



Research for Development (R4D) platform facilitation and climate change sensitization in Africa RISING Ghana sites

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Produced by
Published by

CSIR, Ghana
International Institute of Tropical Agriculture

January 2017

www.africa-rising.net



The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government's Feed the Future initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three regional projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads the program's monitoring, evaluation, and impact assessment. <http://africa-rising.net/>



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This document was made possible with support from the American people delivered through the United States Agency for International Development (USAID) as part of the US Government's Feed the Future Initiative. The contents are the responsibility of the producing organization and do not necessarily reflect the opinion of USAID or the US Government.

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Acknowledgements

I wish to express my gratitude to Dr Asamoah Larbi, Coordinator of the project and representative of IITA in Ghana and his team in the regions for the confidence reposed in me by entrusting me with this assignment and providing the administrative and logistical support to make the training and sensitization event successful. The handouts, including the reading material provided to participants, were compiled from various project sources and are hereby deeply acknowledged. The immense output generated during the practice sessions of the workshop were largely due to the hard work and depth of understanding of the issues by the platform participants and are here duly acknowledged for their cooperation. I sincerely thank them and believe my reliance on their future cooperation to “walk the talk” in this report will not be misplaced.

Executive summary

This report provides a summary of several two-day training workshops on R4D platform management and climate change sensitization held for platform executive members from Bolgatanga, Upper East Region. Workshops for each region were executed on 10 and 11 August at the EX-TEE Crystal Hotel in Bolgatanga, Upper East Region, on 13 to 14 August at Sem-B Lodge, Wa, and on 17 to 18 August at the IITA conference room, Tamale.

In order to achieve a bottom-up and demand-driven approach to improve livelihoods addressing hunger, nutrition, and food insecurity in northern Ghana, the Africa Rising Ghana project facilitated the establishment of six district-level R4D platforms involving over 25 communities, in the Bongo District and Kassena-Nankana Municipality of the Upper East Region; Wa West and Nadowli-Kaleo districts of the Upper West Region, and Tolon and Sevelugu Municipality in the Northern Region based on the Innovation Platform (IP) concept to deliver needed change. The success and sustainable functioning of these platforms to bring about the desired change outcomes required that capacities of actors be strengthened. A training workshop commissioned by the project's management was appropriate and in tandem with earlier recommendations by the project self-evaluation mission of 2014. Three separate training workshops were held in the Bolgatanga, Wa, and Tamale locations from 10 to 18 August 2015 with the objectives to deliver needed facilitation outputs to capacitate the R4D platforms for effective performance. The workshops also served to sensitize and to create awareness on climate and climate-change variability which is a cross-cutting uncertainty affecting research and development at all levels. Presentations and participatory talks backed by video shows and group breakout sessions were tools employed.

A total of over 57 platform representatives (including eight females) were trained during the period. The practical sessions in the training modules assisted the various platforms to appreciate their structure, conduct, and performance and in the process define the objectives and functional task areas of the platforms. In a participatory joint learning, platform participants shared their views on what was needed to be put in place for the success of the platforms, actions initiated since the launch of the platforms, and what could be done to ensure they do not collapse.

The R4D platforms are change vehicles and so participants were taken through aspects of change management to discover reasons why people resist change and how to manage change resistance in order to sensitively engage the multi-stakeholder groups on the platforms. Various facilitation tools including sensitization and events cycle planning were learned by participants.

Climate change effects observed by the participants with an average age of over 45 years were identified and listed for the various platform locations. Participants were sensitized to derive the vernacular of common terms such as climate change, adaptation, etc. Human practices likely contributing to climate change variability were listed and the corresponding actions to reduce the effects suggested for implementation.

On Lickert's scale of 1–5 participants rated the workshop with a mean score of 4.5 and were between good and very good in qualitative terms. Their comments appeared to call for more of such training to strengthen platform capacities. Various training needs were therefore identified for consideration by project management.

Introduction

Agriculture still contributes up to 80% to employment and more than 30% to GDP in SSA (Adekunle and Fatunbi 2012). The sector has attracted the attention of development agencies and policy makers as a major area of intervention to improve food security especially in developing countries under the serious threat of climate and climate change variability effects. There is empirical evidence that the option of technology-led productivity increases alone have failed to bring sustainable livelihood changes so far, especially in SSA (Huis et al. 2007; Hounkonnou et al. 2012).

A recent trend in scientific and agricultural development approaches shows a shift from a linear transfer of technology model towards a systems thinking approach which incorporates technological, organizational, socioeconomic, and institutional innovations. Few approaches that have come up promising to deliver on participatory and inclusive problem diagnosis, generation of technical and socio-institutional solutions, and information sharing and learning enhancing change outcomes in innovation and productivity of smallholder farmers include the integrated agricultural research for development (IAR4D) and value chain innovation platforms (IPs) and the convergence of science-strengthening innovation systems (CoS-SIS).

About the Africa RISING-Ghana project

The Africa RISING-Ghana project of the International Institute of Tropical Agriculture (IITA) on “Sustainable Intensification of Cereal-based Farming Systems in the Guinea Savannah Zone” that seeks to address hunger, food, and nutrition insecurity through bottom-up and demand-driven approach programming to improve livelihoods has facilitated the establishment of six district level R4D platforms involving over 25 communities in the Bongo District and Kassena–Nankana Municipality of the Upper East Region; Wa West and Nadowli-Kaleo districts of the Upper West Region; and Tolon and Sevelugu Municipality in the Northern Region based on the Innovation Platform (IP) concept to deliver needed change. However, the success and sustainable functioning of these platforms to bring about the desired change outcomes appeared to hinge on strengthening the capacities of actors to adequately facilitate the platform processes. The request for this training workshop by project management was appropriate and in tandem with earlier recommendations by the project self-evaluation mission of 2014. The training workshops therefore sought to deliver certain outputs to capacitate the R4D platforms for effective performance. The workshops were also to create awareness on climate and climate change which is a cross-cutting uncertainty affecting research and development at all levels.

Workshop objective(s)

- To train about 20 platform members in each of the three project regions (Upper East, Upper West, and Northern Regions) in Ghana to improve knowledge and facilitation skills of the R4D platforms in the Africa Rising-Ghana project.
- To sensitize a total of about 50 platform member-representatives on climate change and climate-smart agriculture (CSA) in the three project regions.

Approach and instruments

Meeting with project management

A meeting was held on 2 August 2015 with the Program Coordinator for clarification and understanding of the task. Project documents on the R4D platforms in the districts were also made available to the resource person for study to have a clear picture of the structure of the platforms. A concept note was then developed by the resource person detailing out the expected outputs, the necessary activities, including the training duration and submitted to management.

Development of modules, sessions, and training materials

Three training, facilitation, and sensitization modules treated in two sessions per module with the relevant participatory facilitation tools were developed and used for the purpose. The design was grounded in the principle of “theory to practice for action” model. Plenary presentations and participatory talks were employed by the resource person to engage participants in the training. Group breakout sessions and reporting back at plenary were used for group exercises to practice thereby enhancing interaction, knowledge, and skills learning. A session lasted for up to 1.5 hours including 15- to 20-minute exercises in group work. Game plays (sensitization event cycle) were introduced where appropriate to commit more brain image processing for effective learning.

