STEPRI:** How long does it take to have a policy adopted by cabinet as a national document?

**Response by George:** Depends on the priority of the government for implementation

6. **Directed to STEPRI:** The champions seem to be people already in the sector. How do you engage those not in the line?

**Response by George:** The first task is to convert them from their neutral position using evidence.

7. **Directed to Richard:** What agricultural expenditure was used for the analysis in showing the Malabo point?

**Response by Richard:** The table depended on technologies from innovation based on existing criteria.

## **Session 2: Innovation opportunities in the rice value chain in Ghana**

A presentation on Green innovation centers (GICs) in Ghana was jointly delivered by Michael von Stackelberg and Stephen Debre. They reported that in Ghana, the GIC is active in Brong Ahafo, where demonstration and trainings at Wenchi Farm Institute are the main focus while in the Central region there is regional Innovation Network on Maize and regional innovation network on rice in Eastern, Volta and greater the Accra regions. The initiative supports technological and organizational innovations within the maize, rice and pineapple value chains and combines advice, training and investment measures. It also seeks to fortify Germany's cooperation partnership with Ghana through engagement of open-minded, commercially oriented farmer groups as well as upstream and downstream companies willing and capable of successfully operating innovations. The interventions in the GICs has led to increased income among 75,000 smallholder farm businesses supported by an average of 30% (maize) and 25% (rice) from the sale of produces from the maize and rice vocational centres. The portion of the supported smallholder households that have a moderate or high risk of malnutrition has decreased by 15% (according to the Food Insecurity Experience Scale (FIES) of the Food and Agriculture Organization (FAO). In addition, 1,000 new jobs in upstream and downstream businesses in the two vocational centres have been created with at least 20% of these jobs going to young people and 35% to women.

## **Session 3: Identifying promising regions and innovations for investment in Ghana**

The session started with a presentation on Targeting investments in agricultural innovation using typologies of micro-regions by Eduardo Maruyama from IFPRI. The presenter demonstrated the importance of typologies in helping to integrate micro-data analysis, crop modelling, and the macro-economic modelling work and scaling up for impact assessment. Mining data from Ghana Living Standards Survey (GLSS) 6 2012/13, Ghana Poverty Mapping Report (Ghana Statistical Service, 2015), Road network

and topography from DIVA-GIS, land cover type from NASA and the USGS, the system presented the ingredients from agro-ecological data, to show areas with best agricultural opportunities, efficiencies of each region and their potentials. In addition, the typology characterizes the country on the basis of accessibility for agricultural production, poverty and the interplay among the different dimensions. A critical take away from the data is that the typology reveals high heterogeneity in the agricultural potential, agricultural efficiency, and poverty across the country. As such, agricultural innovation oriented policies and investments need to reflect this heterogeneity.

The next presentation was on Ghana eAtlas: A Tool for Prioritization & Typology Development, presented by Dr. Abd Salam El Vilaly of AGRODEP/IPPRI. He presented the components of Ghana ReSAKSS country eAtlas (RCeA), an online and highly interactive and dynamic GIS-based mapping tool designed to help policy analysts and policymakers access and use high quality and highly disaggregated data on agricultural, socio-economic, and bio-physical indicators to guide agricultural policy and investment decisions. It is an efficient system that considers network issues and hardware limitation in most African academic, research, and application institutions. The system has so far covered Benin, Burkina, Burundi, Cameroon, D.R Congo, Ethiopia, Ghana, Ivory Coast, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda,

Senegal, Tanzania, Togo, Tunisia, Uganda and Zambia.



Next presentation was on Identifying and scaling farmer innovations delivered by Dr. Justice Tambo from ZEF. Farmer innovation contests as an instrument to unearthing and promoting farmer innovations. The system allows for strengthening

capacity of farmers to innovate, document innovations and convert them into marketable products

## Discussion from above

### Directed at Justice

1. What are we doing about intellectual property rights to the farmers?

**Response by Justice:** IPR presents challenges as there is lack of institutional mechanism in some of the countries and in others there is high cost of filing for IPR.

