



## INNOVATION PLATFORM: METHOD TO ENGAGE CROP-LIVESTOCK STAKEHOLDERS IN WEST AFRICA

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**ABSTRACT:** *With an objective of engaging stakeholders in mixed farming systems in the semi-arid tropics of West Africa. Innovation Platforms (IP) meetings were initiated by the International Crop Research Institute for Semi-Arid Tropics (ICRISAT) together with National Agricultural Research and Extension Systems (NARES) in Nigeria and Niger. The transboundary transect between Nigeria and Niger called Katsina Kano and Maradi (KKM) was selected as action site. Results indicated that the IP meetings at KKM transect allowed platform members (farmers, processors, marketers, political and traditional institutes and researchers) to obtain feedback on performance of introduced agricultural technologies, link farmers to seed, agro-chemical companies and commodity brokers, and provided opportunity to the registered farmer groups to source inputs through governmental agencies. The IP meetings also facilitated decision making among members through scenario visioning. As a result of such visioning, the researchers were encouraged to explore the replacement of maize with sorghum in poultry feed consequently trials were initiated in Kano and earadi. The IP was also used in identifying relevant capacity building needs of stakeholders. A crop-livestock integration training was identified for the stakeholder in the transect. The training was therefore conducted for 41 participants from 5 countries (Benin, Niger, Mali, Burkina Faso and Nigeria). The stakeholders used the platform to enhance knowledge, expand network along with technology oriented practical demonstrations on food-feed crops, innovation of green and dry fodder chopping using machines, use of grinders for feed block making, animal traction and manure management.*

**Key words :** *Innovation platforms, crop-livestock, West Africa*

### INTRODUCTION:

The top to down approach or traditional approach to research assumes that researchers generate knowledge, which farmers and others adopt, resulting in change. In reality, such a linear approach often has a limited impact: the researches mostly turns out to be inappropriate, and the findings are not adopted. Consequently, much research has shifted towards more collaboration between researchers and other stakeholders by using concepts such as *Innovation Platform (IP)*.

#### **Innovation Platform-**

A number of definitions exist for innovation. An innovation can be an idea, knowledge, a belief, a social norm, a product or service a technology or process, even a culture as

long as it is perceived to be new (Singhal *et al*,2012 ). An innovation platform (IP) is a space for learning and change comprising of a group of individuals (representing organizations) with different backgrounds and interests, farmers, traders, food processors, researchers, government, officials etc (Homann-Kee Tui *et al* 2013) .IPs are composed of a range of actors, often with very different backgrounds, who discuss and address challenges and opportunities around a particular issue or area (Nederlof *et al*.2011). An IP consists of a set of stakeholders who are bound together by their individual interests in a shared issue, objective, challenge, or opportunity, with the potential to improve livelihoods, businesses, and/or other interests (Ajeigbe and Dashiell, 2010). An IP refers both to the emergent properties of groupings of

players and their processes, practices, and habits, as well as to the formal structures that might give

IPs may operate at local, national levels and international levels. Innovation platform involves 6 platform phases (Varma *et al* 2009): identify stakeholders; establish learning alliance, assessment, knowledge sharing and consensus building; visioning and prioritizing; planning and implementation; monitoring and evaluation. Stakeholder engagement broadly refers to a framework of policies, principles, and techniques which ensure that ...communities, individuals, groups, and organisations have the opportunity to be engaged in a meaningful way in the process of decision-making that will affect them, or in which they have an interest (Yee 2010). In essence, 'innovation platforms' are a worthwhile idea because we know that meaningful change happens in networks of interdependent actors, who cannot change if others do not simultaneously change (Boogard *et al*, 2013).

This paper reports the findings of the five innovation IP meetings in agricultural contexts of the Niger and Nigeria, which were funded by the Consultative Group on International Agricultural Research Program on Dryland Systems addressing the key question:

How can research (ers) in innovation platforms contribute in engaging crop-livestock stakeholders in mixed-farming?