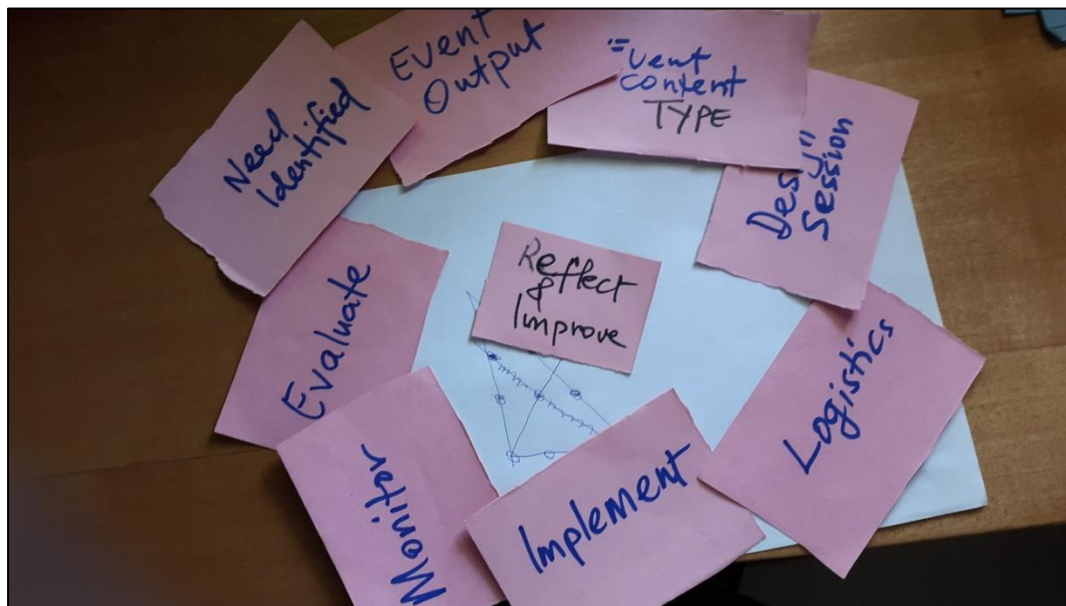


Figure 1. Game on Event Cycle.

A video entitled “2 degrees up” (courtesy CCAFS partnerships) was used for climate change sensitization. Slides and the use of the card system were other supporting aids for visualization.

Reading materials on the subject from various literature sources (acknowledged) including the resource person’s own training notes on change management at CORAF/WECARD and other project works were compiled and supplied to participants during the training as handouts. Other related handouts on climate change generated by the Ghana Climate Change Agriculture and Food Security Science policy dialogue platform were also provided to the participants.

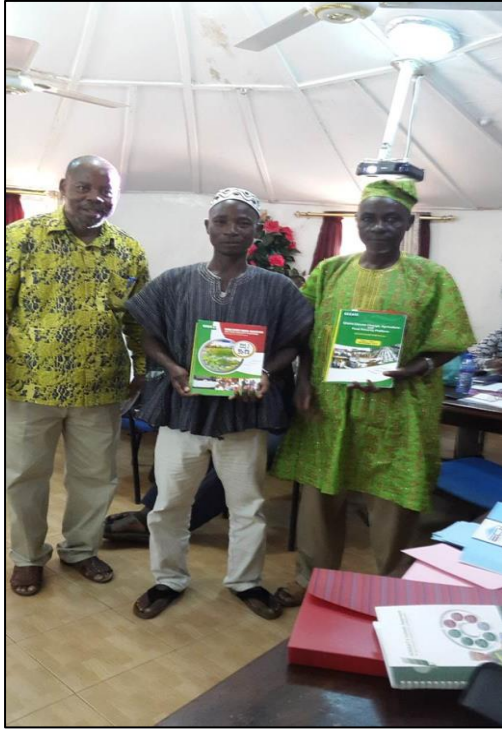


Figure 2. Reading materials presented to participants by the Trainer/Facilitator.

The planned two-day workshops for each region were executed on 10 and 11 August at the EX-TEE Crystal Hotel in Bolgatanga, Upper East Region; from 13 to 14 August at Sem-B Lodge, Wa; and from 17 to 18 August at the IITA conference room, Tamale. A common workshop program was developed for each meeting to guide the proceedings (Appendix 1).

Target participants

A total of 57 participants from the six districts largely made up of R4D Executive committee members and agriculture extension agents (AEAs) were recorded for the three separate workshops organized. Out of that number eight were female participants. The list of participants is provided in Appendix 2.

A daily barometer test was put in place to monitor the mode of participants. At the close of Day 2, participants evaluated the workshop by filling an evaluation form developed by the resource person and the project management team (Appendix 3). The completed evaluation sheets were analyzed for scores on the Lickert scale using simple arithmetic means and the frequencies of responses for the various variables expressed in percentages.

Formulation of the report

This report is deposited as the required training deliverable. It is composed of four main chapters with various sub-sections and is meant to be reader friendly. Chapter 1 provides the introductory background leading to a statement of the training objectives. Chapter 2 describes the methods and instruments deployed in the training of the targeted participants. Chapter 3 provides relevant result outputs delivered by participants under their district platform banners during the training sessions which may be of practical application significance on the platforms. This includes the evaluation outcome by the participants. A conclusion is made with some recommendations in Chapter 4 for the attention of project management.

Result and outputs

The separate training and sensitization workshops at the various locations were usually preceded by a welcome message and a statement of the purpose of the workshop from Dr Asamoah Larbi, Coordinator of the project and representative of IITA in Ghana.

Bongo District and Kassena-Nankana Municipality of Upper East Region (UER)

Platforms unveiled their expectations

The Bongo and Kassena-Nankana Municipality R4D platform participants were then guided by the trainer/facilitator to unveil their expectations in separate group discussions. These are summarized and presented in Table 1.

Table 1. Workshop expectations from Bongo and Kassena-Nankana platform participants.

Type of Expectation	Bongo	Kassena-Nankana Municipality
What should happen	To understand the core roles and functions for effective facilitation of platforms	Well equipped with our roles as platform members
	Capacities to be built	Be able to implement what would be learnt here
	Understand how executive members will be resourced for effective facilitation	Able to identify and evaluate demand-driven technologies for sustainable agricultural production
What should not happen	Participants to leave without a fair understanding of core roles	Participants to leave here without knowing their roles
	Participants to leave here unhappy	Participants leaving while workshop is in progress

Joint learning and sharing about R4D platforms

Platform participants in their respective groupings were then facilitated in a joint learning and sharing activity to describe the objectives and activities carried out so far by the R4D platforms since their inception in July–September 2014. The platforms in the workshop also explored needed actions that could enhance the success of the platforms.

Kassena-Nankana Municipality R4D Platform objectives

- To address food security in the intervention communities by intensifying and sustaining agricultural production.
- To empower the rural folks, especially women, in the intervention communities with entrepreneurial skills.

Activities undertaken by platform so far

- Have been able to hold several meetings to strategize on activities to undertake.
- A constitution was drafted to guide operations of platform.
- A Bank Account was opened for the Platform.

Actions needed for platform to be successful

- More meetings at community level for capacity building.
- Resource platforms to make meetings effective.
- Sensitization of platform members.

Any fears of platform not being successful/collapsing?

- Failure of members to meet regularly
- Inadequate resources to the platform
- Unstable weather conditions

Bongo R4D platform objectives

- To try new technologies
- To develop the smallholder farmer
- To achieve food security

Activities undertaken by platform so far

- Have been able to hold five Executive and Committee meetings
- A bank account was opened for the platform

Actions needed for platform to be successful

- Capacity building of members
- Know our clear objectives and functions
- Set targets for the platform committee

Factors of platform not being successful/collapsing

- Inadequate meetings
- Inadequate resources to the platform, e.g., funds
- Lack of communication and commitment

Knowledge and skills gained

In Module 1 - Agricultural Development and Innovation for Change, a theoretical basis was laid for participants to learn in two separate sessions about participatory approaches in agricultural innovation and understanding change management for R4D innovation. During the session on participatory approaches in agricultural innovation participants used the definition of innovation platforms (IP) given by FARA to derive some functional conduct priority areas for their R4D platforms facilitation.

Bongo and Kassena-Nankana municipality platforms identify facilitation task function areas

Group 1

1. Exchange knowledge M
2. Take action to solve a common problem M
3. Participatory diagnosis of problems H

Group 2

1. Participatory diagnosis of problems H
2. Joint exploration of opportunities H
3. Investigation of solutions H
4. Mobilization of heterogeneous actors together to take action H
5. Facilitate interaction and learning among stakeholders L

(L = Low priority, M = Medium, and H = High priority)

R4D Platforms and change management

Learning about change management for R4D was considered by some participants the high point of the workshop and was meant to forcibly draw their attention to the fact that the project was looking for a change in the way agriculture is done in order to bring sustainable

livelihoods and benefits to people while maintaining a healthy environment. There is always a kind of resistance that goes with change and participants needed to understand this, particularly in facilitating multi-stakeholder platforms of people with different backgrounds. Participants appreciated why change management was necessary and demonstrated it in their group exercises during the session by delineating reasons why some people will resist change and how to manage resistance in the change process.