**Directed at Abd Salam**

1. How do I access the information?

**Response by Abd Salam:** All the maps and data will be incorporated on the e-atlas available on the internet.

**Directed to Justice**

1. Why did you restrict the farmer contest to upper eastern region when there may be several farmer innovators in other regions?
2. Among the criteria used in selecting the farmers, did you look at the simplicity in the design?

**Response by Justice:** Admits that the selection procedure was not perfect but it was validated by consulting. In addition, some of the innovations may have been in operation elsewhere but if they are not used in a given region and are introduced by one farmer to that region, they may qualify as being innovative.

3. Did you incorporate gender in the conception of the technologies developed?

**Response by Justice:** The entire process was gender sensitive

4. **Comment on IPR:** It's not always IPR comes in the form of cash. It may come in the form of recognition.

**Directed to Eduardo**

1. Is there a buildup mechanism that can combines the indices on poverty and good condition to come up with more specific picture?

**Response by Eduardo:** We had to harmonize indicators across countries and that meant using general indicators. As we get more specific to country levels, it may be possible. The typology is not a blackboard and can be upgraded with time.

2. Did you consult CSRI to explore the possibility of integrating the soil map developed by it?

**Response by Eduardo:** The soil map was consulted but not used in inputting the data. This was to avoid inconsistencies across the countries.

3. In mapping the agricultural potentials of Ghana, how did you arrive at the conclusion that one region has more potential than the other when the crops grown in those regions are generally different? For example, the north produces cereals and the south cocoa.

**Response by Eduardo:** The econometrics behind the map is that what is being analyzed is the potential for revenue. The scenario is potentially on local markets focusing on income generation.

4. Is there any effort to package the modelling system in such a way that policy makers can easily understand it?



**Response by Eduardo:** The tools are designed to help the central planning unit. We engage staff of local governments and train them.

The next presentation was on the Potential for Crop Technology Innovation in Ghana delivered by



Dr. Ehsan Eyshi Rezaei, ZEF. In it, he highlighted the potential for crop technology innovation in Ghana in which changes in management practices (90kg/ha of N, early sowing and use of new cultivars) are capable of doubling maize yield in Ghana. Following this, Dr. Fousseini Traore from AGRODEP/IFPRI presented on economic modelling tools to help understand where the best

opportunities for innovation investments in maize chains are in Ghana.

## Discussion

### Questions to Ehsan

1. Do you trust the quality of the data you accessed to do the modelling you did?

**Response by Ehsan:** It's not about trust but about accessibility to data and that's why we prefer to use long-term data set. In African countries the e-atlas is available only for 3 years whereas the FAO data set is longer and that makes the latter more useful in this case. It is very clear we need more precise data as we currently rely on low resolution (25Km). However, this is what we have for now.

2. Since countries have no reliable data, how do we address that?

**Response by Ehsan:** We manage with what is available (see 1 above).

3. How do you factor the costs of research, use of fertilizer, transport etc. in the economic model?

**Response by Ehsan:** Increasing fertilizer would mean increasing production. That can also be taken into account if it is available. The cost is cost of technology x price

### Questions to Fousseini

1. On economic model. What is AEZs etc. (agro-ecological zones). Is this from the south to north or along the rivers?

**Response by Ehsan:** See figure in the presentation

2. What is the explanation for the wage increase?

**Response by Fousseini:** Land is fixed that's why it suffers the most but labor is flexible and that's why it increases.

**Clarification by Ousmane:** What defines the factor returns is not. Example: price of phones has come down, yet the wages in the sector go high because the sector expands.

**Response by Fousseini:** This is a dynamic model and we use as much info as we can to populate the model. All information is taken to do the baseline

The next session addressed key questions which were responded to in breakup sessions.