#### **MATERIALS AND METHODS**

In order to ensure effective stakeholder engagement, a number of methods were employed for example: stakeholder identification, face to face meetings, technical consultations, documentation of agreed upon roles and responsibilities, work plan development, strategic planning and training workshop. The innovation platform process involved building on existing networks and creating new networks. In Kano, Nigeria innovation platforms, which were already established at Bebeji (Kano) and Zango (Katsina) in Nigeria and likewise two villages were selected: Gourjia (Altitude 438m; N: 13° 22' 39.1; E: 008° 00'44.7) and Milli (Altitude: 414m; N: 13° 28' 24.3; E: 007° 52'48.1) in Maradi (Niger). The level of these innovation platforms were at actual sites as well as national, and international levels.

#### **RESULTS AND DISCUSSION:**

Crop-livestock interaction in the KKM transect was comprehended through series of face to face stakeholder consultations (19 in number) in Niamey, Niger so as to identify the various partners working in the country from February 3<sup>rd</sup> 2014 to April 2014. Together with ICRISAT-Kano, Nigeria, 3 stakeholder

operational focus to activities and interactions.

meetings were conducted with a purpose to achieve successful implementation of 2014 research for development activities. As a result, new partnerships were forged and existing partnerships were extended by signing contracts between International Crop Research Institute for Semi-Arid Tropics (ICRISAT) together with national research institutes: Centre for Dryland Agriculture, Bayero University, Nigeria and Institut National de Recherche Agronomique du Niger in Niger thus bringing role of institutions. Building on the already established innovation platforms, at Bebeji (Kano) and Zango (Katsina) in Nigeria and Gazaoua (Maradi) in Niger Republic, these meetings were aimed at review and experience sharing of farmer-problems, opportunities and needs of all stakeholders involved.

#### **1. Research in Innovation Platform Meeting at Bebeji, Kano Nigeria**

In Bebeji, the meeting was held on 29th April, 2014 and was attended by a total of 132 members, out of which 80 were farmers. The members were traditional rulers, scientists from universities, national and international research centres, researchers, extension agents, agrochemical companies, seed companies, processors and women groups. This innovation platform was set up in 2013. The platform was also used for conducting integrated soil fertility management trials and farmer field days. One of the farmers mentioned aphid infestation on and rosette disease in his groundnut crop. To this, expert advice on use of Groundnut varieties Samnut 23, 24 were recommended which are resistant to rosette. Another farmer concern was regarding termites attack on groundnut crop at maturity. A staff of Jubaili Agrotec (Agrochemical Company) informed the farmers about the chemical that when used before planting worked as a preventive measure for control of termites. And these were available in liquid concentrates or as granules. Alhason Nigeria Limited (a commodity broker) also shared the market opportunities available to the farmers for different crops, while Tecni Seeds (Seed Company) and Jubaili Agrotech also presented their products to the participants. The seed and agrochemical companies were challenged to make their products readily available to farmers, especially those in rural areas, while the farmers on the other hand were encouraged to create business linkages between them and the companies to make those inputs easily accessible to them. Farmers liked high yield and early maturing soybean, groundnut, maize and

sorghum varieties given to them in 2013. However, they were displeased because of late delivery of inputs. Apart from that, in mixed farming system context, farmers participation and engagement was

The fodder was not chopped for animal feeding because of lack of awareness. Therefore training need was voiced by the farmers on that aspect. Research intervention on use of Chopper to demonstrate the efficient use of crop residues (stalks and fodder) into forms that can easily be consumed and reduce wastage was felt. Further, women farmer stated they were interested in dual purpose groundnut varieties as the current variety leaves fell, and normally groundnut stover was sold as livestock feed. Based on anecdotal evidence Kamapala a local groundnut variety gave more fodder than grains and women farmers were interested in Kampala seed multiplication.