Reasons why people resist change:

- Used to the norm
- Do not understand the issue
- Fear of the unknown
- Not cost effective
- Difficult to move out of comfort zone
- Because of risks
- Feel they are doing right thing
- Because of cultural values

Managing stakeholder change resistance involves:

- Tolerance
- Sensitization to create awareness
- Think outside the box
- Let sleeping dogs lie
- Dialogue
- Examine the change approach
- Change position

Learning stakeholder facilitation tools

Module 2 - Stakeholder Facilitation Techniques and Tools for Change, took participants through communication, information sharing and learning, and how to use the needed facilitation tools to further enhance their skills for multi-stakeholder platform conduct facilitation. Indeed participants came up with facilitation, the tools, and communication methods as some of the high points in the workshop. Participants were taught the two models of communication to understand how beneficial the interactive model is to a platform compared with the sender–receiver model which may not bring about innovation. Participants were taken through the session to demonstrate the need for multi-stakeholder sensitization in all of these. Employing the “Listen and Draw” game participants produced very diverse images/pictures and drew lessons why sensitization was crucial for the work of the platforms.

Why stakeholder sensitization is important to participants

- Different levels of skills
- Perceptions differ
- Different understanding of issues
- Different listening ability
- Different imagination
- Interpret things differently
- Not taking to instructions
- Others are talented
- Poor communication source

The “Diamond frame” (see reading material) was introduced to participants as a guide in facilitation of platforms and when a set of tools could be brought to play in the process. The Event Cycle tool was practiced in the group exercises where participants used the tool to plan a sensitization event hypothetically to sensitize relevant district and regional level stakeholders on the sustainability issue of the R4D platforms. The groups failed to generate output due to time limitations. However, the relevance of the tool for planning platform activities in the project cycle was emphasized because of the practical implications for the interaction space of platform executive members and the district level committee meetings, community workshops, conferences, field tours, etc. It is instructive to align these with the project cycle of getting started, the problem diagnosis, looking for things to try, design and planning actions, trying out solutions (farmer experimentation), sharing the results, and keeping the process up (evaluation, re-planning, advocacy, etc.) as experienced in participatory innovation development.

Other facilitation tools participants were guided to recall within the session time are provided below.

Participants recall of PRA tools

- Focus group discussions
- Transect walk
- Community map
- Problem tree
- Participatory platform
- Interview
- Historical timelines
- Pair wise ranking
- Gender analysis

Communicating climate change

Module 3 of the training - Climate Change and Agricultural Development, examined the topics of climate change sensitization and learning about Climate-smart agriculture (CSA) in two separate sessions. A test on the National Climate Change Policy (NCCP) was carried out to gauge awareness. Two out of the 13 participants had heard of the policy. None had seen the document. The document was brought to the session for participants to see and hold. A challenging exercise was performed by participants providing the vernacular of key words and phrases in usage such as climate, climate change, adaptation, mitigation, resilience, and vulnerability. The Gurune and Kassem dialects used for sensitization are provided in Table 2.

English Language	Local Category	
	Gurune	Kassem
Climate	<i>Tingou yelaa</i>	<i>We yuu or We yuu de tinga banga</i>
Climate change	<i>Tingou lebigere</i>	<i>We yuu lera or We yuu de tiga banga leerim</i>
Adaptation	<i>Yelsayre ti to wan enge ti tonga tani da daa tu</i>	<i>Lerin se en se ken se ko jougem</i>
Mitigation	<i>Ti wan eng seeme gu ti gou lebigere</i>	<i>Mabino na mo chi toi se ko kwe to</i>
Resilience	<i>Triike gu tingou lebirege or Ti tigre</i>	<i>Kuba kore jam</i>
Vulnerability	<i>Torrako/Torigo or Nora-ma</i>	<i>Bona or Nabona</i>

Climate change effects as identified by participants

Documenting climate change happenings in the UER was facilitated as part of the group exercise for participants to recall from their own experiences. The average age of workshop participants was 46 years with a range of 27–59 years. The following list was generated by participants.

- Drought in 2014 and 2015
- Late onset of the rains likely to reduce their Nara yields
- High temperatures in March–April
- Nara crop now planted in June and not in May month. In the Nabdam area the early millet in 1988 used to be planted 4th week of March. But now it is planted in May
- Short rain periods
- Reduced fish stocks in the rivers
- Dams no longer full to capacity
- Reduced yields of tree crops, e.g., mango
- Strong winds with dust and damage to roofs of dwellings
- Guinea fowl dying from diseases and pests
- Armyworms in 2013 in the Zebilla area
- Soil degradation

The video “2 degrees up” that talks about climate change and agriculture in the Upper West Region of Ghana (courtesy CCAFS) was found to be helpful in the sensitization process as it enabled the participants to identify the socioeconomic, farm level, and off-farm impact of climate change in the zone (Table 3).

Table 3. Climate change impacts identified by platform participants from the Upper East Region.

Social	Farm level	Off-farm
<ul style="list-style-type: none"> • Poverty • Ageing • Hunger • Poor health • Poor housing • No happiness 	<ul style="list-style-type: none"> • Poor soils/degradation • Floods • Low quality grasslands • Poor crop yields • Low rainfall • High temperatures • Crop and livestock diseases and pests • Low fish catch • Low fruiting in trees • Changing production systems 	<ul style="list-style-type: none"> • Poor housing • Low quality traditional diets

Areas for strengthening community adaptive capacities

Participants in their various platform groups were facilitated as part of the sensitization process to identify negative practices in the communities likely contributing to climate change variability in their locations and suggest which actions, if put in place, could enhance the adaptive capacities of the community. The group work output is presented in Tables 4 and 5 for the Bongo and Kassena-Nankana platforms, respectively.

Table 4. Practices contributing to climate change variability in Bongo District and suggested activities for strengthening community adaptive capacities.

Bad practice	Activity to counter effects of climate change
• Indiscriminate tree felling	Agro-forestation
	Law enforcement
• Bush burning	Set up fire fighting volunteer groups
	Enforce laws on bush burning
• Continuous cropping	Promote fallow cropping
	Promote use of manure
• Sand winning	Sensitization
	Enforce laws
• Galamsay (Illegal mining)	Sensitization
	Enforce laws

Table 5. Practices contributing to climate change variability in Kassena-Nankana Municipality and suggested activities for strengthening community adaptive capacities.

Bad practice	Activity to counter effects of climate change
• Indiscriminate tree felling	Planting trees and intensive education
	Setting by-laws to deal with culprits
• Bush burning	Set up and train fire fighting volunteer groups
	Put in place by-laws on bush burning
	Intensive sensitization
• Improper land preparation for farming	Train farmers on proper land preparation methods
• Improper use of fertilizers and insecticides	Sensitization on negative effects of inorganic fertilizers
	Train farmers on compost production
• Burning of plastic	Sensitization on harmful effects
	Educate on recycling of plastics

Daily Barometer Test of participants

This was introduced by the facilitator to gauge the mode of participants by the close of the workshop day. Participants were each given a cluster sticker to indicate whether spirits were low, medium, or high. The result for Day 1 is shown in Figure 1 and suggests that most participants still appeared to be in high spirits at the close of the day given the assumption that they were either in high or low spirits before the start of the workshop.