**Question 1: What are the key policy implications of the presented research and potential policy responses?**

**Outcome from Group 1**

Key Research Presented	Key Policy Implication	Potential Policy Responses
Value Chain (Rice, Maize) <i>Priorities</i> Seeds Mechanization Value Chain	<ul style="list-style-type: none"> <li>- Mechanism to facilitate access to credit.</li> <li>- There should be a strategy to regulate the seed sector to ensure that farmers get the right seed</li> <li>- Processing should be improved to add value to our products.</li> <li>- Mechanized tools for farmers which are appropriate and less costly</li> </ul>	<ul style="list-style-type: none"> <li>• Having private sector to invest in Certified Seed and effect control</li> <li>• Better access to financing</li> <li>• Better Protection for seed breeders</li> <li>• Strength institutions that are mandated to produce seed</li> </ul>
Yield Limiting Factors at the Region scale (Social Limiting Factors and Bio – physical limiting factors)	<ul style="list-style-type: none"> <li>- To develop stronger extension systems to help farmers to improve their knowledge on GAP.</li> <li>- Extension should be developed to bring in the private sector</li> <li>- ICT in agriculture</li> </ul>	<ul style="list-style-type: none"> <li>- Train more Extension Workers</li> <li>- RECL's should be translated into farmer field schools.</li> <li>- E-Extension should be enhanced.</li> </ul>
Scaling Up Farmer Innovation	<ul style="list-style-type: none"> <li>- IP protection should be given to farmers' innovation.</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- Clear path should be given to protect farmers' innovation.</li> <li>-</li> </ul>
Innovation Financing	<ul style="list-style-type: none"> <li>- There is inadequate agricultural financing or types.</li> <li>- To have a financing mechanism to take care of the entire value chain</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- There should be diversity to target the various agricultural value chain</li> <li>-</li> </ul>

Economy Wide Implications of Scaling up innovation	<ul style="list-style-type: none"> <li>- Efficient and adequate data is required.</li> <li>- To improve institution capacity.</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- Strengthen of institution to collect and churn out accurate data</li> <li>-</li> </ul>
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## Question 2 What are future research priorities related to agricultural innovation in Ghana?

### Outcome from Group 1

- Under-utilized crops in Ghana as it will help to achieve Food Security. E.g. Taru, Water Yam, Orange fleshed sweet potatoes, Millet, Sorghum etc.
- Inadequate research on Livestock issues in Ghana.
- There should be a database which should updated regularly and made public for research purposes.
- There should be a platform to harmonize data in the Agriculture Sector.
- Cassava flour should be enforced into law to cut down on conventional flour.
- Enhancing the Cassava and Oil Palm value chain in Ghana.
- The Agriculture sector in Ghana should research into Biotechnology.



### Outcome from Group 2

#### POLICY IMPLICATIONS

- Issue of application of fertilizer
- Instead of blanket application of Fertilizer there should be a policy to guide its application based on the typology

- Emphasis on the application of organic fertilizers, and this should be in addition to the mineral fertilizer.
- Land Tenure system and linkage to gender issues
- Intellectual property rights especially in relation to innovations developed by farmers.
- There is the need for policy to promote secondary activities of agriculture such ICT, processing and marketing other than production sector.
- Mechanization agriculture in the entire value chain should also be captured. Different scale of operations should be taken into account
- Data and statistics; There is the need to strengthening of the department /systems for generation and processing of data and should be a reliable source of data and information
- Policy for the development of structured markets
- Access credit
- The effect of Climate change and water resource availability. Need policy to develop infrastructure to enable farmers to address these effects and impact on productivity.
- Reward system for farmers and youth, women farmers should be institutionalized
- Policy to have strong institutional collaboration/coordination to address issues relating to other sectors of agriculture. E.g. marketing especially in bumper harvest. Producer prices
- Policy matters should uplift other sectors of Agriculture other than crops. E.g. fisheries, animal

### **Research Priorities for agricultural Innovation in Ghana**

- Fish value chains should be considered in future research
- Need to research sustainable financing in agricultural value chain
- Research to guide in instituting and implementing policy especially in risk management governing agriculture sector. A very viable agriculture insurance should be looked at.
- Data bureau of farmers should be taken seriously. This should be the first step in defining/identifying who a true farmer is. This will be the basis for investments into the sector.
- The soil study and research should be strengthening and well documented. Misapplication of fertilizer to soil where they are not needed.
- How to develop structures for ready Market for farmer? cooperative scheme, buffer stock as an outlet to market the farm products

### **Priority future Research**

- Prioritizing future research in marketing of agricultural produce

- Targeting application of Fertilizer, soil maps should be made available to farmers.
- Research to make easy methods of assessing of soil by farmers.
- Efficiency of agricultural production based on the various ecological zones, in-depth analysis need to be carried out.