#### **2. Research in Innovation Platform meeting at Zango**

The innovation meeting at Zango LGA, (Katsina), Nigeria took place on 30th April, 2014 and was attended by various stakeholders including farmers, traditional rulers, scientists from universities, national and international research centres, international researchers, extension agents, agrochemical companies, seed companies, processors and women groups. Innovation platform spearheaded as the officials were elected by all stakeholders. Farmers participatory trials were successfully conducted in some villages and field days were also carried out through which crop varieties and their management practices were introduced to other farmers. Through these field days, farmers developed interest in cultivation of Samnut-24 a groundnut variety which had high demand by the farmers because of the knowledge disseminated about them and their performance. Farmers shared that Samnut-24 variety of groundnut did not record any problem, was high yielding, had good fodder and performed better than their local cultivars. One of the farmers, Mallam Sabiu Ibrahim said he planted Samnut-24 last season and made 6 bags from a bag. He added that he observed in the variety pod formation started at 6 weeks, matured in 72 days and was higher yielding than what his neighbours crops. The farmers continued that he sorted the seeds and used the shrivelled/broken ones to extract oil and obtained about 3 litres of oil from 5 mudus (10 kg). This showed that the variety had high oil content. During the interactive session, Jubaili Agrotec (agro-chemical company) and Green Spore (Seed Company) informed farmers that they can form a group and purchase at ease as a dealer.

sought on use of crop residue. Farmer used crop residue of ground nut, cowpea, sorghum stover as livestock feed.

An agro-dealer connected with Jubaili Agrotech to obtain agrochemicals at cheaper rate. Use of forage chopper demonstration was discussed with farmers as green and dry fodder are not chopped. The farmers however said they feed livestock unchopped stover and use the leftover as fuel. Farmers were advised to try the use of the machine to reduce the space unchopped fodder occupies and they can always keep some stalks for fuel. Further, farmer demanded a chopping machine, which could chop the groundnut and stover because groundnut stover is sold as feed. Training needs identified at Zango; were processing of animal feeds, and general agronomic practices involved in crop production

#### **3. Research in Innovation Platform meeting at Gazaoua**

The IP meeting in Gazaoua, Niger Republic was conducted on the 2nd May, 2014. The participant of meeting were: scientists from Nigeria and INRAN, Niger, Prefect of Gazaoua, traditional rulers, livestock agents, farmers, government officials of agriculture department. The Prefect of Gazaoua –in the meeting pledged their full support as leaders, through government. There was a need of interactions between researchers, farmers, agro-dealers, agrochemical companies, seed companies, etc. In addition to it, there was also a need to elect IP officials in Gazaoua to coordinate all activities. Partnering with, INRAN in 2013 successful millet (5 varieties-HKP-99001, Zatib, 89305, 99001- CT6), sorghum (4 varieties Samba-CF, CF-NR and Kat487), groundnut (2 varieties Samnut-23, Samnut 24) and cowpea (variety-IT99K-573-1-1) trials, community and household surveys were conducted at Gourjia and Milli villages. Farmers also complained of late arrival of inputs like seeds and fertiliser in the last year. Green and dry fodder chopping was also not practiced as reported by the farmers.

#### **4. Research in Innovation Platform Meeting in Kano**

An innovation platform meeting was organised by ICRISAT Nigeria at the Centre for Dryland Agriculture (CDA), Bayero University, Kano, on 5 August 2014. Members participated from, Federal Ministry of Agriculture and Rural Development, the Chairs and Secretaries of Poultry and Sorghum Farmers Associations of Nigeria, Bayero University staff, representatives of Kano State ministries, and the USAID–MARKETS project and Institut National

de la Recherche Agronomique du Niger (INRAN)-Niger. This IP meeting was funded under the collaboration between CGIAR Research Programs on Dryland Systems and on Dryland Cereals. The poultry industry in Nigeria needed about 3 million ton of maize as ingredient for feed, but the