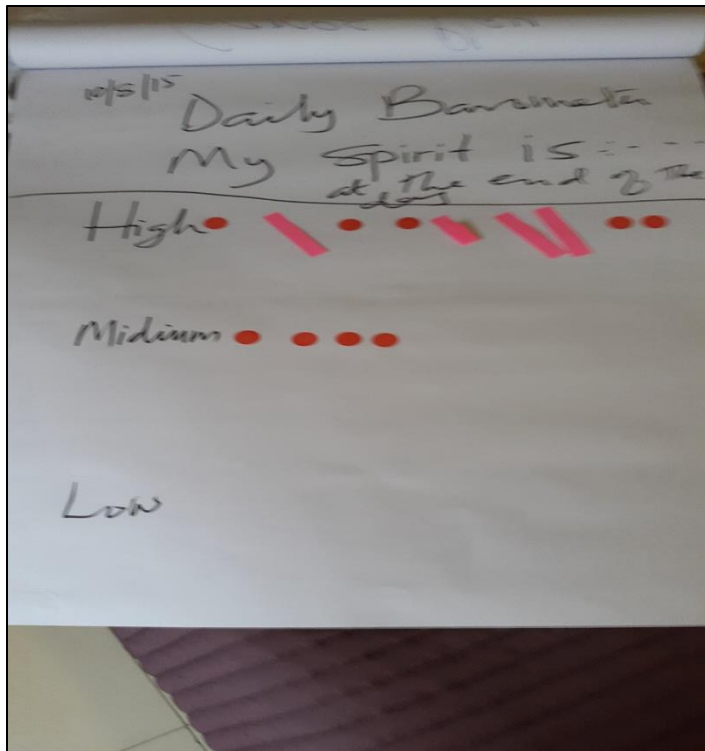


Figure 3. Daily barometer of participants, Upper East Region.

Perceptions and views of participants

A review with participants showed all expectations were addressed at the close of Day 2 of the training.

The filled evaluation sheets received from 14 respondents were analyzed for overall assessment, the willingness to apply knowledge and skills to the benefit of the platform as well as assessment of the trainer/facilitator on Lickert's scale of 1–5. The mean score values were 4.45 for the overall assessment of the workshop, 4.69 for the willingness to apply the knowledge and skills for the benefit of the platform, and 4.57 for the performance of the trainer/facilitator. The willingness to apply the knowledge and skills gained was preceded by about 67% of the 12 entries who totally agreed with the statement that “I have learned and improved my knowledge and skills in this workshop”. Thirty-three percent agreed with the statement. None showed any form of disagreement.

Areas requiring further training as well as the high and low points of the workshop as indicated by the participants are represented in Table 6.

Table 6. Platform representatives (n = 14) indicate low and high points of workshop and suggest areas for further training.

Workshop High Point	Workshop Low Point	Training Need
Group work	–	Negotiation skills and leadership
Facilitation	–	Facilitation
Change management	–	Program implementation and monitoring
Climate-smart agriculture	Shortage of hand-outs	Climate change and food security
Tools for facilitation	–	Proposal development and report writing
Change management	Climate-smart agriculture	Program implementation and monitoring
Communication methods	–	Sustainability
Innovation in agricultural development	Climate-smart agriculture	–
Climate change	–	Communication skills
Climate change	–	Climate-smart agriculture
Facilitation	Vernacular/Interpretation	–
All the topics	–	Need for backstopping
Climate-smart agriculture	–	Food security and climate change
District level stakeholder plan	Communication sensitization	Communication sensitization

Comments made by participants in the evaluation sheet about the workshop in general are presented in Box 1.

Box 1. Comments about the workshop in general by participants (n = 12).

- Very good
- Short notice
- Very good but we need more from time to time
- We need more of them
- The content was relevant to us
- More of this workshop
- Everything went on well
- The facilitator is patient and accommodative and that made the workshop a success
- Very good and I wish we have more of such workshops in future
- We need resources to be able to facilitate R4D activities
- Participants have not been told how their T & T is
- Workshop should have been residential and one week and not 2 days

Wa West and Nadowli-Kaleo District Platforms, Upper West Region (UWR)

Platforms unveiled their expectations

Participants from the Wa West and Nadowli-Kaleo R4D platforms were facilitated to unveil their expectations in separate group discussions. These are presented in Table 7.

Table 7. Workshop expectations from Nadowli-Kaleo and Wa West platform participants.

Type of expectation	Nadowli-Kaleo	Wa West
What should happen	To understand the roles for R4D members of platform	The R4D members roles will be made clearer
	Strategies to strengthen R4D	Share knowledge on climate change effect on agriculture
	Identify activities on climate change to implement in the five intervention communities	Activities for next year would be better planned with active involvement of R4D
What should not happen	No interruption of meeting	No meeting within meeting
	No meeting within meeting	No ringing of phones
	No phone ringing or making calls	No disagreement on issues

Joint learning and sharing about R4D platforms

Platform participants in their respective groupings were then facilitated in a joint learning and sharing activity to describe the objectives and activities carried out so far by the R4D platforms since their inception in 2014. The platforms in the workshop also explored needed actions that could enhance the success of their platforms.

Nadowli-Kaleo R4D Platform objectives

- To enhance coordination and implementation of activities of the various project components.
- To enhance grassroots participation in the implementing communities.

Actions needed for platform to be successful

- Regular R4D meetings to discuss project implementation.
- Active participation of platform members and regular monitoring.

Activities undertaken by platform so far

- Have been able to hold two meetings
- R4D platforms formation in all implementing communities
- District R4D inaugurated and Bank Account was opened for the Platform

Any fears of platform not being successful/collapsing?

- Non-commitment of members
- Misuse of resources

Wa West R4D platform objectives

- To identify the research needs of the beneficiary communities
- To ensure sustainability of the interventions in the beneficiary communities

Actions needed for platform to be successful

- Regular meetings to discuss activities
- Proper planning and timing of activities

Activities undertaken by platform so far

- Have been able to hold first platform meeting
- Drafted constitution and adopted by members
- Monitored AEA activities
- Community review meeting of interventions for the previous year
- Linked community beneficiaries to tractor service providers
- Bank Account opening in progress

Factors of platform not being successful/collapsing

- Platform not working as a team
- Platforms not adequately resourced

Knowledge and skills gained

In Module 1 - Agricultural development and Innovation for Change, a theoretical basis was laid for participants to learn in two separate sessions about participatory approaches in agricultural innovation and understanding change management for R4D innovation. During the session on participatory approaches in agricultural innovation participants used the definition of innovation platforms (IP) given by FARA and ILRI to derive some functional conduct priority areas for their R4D platforms facilitation.

Platforms identify facilitation task function areas for Upper West

Nadowli-Kaleo:

- Facilitate interaction among stakeholders H
- Joint exploration of opportunities M
- Participatory diagnosis of problems H
- Investigation of solutions H
- Take action to solve common problem H

(Low = L, Medium = M, High = H priority)

Wa West:

- Take action to solve a common problem M
- Targeted commodity L
- Exchange Knowledge H
- Mobilization of heterogeneous actors together to take action H
- Facilitate interaction and learning among stakeholders H

R4D Platforms and change management

Learning about change management for R4D was considered by some participants the high point of the workshop and was meant to forcibly draw their attention to the fact that the project was looking for a change in the way agriculture is done in order to bring sustainable livelihoods and benefits to people while maintaining a healthy environment. There is always a kind of resistance that goes with change and participants needed to understand this, particularly in facilitating multi-stakeholder platforms of people with different backgrounds. Participants appreciated why change management was necessary and demonstrated it in their group exercises during the session by delineating reasons why some people will resist change and how to manage resistance in the change process.

Reasons for resistance to change, UWR participants

- Fear of the unknown
- Used to the present situation
- Cultural values
- Cost
- Conservative
- Labor intensive
- Inappropriate approach by change agent
- Lack of knowledge
- Religious beliefs
- Wrong timing of change being introduced

Managing stakeholder resistance to change

- Sensitize
- Educate/Demonstrate
- Proper timing
- Better facilitation
- Plan activities
- Do it within means
- Involving the beneficiary
- Observe and evaluate
- Patience
- Exchange visits/seeing is believing

Learning stakeholder facilitation tools

Similarly, Module 2 - Stakeholder Facilitation Techniques and Tools for Change, took participants through communication, information sharing and learning, and the needed facilitation tools used to further enhance their skills for multi-stakeholder platform conduct facilitation. Indeed participants came up with facilitation, the tools, and communication methods as some of the high points in the workshop. Participants were taught the two models of communication to understand how the interactive model was more beneficial to a platform than the sender–receiver model which may not bring about innovation. Participants were taken through the session to demonstrate the need for multi-stakeholder sensitization in all of these. Employing the “Listen and Draw” game participants produced very diverse images/pictures and drew lessons why sensitization was crucial for the work of the platforms.