### Discussions arising from the presentation by group 1

1. **Dr Ousmane:** What can be done to solve the data scarcity issue in Africa and Ghana?

Response by George: Because available data are not specific to agriculture, we need to sit down and decide which areas we need to zoom in and gather the data, systemize its storage such that it allows for easy access and guarantees quality for usage. The challenge is in putting that system together and ensuring quality across the process. In STEPRI, components are taken by focusing of agricultural science indicators surveys in Ghana by asking questions in the sector and institutions that work with agriculture. However, there are challenges in institutionalizing linkages with the sources of the data and maintaining the linkages to build trust. For PARI we will need to talk about other dimensions not covered.



**Comment:** one key stakeholder in data collection I MOFA but they have poor resources. Data validate means continuity but due to resource scarcity, they extrapolate.



2. Do we have champions for data?

**Response by Honorable Yakubu Alhassan:** I am one of the champions. In the ministry of agriculture, the statistics started as a unit, later it evolved to directorate and the directorate does not extrapolate. Its working groups gather annually and validate the information gathered before publication.

### **Discussions arising from the presentation by Group 2**

1. **Dr George:** We need to discuss the point regarding the involvement of private sector and their involvement in extension service. This means farming a policy proposal more carefully and also consider the kinds of farmers to start with.
2. **Dr Ousmane:** Learning and skills acquisition in farming need intensive vocational trainings that are consistent and not the pilot type. Lessons may be learned from Ethiopia where farmers are trained at every level. The rest of Africa, few farmers are actually trained.
3. **Question from audience:** What do you mean by demand-driven extension?  
**Response:** An extension system where farmers are more proactive to their needs. They have a specific need they want to address and the service is at fee so that there is value for money. For this private sector is fundamental.
4. **Comment:** There is a clear farmer demand for extension and therefore the need to determine how sustainable is the public extension, which should open up. This is because farmers are private individuals too and therefore need services.  
  
In response to a question on the list of policy issues related to fertilizer, organic fertilizer etc.: The main issue is the information on fertilizer reaching farmers and not the soil fertility information. There already is a detailed soil map in Ghana more than any other country in Africa
5. **In addition to 4 above:** Many African countries don't have a fertilizer policy to guide fertilizer application. The recommendation is that policy on fertilizer application becomes a policy given the data on nitrogen application as shown in today's presentation. It is pertinent to note that this includes organic and non-organic fertilizers.
6. **In relation to demand-driven extension:** Categorizing farmers into those who can afford the services and those who may not, may assist in opening up.

## **Reflections on outcomes and Future of PARI**

This session was facilitated by Dr Wole Fatunbi and the panel of discussion comprised of a panel Dr. Yemi Akinbamijo, Dr. George Essegbey, Dr. Ousmane Badiane, Dr Heike Baumüller and Dr Nuhu.

### **Facilitator: What is the relevance of PARI George?**

**Dr George:** PARI is in synch with STEPRI because it stimulates innovation and addresses one of the developmental goals (food nutrition security) which has a global dimension as it seeks to eradicate hunger. Beyond that, from the research and their findings, there is a case for stimulating and ensuring that innovations are up scaled to enable Ghana achieve self-reliance. In Rice alone, we spend more than one billion dollars for importation.



### **Facilitator: How do we align and FastTrack global PARI vision and Ghana?**

**Dr Heike:** It's fascinating to see the research we have been doing is tested here in Ghana. Some of what we are doing is on track to contribute to the vision of PARI. Some of the emerging points including the social dimensions such as gender and the people behind the farming.