Government representatives, scientists, and farmers felt that Nigeria, the third largest sorghum producer in the world, to diversify the use of sorghum to increase commercial interest one among which is the use of sorghum grains in poultry feeds. The meeting was organized under the sorghum transformation value chain of the Agricultural Transformation Agenda. Members of Nigeria's House of Representatives recently undertook a study tour to Sudan where they found that most of the poultry feed was sorghum-based. It was expected that the production of sorghum in Nigeria would increase from the work of ICRISAT and other national partners. IP meetings participants agreed that the potential demand of sorghum for poultry feed would absorb the increased production. The Team leader of the Poultry Value Chain briefed the participants on the need for a substitute to maize while Vice Chair of the House Committee on Agriculture, shared the details of the study tour to Sudan. ICRISAT- Nigeria made a presentation on the pros and cons of the use of sorghum in poultry feed while Institut National de la Recherche Agronomique du Niger (INRAN)-Niamey presented on similar activities in Niger.

#### **5. Research in Innovation platform meeting- Crop-livestock training**

Training needs were assessed in the previous 4 IP meetings therefore an international crop –livestock training was organised from 27th to 31st October 2014 by ICRISAT West and Central Africa (Niger and Nigeria) along with Centre for Dryland Agriculture, Bayero University at Kano, Nigeria. Stakeholders were engaged using innovation platforms with an objective to train the trainers in use of food-feed crop combinations so as to address seasonality, produce more quality, quantity grains and fodder, improving soil fertility and efficient use of local available materials for livestock feeding for increase in income of stakeholders. A total of 41 participants (11 women, 30 men) from 5 countries representing 6 universities from Benin, Niger, Mali, Burkina Faso and Nigeria, national and international institutes like –Institute for Agricultural Research (IAR), International Livestock Research Institute (ILRI), Mercy Corps International, non-governmental organization– AMEDD Mali, SHARE-USAID Sokoto, Women Farmers Advancement Network (WOFAN,

country produced only 2 million ton. Stakeholders were engaged to explore the use of sorghum in place of maize in poultry feed, making poultry feed cheaper, but also overcome the problem of short supply of maize.

Kano) and Public departments like- Federal Ministry of Agriculture and Rural Development (FMARD), Kano State Agricultural and Rural Development Authority, National Agricultural Extension Research and Liaison services (NAERLS), and private farms like- Rahama Integrated Farms, Kano . participated and contributed in the training. The take home messages as reported by the participants were: i) demand for poultry products is fairly inelastic as such, local production should be enhanced; ii) sorghum should be promoted as substitute for maize as a source of energy because of its availability, accessibility and reduced cost at some periods of the year; iii) crop residues storage and processing should be encouraged to address seasonality issues of feeds; iv) use of mobile choppers, grinders should be used to reduce drudgery and for efficient utilization of crop residues and forages; v) research findings should be disseminated through innovation platform; vi) need for trainings of extension agents and encouraging women to engage in extension activities in crop-livestock activities.

It is evident by above mentioned examples that research and innovation platforms can engage stakeholders for a win –win situation. Research strengthens innovation platforms: researchers work is better informed, more systematic and more authentic. Platforms strengthen research by feedback so that it is more applied, more realistic, more acceptable, and more likely to be adopted (Lema and Schut et al 2013). Researchers contribute to innovation platforms through traditional research by bridging knowledge gaps, b) by knowledge management and action research: through: identifying shared objectives, co- creating knowledge jointly, learning together, documenting processes, best practices, communicating results and capacity strengthening of the platform members; c) enabling environment: by enabling technical, institutional and policy factors, researchers can support platform members in influencing policy makers and securing funds. However, there are risks associated with innovation platforms for researchers for example compared to other platform members, researchers dominate platform activities owing to education, high social status and communication. Not only that research

programs have fixed budgets, researchers are required to complete work done on time while innovation platforms are more participatory, take more time which causes conflicts on researchers time and platforms aims. Researchers may not allocate staff time and resources to activities which they think are less important.

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**CONCLUSION:**

Innovation platforms are worthwhile ideas in mixed – farming context because positive change can engage stakeholders for a win –win situation. Innovation platforms can be instrumental for need based- context fit quality research for development and are dependent on need and motivations of stakeholders.

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