Why stakeholder sensitization is important to participants

- Different understanding of issues
- Impatience of people
- Assumptions
- Interpretation
- Lack skills
- Different location/circumstances
- Lack knowledge
- Source of information

The “Diamond frame” (see reading material) was introduced to participants as a guide in facilitation of platforms and when a set of tools could be brought to play in the process. The

Event Cycle tool was practiced in the group exercises where participants used the tool to plan an event hypothetically to sensitize relevant district and regional level stakeholders on the sustainability issue of the R4D platforms. The relevance of the tool for planning platform activities in the project cycle was emphasized because of the practical implications for the interaction space of platform executive members and the district level committee meetings, community workshops, conferences, field tours, etc. It is instructive to align this with the project cycle of getting started, the problem diagnosis, looking for things to try, design and plans, trying out solutions (farmer experimentation), sharing the results, and keeping the process up (evaluation, re-planning, advocacy, etc.) as experienced in participatory innovation development.

Other facilitation tools participants were guided to recall during the session time are provided below.

Participants recall PRA tools

- Focus group discussion
- Key informant interviews
- Transect walk
- Community mapping
- Ranking (matrix, pair wise)
- Wealth ranking
- Resource flow map
- Problem tree analysis

Communicating climate change

Module 3 of the training - Climate Change and Agricultural Development, examined the topics of climate change sensitization and learning about Climate-smart agriculture (CSA) in two separate sessions. There was a test on the National Climate Change Policy (NCCP) to gauge awareness. One out of the 18 participants had heard of the policy, but none had seen the document. The document was brought to the session for participants to see and hold. A challenging exercise was performed by participants providing the vernacular of key words and phrases in usage such as climate, climate change, adaptation, mitigation, resilience, and vulnerability. The Dagari dialect used for sensitization is provided in Table 8.

Table 8. Climate change sensitization in Dagari dialects.

English	Local category	
	Nadowli-Kaleo	Wa West
Climate	Saluoni	A zie
Climate change	Saluoni liebu	Zilieb
Adaptation	Menga lenbu	Segruu chaari zilieb
Mitigation	Maalegu	Segrigu zie liebo
Resilience	Menga nyogbu	Zilieb tuofu/varo
Vulnerability	Bataa eebo	Zilieb betuofu/beter ieb

Climate change effects as identified by participants

Documenting climate change happenings in the UWR was facilitated as part of the group exercise for participants to recall their own experiences. The average age of workshop participants was 45 years representing a generation and over who could speak on climate change issues. The following list was generated by participants.

- Drought prolonged in 2007 and the past 2 years. The first and second weeks of July is the normal short drought but now it extends to August.

- Rainfall pattern unpredictable with downpour at times in November and December, which is unexpected
- Late onset of the rains. April–May is the norm but rain now starts in July.
- Localized distribution of rainfall
- Floods in 2007.

The video “2 degrees up”, which talks about climate change and agriculture in the Upper West Region of Ghana (courtesy CCAFS) was shown to participants and found to be helpful in the sensitization process as it enabled them to identify from the video the socioeconomic, farm level, and off-farm impacts of climate change in the zone (Table 9).

Table 9. Climate change impacts identified by platform participants from the Upper West Region.

Social	Farm level	Off-farm
<ul style="list-style-type: none"> • Poverty • Migration • Poor source of drinking water • Poor road accessibility • Destruction of housing • Hunger 	<ul style="list-style-type: none"> • Moldy crop produce • Low crop yields • Introduction of new crop varieties • Drought • Changing production systems to small ruminants 	<ul style="list-style-type: none"> • Dry season gardening • Trading/Marketing

Areas for strengthening community adaptive capacities

Participants in their various platform groups were enabled as part of the sensitization process to identify negative practices in the communities likely contributing to climate change variability in their locations and suggesting actions that could be put in place to enhance the adaptive capacities of community. The group work output is presented in Tables 10 and 11 for the Nadowli-Kaleo and Wa West platforms, respectively.

Table 10. Practices contributing to climate change variability in Nadowli-Kaleo District and suggested activities to the counter effects .

Bad practice	Activity to counter the effects
Bush burning	Sensitize chiefs and community members
	Form fire fighting volunteers in communities
Indiscriminate tree felling	Sensitization against tree felling and promote tree planting
	Facilitate establishment of tree nurseries
Charcoal burning	Promote woodlot establishment
	Community sensitization
Galamsay (illegal mining)/surface mining	Sensitization of communities on effects of mining
Sand winning	Sensitization on need to reclaim the land
Bad farming practices – burning crop residues, ploughing along the slope	Intensify extension education to farmers on, e.g., ploughing across slopes, bonding of fields, and use of crop residues

Table 11. Practices contributing to climate change variability in Wa West and suggested activities to check effects.

Bad Practice	Activity to counter effect
Improper farming practices	Sensitization and education on minimum tillage and agroforestry practices
Charcoal burning	Promote alternative livelihoods
Indiscriminate tree felling	Promote alternative livelihoods
	Put in place by-laws on bush burning
	Intensive sensitization
Bush burning	Form anti-bush burning groups
Misuse of agrochemicals	Sensitize and train farmers on negative effects of and use of agrochemicals
Destruction of young seedlings and shrubs	Train on natural regeneration of trees
Overgrazing	Sensitize District Assembly on need for land use management and by-laws to guide operation of grazing lands
Dumping waste	Platform sensitization for the proper disposal of waste

Learning about Climate-smart agriculture

Component practices and technologies identified in Nadowli-Kaleo District.

- A twenty thousand capacity tree seedling nursery at Vogoni community.
- A 16- and 5-hectares enrichment tree planting plot at Vogoni and Zupri, respectively.
- A 2-ha buffer zone protection with mango trees at Sankana.
- Forty volunteers trained in rain gauge reading and 20 rain gauges installed in 20 communities for data collection.
- Soil improvement interventions in 13 communities.
- Ghana Social Opportunities Programme (GSOP) activities to reduce deforestation.
- Training of farmers in 40 communities on proper use of agrochemicals.

Existing conditions favoring CSA practices in Nadowli-Kaleo District

- Available land
- Available water bodies in some communities
- Labor is available
- Availability of tree seedlings
- Legislation/Laws/Policies

Existing conditions not favoring CSA adoption

- Water scarcity in some communities
- Destruction of trees by animals and bush fires
- Limited financial resources

Table 12. CSA practices, opportunities favoring, and challenges affecting adoption in Wa West District.

CSA Practices	Opportunities	Challenges
Cash crop plantations	Available water bodies	High poverty level
Tree plantations	Presence of hypo sanctuary	Limited job opportunities
Composting	Forest reserves	Low level of education
Ban on indiscriminate bush burning in communities	Presence of livestock (domestic and wildlife) for seed dispersal	Refuse dump site
Ban on felling of economic trees		Inappropriate fishing methods
Crop rotation and land fallowing		Urbanization
Establishment of woodlots		Road construction
		Influx of alien herds with large herd sizes
		Bad agric practices of clearing and burning

Checking learning: Why are these practices considered to be contributory to the CSA approach?

- Reducing greenhouse emissions
- Benefits accrue
- Reducing siltation of water bodies
- Enhancing food security and incomes
- Sustainable agric production
- Compost is sustainable practice

Daily Barometer Test of participants in UWR

This was introduced by the facilitator to gauge the mood of participants at the close of the workshop day. Participants were each given cluster stickers to indicate whether their spirits were low, medium, or high. The result for only days 1 and 2 is shown in Figure 2. The Figure suggests that most participants still appeared to be in high spirits at the close of the day given the assumption that they were either in high or low spirits before the start of the workshop.