**Facilitator: How do we FastTrack innovation in Ghana so that PARI delivers to farmers?**

**Response by Dr Nuhu:** We are already doing something to that effect. Through stimulating interest, bringing issues that drive acceptance of new innovations and pathways to influencing policies in trying to get policy makers on board. The discussions here themselves are means of transmitting the ideas to higher authorities in the ministry.

**Facilitator: How do we ensure policy makers of knowledge pull from the knowledge push from the PARI?**

**Dr George:** We need to begin by what we are doing now, where STEPRI engages with the ministry which ensures that the two collaborate. This also includes policy symposia on topics relevant to the ministry and as that is done, the ministry recognizes the ability of STEPRI and demands for services. We have reached a stage where policy making has become research-evidence based.

**Facilitator: What is your most objective perception on the future of PARI on the continent?**

**Dr Yemi:** PARI is about poverty, research, etc. in Ghana. More than 1 billion USD used to import rice! Are we running in circle or is PARI here to help? We have to look at other countries and see how they resolved and to do that requires science. In India, the secret was to take national collective decision including fasting. Three days fast in rice means saving 3 million savings on rice.

Answering the question: We need to ask those who succeed. In China, agricultural budget is settled first before any other sector. From India, the lesson is that “everything can wait, except agriculture”. In Brazil, there are over 2,000 researchers at EMBRAPA, who are well paid. As such if you sow peanuts and reap peanuts and not cocoa. PARI is already in 12 countries and has thrown a lifeline. We need to have the wisdom and the presence to take it up.

**Facilitator: The IFRPI and ZEF have given us data and outputs. Within the confines of PARI, how do ensure collecting, pulling and delivering them into the hands of users?**

**Dr Ousmane:** I'll connect this to evidence-based planning. The data that is produced forms part of what gives you an idea of what's working. A kind of diagnosis. Working without data is risky. What PARI is trying to do is to get a mini partnership. The data is needed before the policy maker needs it. It has to also be based on expertise and local conditions. To do that, you need the right institutional arrangement. However, there is no excuse for a country like Ghana not to have robust and reliable data all the time. From the discussions we've had here, two main crops appear to be the priority and we have seen the gaps and the potentials. We should therefore focus and build on that. Let's build on the GICs. The dependence on importation is not always negative. There is a positive side of dependence on importation is that it

shows that we are in a position to feed our people and there is market for food. This can help us focus of grow by filling the gaps. Let's focus more on the production

**Facilitator: This trade balance to reduce import. How do you handle it?**

**Dr Yakubu Alhassan:** The target should not be to stop rice import but to improve local rice production. We need to hold our brief. There should be no confusion with responsivity of ministry of trade and that of agriculture. In addition, we need to have real and informed policies. Everything is about the policy that drives it. PARI is providing us with the evidence needed. The philosophy of "one world no hunger" allows the activities of the program to be indigenous. PARI allows for exposing oversight in policy decisions taken long ago (e.g. de-stoner and ban on old mills), while fostering partnerships.

**Facilitator: Since you interact with GIZ and PARI, Are we on the same page?**

**Dr Richard:** A few interactions and from the presentations yesterday show we are on the same page. Policy entails getting in touch with people using research and development and both are doing the same.

### **Closing remarks**

**Dr Heike:** Vocational training is not just for farmers but all actors. Combining practical and theoretical experience is critical.

**Dr Nuhu:** Regarding cataloguing farmers, the ministry has taken steps to do that. Last week there was an activity to catalogue rice farmers and the result from that will be available online. Other activities are linking farmers based on cashless transaction.

**Dr George:** We have to be working harder to harmonize our policies and ensure that the connection among them is sustainable and stimulates overall growth. Another connection is with the ministry education with school feeding program.

**Dr Yemi:** If your tank is leaking, more fuel is not sufficient.

**Dr Ousmane:** To produce more, you cut the unit cost and the technology, the cultivars, the

Trade balance: There are things that we do and do well and others and not. We should focus on what we do well and those we cannot do well we can collaborate with others. You need

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