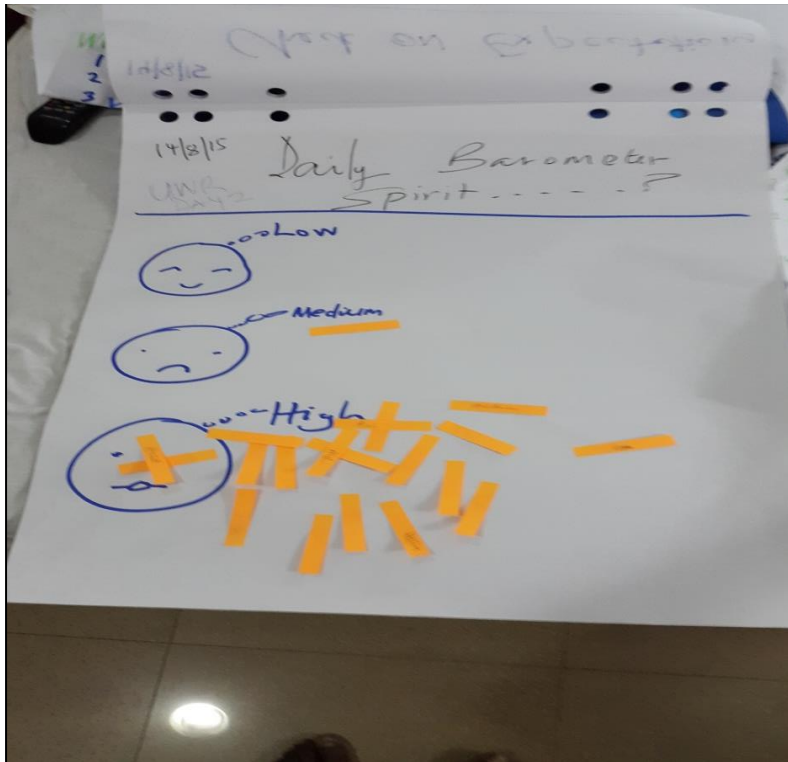


Figure 4. Daily barometer, Wa.

Perceptions and views of participants in UWR

There was a check with participants on the status of expectations at the close of day 2 which revealed that all expectations stated earlier by them had been fully addressed in the workshop process.

The filled evaluation sheets received from 20 respondents were analyzed for overall assessment, the willingness to apply knowledge and skills to the benefit of the platform as well as assessment of the trainer/facilitator on the Lickert's scale of 1–5. The mean score values were 4.6 for the overall assessment of the workshop, 4.8 for the willingness to apply the knowledge and skills for the benefit of the platform, and 4.9 for the performance of the trainer/facilitator. For the overall rating of the workshop, 65% of the respondents opted for 5 points while 35% gave a score of 4 points. Similarly, 90% and 10% of respondents gave 5 and 4 points, respectively, for the performance of the facilitator.

The willingness to apply the knowledge and skills gained was preceded by about 90% of the 20 entries totally agreed with the statement that “I have learned and improved my knowledge and skills in this workshop”. Ten percent (10%) agreed with the statement. None showed any form of disagreement.

Areas requiring further training as well as the high and low points of the workshop as indicated by the participants are represented in Table 12.

Table 13. Platform representatives (n = 14) indicate low and high points in workshop and suggest areas for further training.

Workshop High Point	Workshop Low Point	Training Need
Climate change	–	Management
Advocacy for R4D	–	–
Change management	–	Planning and partnerships
Climate–smart agriculture presentation	Slides show	–
Educative presentation	Time limitation	Capacity refresher
–	–	Participatory scenarios planning
Interactive	–	–
Sensitization planning event cycle	Knowledge gap on National Climate Change Policy	Diamond frame tools
Climate change and innovation	–	Nutrition
Climate change mitigation	Inadequate handouts–	Management and marketing
–	–	–
–	–	Livestock rearing
Group work	Movement of participants–	Agrochemical use and livestock production
CSA and the benefits	Inadequate handouts	PRA Tools and their use
Change management	Poor sound from video	Management of group dynamics How to access climate funds
–	–	Weather forecasting
Content of the presentation	The meals	Group dynamics
Climate change impact on agriculture	Facilitation tool	Climate change on health
Event sensitization plan	Climate change	Climate smart agriculture

Comments made by participants in the evaluation sheet about the workshop in general are presented in Box 2.

Box 2. Comments about the workshop in general by participants (n = 20).

- Need more of such to work better in R4D.
- The days for workshop should be more than 2 days and should come on during the dry season.
- More of same workshop.
- R4D to now meet and plan for August 2015 to September 2016.
- Should have it more often.
- More explanations on SWOTS, stakeholder analysis needed.
- Thanks to IITA and Facilitator.
- A series of these should be organized time to time.
- Some of us were not accommodated. It does not matter whether the person is in Wa or coming from somewhere. And as much as possible the allowance for the participants should be equal across the board. Thank you
- Very fruitful one.
- PowerPoint presentations to be given after workshop.
- The workshop is very good for the platform. It helps members of the platform to better understand the R4D modules.
- The workshop was very good and will help the platform strengthen its activities.
- Workshop is very useful and the facilitator did very well. Keep it up.
- Try a refresher for participants before the plans for 2016.
- I wish for more workshops.
- Should have been 3 days because work was much.

Tolon District and Savelugu-Nanton District Platforms, Northern Region

Platforms unveiled their expectations

The participants of the Tolon and Savelugu R4D platforms were facilitated to unveil their expectations in separate group discussions. These are presented in Table 14.

Table 14. Workshop expectations from Tolon and Savelugu platform participants.

Type of Expectation	Savelugu	Tolon
What should happen	Knowledge on how to run the R4D platform effectively	Understand what climate change is all about and mitigation measures
	Knowledge on the effects of climate change on agricultural production	Impact of climate change on agricultural activities and livelihood
	In-depth knowledge about climate change	Understanding roles, responsibilities, and the expectation of IITA for the R4D platform
What should not happen	No interruptions	Undisciplined behavior
	No lateness	Lack of interest in those participating
	No overtime	Unnecessary arguments

Joint Learning and Sharing about R4D Platforms

Platform participants in their respective groupings were then facilitated in a joint learning and sharing activity to describe the objectives and activities carried out so far by the R4D platforms since their inception January 2015. The platforms in the workshop also explored needed actions that could enhance the success of their platforms.

Savelugu R4D Platform objectives

- To identify farmers challenges
- To address farmers challenges with IITA support
- To serve as a link between IITA and farmers
- To ensure food security in the Municipality
- To improve nutritional status
- To encourage farmers to adopt modern technologies (GAP)

Actions needed for platform to be successful

- Regular training of R4D committee members AEA's on IITA core mandate
- Challenges identified by R4D should be addressed by IITA
- Monitoring visits to farmers activities
- Enough funds to run the R4D
- Provision of small ruminants to beneficiary communities
- Encourage integrated farming practices

Activities undertaken by platform so far

- Ranking of farmers challenges and reporting to IITA
- Draw up constitution for R4D
- Discussions on financial management

Any fears of Platform not being successful/collapsing?

- If the R4D committee members are not monitored
- If farmers challenges are not addressed by IITA
- Delay in release of funds for the R4D activities

Tolon R4D platform objectives

- Encourage knowledge sharing among farmers
- Advise/inform farmers research (IITA) to develop research package to solve farmers problem
- Prioritize felt needs of the communities/farmers
- Help farmers develop their community need assessment

Activities undertaken by platform so far

- Wrote a constitution for the platform
- Opened bank account for the platform at GN
- Visited intervention communities and conducted needs assessment and reporting to IITA
- Monitored distribution of seeds to farmers

Actions needed for platform to be successful

- Quarterly review meetings between IITA/Africa RISING and the R4D platform
- Financial issues should be addressed regularly and timely to execute R4D activities
- Regular meetings as planned and unity among members

Factors of platform not being successful/collapsing

- Platform plan actions if not followed
- Poor cordial relationship among committee members
- If platform funds are not managed transparently

Knowledge and skills gained

In Module 1 - Agricultural Development and Innovation for Change, a theoretical basis was laid for participants to learn in two separate sessions about participatory approaches in agricultural innovation and understanding change management for R4D innovation. During the session on participatory approaches in agricultural innovation participants used the definition of innovation platforms (IP) given by FARA and ILRI to derive some functional conduct priority areas for their R4D platform facilitation.

Platforms identify facilitation task function areas for Northern Region

Savelugu

Function Area	Priority
<ul style="list-style-type: none"> To bring heterogeneous actors together to exchange knowledge and take actions 	High
<ul style="list-style-type: none"> Participatory diagnosis of problems 	High
<ul style="list-style-type: none"> Promoting of agricultural innovation along targeted commodity chain 	High

Tolon

Function Area	Priority
<ul style="list-style-type: none"> Interaction and learning among stakeholders 	High
<ul style="list-style-type: none"> Participatory diagnosis of problem 	High
<ul style="list-style-type: none"> Promotion of agricultural innovation 	High
<ul style="list-style-type: none"> Bringing heterogeneous actors 	Medium
<ul style="list-style-type: none"> Exchange of knowledge for action 	High
<ul style="list-style-type: none"> Solve common problems 	Medium
<ul style="list-style-type: none"> Exploration of opportunities 	High
<ul style="list-style-type: none"> Tagged commodity chain 	Medium

R4D Platforms and change management

Learning about change management for R4D was considered by some participants the high point of the workshop and was meant to forcibly draw their attention to the fact that the project was looking for a change in the way agriculture is done in order to bring sustainable livelihoods and benefits to people while maintaining a healthy environment. There is always a kind of resistance that goes with change and participants needed to understand this, particularly in facilitating multi-stakeholder platforms of people with different backgrounds. Participants appreciated why change management was necessary and demonstrated it in their group exercises during the session by delineating reasons why some people will resist change and how to manage resistance in the change process.

Northern Region participants identify reasons why people resist change

- Not advantageous
- Loss of position
- Traditional beliefs
- Bad change
- Not profitable
- Uncertainty (what change will bring)
- Natural laggards
- Mistrust
- Ignorance
- Fear risk
- Greed/selfishness
- Cost

Managing stakeholder resistance to change

- Sensitization
- Conscientization
- Involving all
- Share roles and responsibilities
- Elimination
- Demonstration

- Plan strategies
- Incentives
- Working materials/tools

Learning stakeholder facilitation tools

Similarly, Module 2 - Stakeholder Facilitation Techniques and Tools for Change, took participants through communication, information sharing and learning, and the needed facilitation tools and use to further enhance their skills for multi-stakeholder platform conduct facilitation. Indeed participants came up with facilitation, the tools, and communication methods as some of the high points in the workshop. Participants were taught the two models of communication to understand how interactive model is more beneficial to a platform than the sender–receiver model which may not bring about innovation. Participants were taken through the session to demonstrate the need for multi-stakeholder sensitization in all of these. Employing the “Listen and Draw” game participants produced very diverse images/pictures and drew lessons why sensitization was crucial for the work of the platforms.

The “Diamond frame” (see reading material) was introduced to participants as a guide in facilitation of platforms and when a set of tools could be brought to play in the process. The Event Cycle tool was practiced in the group exercises where participants used the tool to plan a sensitization event hypothetically to sensitize relevant district and regional level stakeholders on the sustainability issue of the R4D platforms. The relevance of the tool for planning platform activities in the project cycle was emphasized because of the practical implications for the interaction space of platform executive members and the district level committee meetings, community workshops, conferences, field tours, etc. It is instructive to align this with the project cycle of getting started, the problem diagnosis, looking for things to try, design and planning actions, trying out solutions (farmer experimentation), sharing the results and keeping the process up (evaluation, re-planning, advocacy, etc.) as experienced in participatory innovation development. Other facilitation tools participants were guided to recall during the session time are provided below.

Participants recall PRA tools

- GRABB
- FGD
- SWOTS
- Transient walk
- Group Discussion
- Village Map
- Resource Map
- Checklist
- Seasonal Calendar

Communicating climate change

Module 3 of the training - Climate Change and Agricultural Development, examined the topics of climate change sensitization and learning about Climate-smart agriculture (CSA) in two separate sessions. There was a test on the National Climate change policy (NCCP) to gauge awareness. One (1) out of the 18 participants had heard of the policy. None had seen the document. The document was brought to the session for participants to see and hold. A challenging exercise was performed by participants providing the vernacular of key words and phrases in usage such as climate, climate change, adaptation, mitigation, resilience, and vulnerability. T Dagbanli dialects used for sensitization are provided in Table 15.

Table 15. Climate change Sensitization in Dagbanli dialects.

English	Local Language	Agreed upon/ Not
Climate	3aaman Tarmalsi or Behigu	✓
Climate change	3aaman behigu Tarbu	✓
Adoptation	Tag dei	✓
Mitigation	Gumang soya	✓
Resilience	Banzali	✓
Vulnerability	Zugu gbanvalinga	✓

Climate change effects as identified by participants

Documenting climate change happenings in the Northern Region was facilitated as part of the group exercise for participants to recall from their own experiences. The average age of workshop participants was 44 years representing a generation and over who could speak on climate change issues. The following list was generated by participants.

Observed climate change effects in Savelugu District, Northern Region

- Persistent drought every year
- Water shortage—drying of water bodies
- Floods
- Pests and disease infestation
- Loss of vegetation due to bush fires
- High temperature, e.g., March 2015
- Loss of soil fertility
- Reduction in crop yield
- Increase erosion
- Extinction of animal species, e.g., rabbits, partridge, grass cutters, centipedes

Observed climate change effects in Tolon District, Northern Region

- Delay in onset of rains
- Floods (2007 in Tolon)
- Rain storms
- Wind storms ripping off roofing
- Erratic rainfall
- Drying of water bodies
- Excessive heat
- Depletion of animals, fish extinct

The video “2 degrees up”, which talks about climate change and agriculture in the Upper West Region of Ghana (courtesy CCAFS) to participants was found to be helpful in the sensitization process as it enabled them to identify the socioeconomic, farm level, and off-farm impact of climate change in the zone (Table 16).

Table 16. Climate change impacts identified by platform participants from the Northern Region.

Social	Farm level	Off-farm
<ul style="list-style-type: none"> • Migration • Poor homes • Malnutrition • Age differences • Sad, miserable or unhappy family • Hunger • Poverty • Education interrupted • Food insecurity • No development • Pressure on resources 	<ul style="list-style-type: none"> • Low yield • Pests infestation • Poor soils • Floods • Poor storage • Dusty environment • Diseases • Poor quality of animal feed • Lean animals • Changing from crop to livestock farming 	<ul style="list-style-type: none"> • Trading/Marketing

Areas for strengthening community adaptive capacities

Participants in their various platform groups were facilitated as part of the sensitization process to identify negative practices in the communities likely contributing to climate change variability in their locations. The lists generated by platform participants are given below:

Practices contributing to climate change - Savelugu

- Bush burning
- Deforestation
- Exhaust fumes from vehicles
- Sand winning
- Pollution of water bodies
- Group hunting
- Overgrazing
- Farming along catchment areas of water bodies

Practices contributing to climate change - Tolon

- Bush burning
- Sand winning
- Charcoal burning
- Felling trees/deforestation
- Gallamsey
- Improper use of agrochemicals
- Pollution of water bodies
- Burning of car tires
- Fumes from exhaust of vehicles

Suggested actions that could enhance the adaptive capacities of community are presented in Tables 17 and 18 for the Tolon and Savelugu, respectively.

Table 17. Practices contributing to climate change variability in Tolon District and suggested activities to counter effects.

Bad practice	Proposed activity for solutions
Bush burning	<ul style="list-style-type: none"> • Sensitization at community level • Enactment of by-laws • Involvement of opinion leaders
Tree felling	<ul style="list-style-type: none"> • Sensitization • Establishment of agro-forest programs • Communities woodlot establishment • By-law enforcement • Household planting of trees • Establishment of community fodder banks
Improper use of agro-chemicals	<ul style="list-style-type: none"> • Sensitization, e.g., video shows • Trainings • Community by-laws
Pollution of water bodies	<ul style="list-style-type: none"> • Sensitization • Formation of water user committees • By-laws

Table 18. Practices contributing to climate change variability in Savelugu suggested activities to check effects.

Bad practice	Proposed activity for solution
Deforestation	<ul style="list-style-type: none"> • Sensitization on climate change effects and need to plant trees • Identification of areas to plant trees • Establishment of community tree nurseries with identified tree species • Distribution of tree seedlings • Monitoring of tree planting
Over grazing	<ul style="list-style-type: none"> • Sensitization of communities on over grazing and the need to establish pastures/fodder banks • Identify areas to establish pasture/fodder banks in communities • Identify plant species to plant • Encourage farmers to do intensive livestock rearing • Obtain communal grazing land for animals and planting such species
Farming along water bodies	<ul style="list-style-type: none"> • Sensitize farmers on the effects • Planting trees along water bodies e.g., mango, cashew • Enacting of community by-laws • Planting of cover crops, e.g., <i>Mucuna</i>
Bush burning	<ul style="list-style-type: none"> • Sensitization of farmers on the effects • Enacting community by-laws • Formation of community fire volunteer squads

Learning about Climate-smart agriculture

- Component practices and technologies identified in Tolon District
- Crop–livestock systems
- Planting of early maturing varieties
- System of rice intensification
- Promotion of compost manure
- Irrigation facilities available

Existing conditions favouring CSA practices in Tolon District

- The presence of research institutions
- Agricultural advisory services are available
- Availability of natural resources
- Institutional support to CSA practices
- Ready market for CSA products

Existing conditions not favouring CSA adoption in Tolon District

- Attitude and behaviour, e.g., bush burning
- Traditional norms, e.g., land ownership, land for agroforestry
- Long-term impact of CSA, e.g., uses of organic manure vs inorganic
- High cost of technology, e.g., green manure

Table 19. CSA practices, opportunities favouring, and challenges affecting adoption in Savelugu District.

Technologies/Practices	Opportunities promoting	Conditions not favoring
Dry season farming	<ul style="list-style-type: none"> • Available dams and dugouts e.g., Libga dam, Bunglung dam, drip irrigation (4 communities) • Irrigation experts 	<ul style="list-style-type: none"> • Destruction by stray animals • Low water levels due to inadequate rainfall • Cost
Contour bunding/tie ridges	<ul style="list-style-type: none"> • Available banded fields • Experts for contour bunding • High yields obtained through bunding 	<ul style="list-style-type: none"> • Capital Intensive
Early maturing varieties	<ul style="list-style-type: none"> • Availability of early maturing crop varieties 	<ul style="list-style-type: none"> • Cost (expensive)
Crop and livestock Integration (mixed farming)	<ul style="list-style-type: none"> • Farmers have livestock already • Farmers are aware of benefits of manure • Some farmers use crop residues to feed their animals 	<ul style="list-style-type: none"> • Free range • Only few farmers gather manure
Rhizobium inoculants	<ul style="list-style-type: none"> • Less expensive • Good nitrogen fixation • Higher yield • Higher biomass • No fertilization application 	<ul style="list-style-type: none"> • Difficult to handle • Farmers have less knowledge

Daily Barometer Test of participants in UWR

This was introduced by the facilitator to gauge the mood of participants by the close of the workshop day. Participants were each given a cluster sticker to indicate whether spirits were low, medium or high (Fig. 3). The figure suggests that most participants still appeared to be in high spirits at the close of the day given the

assumption that they were either in high or low spirits before the start of the workshop.

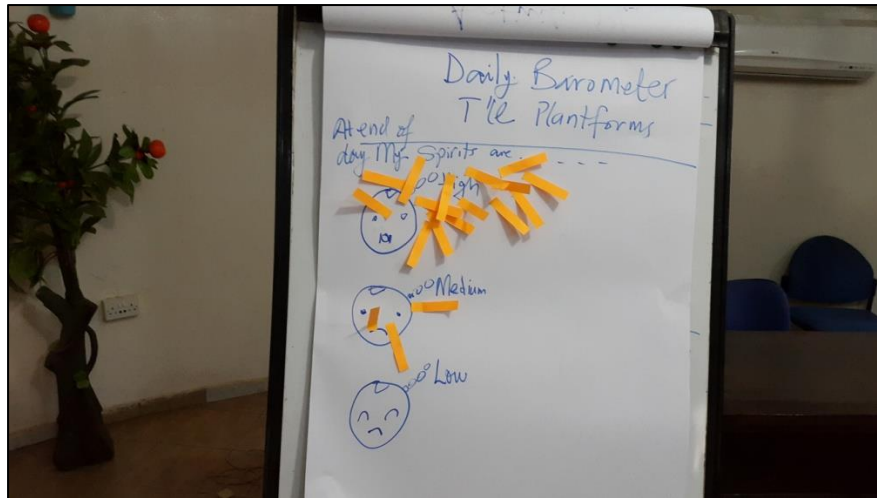


Figure 5. Daily barometer of participants, Northern Region.

Perceptions and views of participants in Northern Region

There was a check with participants on the status of expectations at the close of Day 2, which revealed that all expectations stated earlier by them had been fully addressed in the workshop process.

The filled evaluation sheets received from 21 respondents were analyzed for overall assessment, the willingness to apply knowledge and skills to the benefit of the platform as well as assessment of the trainer/facilitator on Lickert’s scale of 1–5. The mean score values were 4.5, the overall assessment of the workshop, 4.7 for the willingness apply the knowledge and skills for the benefit of the platform, and 4.7 for the performance of the trainer/facilitator. For the overall rating of the workshop, 50% of the respondents gave a score of 5 points while 50% gave a score of 4 points. Similarly, 71.4%, 23.8%, and 4.8% of respondents gave 5, 4, and 3 points, respectively, for the performance of the facilitator.

The willingness to apply the knowledge and skills gained was preceded by about 61.9% of the 21 entries totally agreed with the statement that “I have learned and improved my knowledge and skills in this workshop”. The percentage of respondents that simply agreed with statement was 38.1%. None showed any form of disagreement.

Areas requiring further training as well as the high and low points of the workshop as indicated by the participants are represented in Table 19.

Table 20. Platform representatives (n = 21) indicate low and high points of the workshop and suggest areas for further training.

Workshop High Point	Workshop Low Point	Training Need
Understand IP’s works	The lunch	Planning and skills development
The knowledge	No accommodation	Planning and skills
–	–	Training capacity building
–	The food	ICT training
Key messages	–	Assist us build up
Diagnosis of problem	Daily Barometer test	–

Participating and content presentation	Training materials	Proposal writing and policy
CSA	–	Proposal writing and policy
Key messages	–	Proposal writing
Key messages	–	How to organise IP meetings
Opportunities for R4D to grow	–	Proposal writing
Key messages	<i>Banku with pepper</i>	CSA
Knowledge about CSA	–	–
CSA	Lunch	Climate change
Good participation	Feeding	Conflict resolution
–	–	Advocacy and partnership
Good presentation and high interaction	Workshop materials	Natural resource reservation
Facilitation	Not enough water	ICT
Group discussions	Feeding	–
Contribution from participants	Food given participants	Crop livestock
Climate change	–	–

Box 3. Comments about the workshop in general by participants (n = 21) in Northern Region.

- Everything went on well.
- Should be repeated annually.
- The food that they provided was not good.
- Well understood.
- Very educative and should be organized from time to time. Thank you.
- This training has been very educative and should have been organized after the inauguration of the platform.
- The report and soft copy of the presentation should be shared to participants.
- Nil
- The facilitator is down to earth and practical.
- The food was okay and venue was okay.
- Nil
- It should be refreshed.
- Very educative and knowledge sharing.
- More workshop material to reach the number of participants.
- Poor *banku* meals.
- Was very educative.
- Everything went on well.
- Nil

Conclusions and recommendations

The training workshops organized on platform facilitation and sensitization on climate change for platform participants from the Bongo, Kassen-Nankana Municipality, Wa West, Nadowli-Kaleo, Savelugu, and Tolon districts were successful judging from the response to the invitation, the active participation, the outputs generated during the two-day period of joint learning at each location, and the positive evaluation outcomes provided in the report. The materials generated and put together could guide the various platforms in their operations as well as serve as a kind of baseline for their future evaluation. Participants scored high for their willingness to apply the knowledge and skills gained in the training for the benefit of the R4D platforms and this cannot be overlooked. It may therefore be recommended that the final workshop report be widely disseminated to the respective platforms to be used for sensitization and harmonization with their existing objectives and adequately plan to align their actions with mainstream project research and development activities. It will be appropriate to consciously and consistently backstop and monitor the conduct of the platforms for possible change outcomes in their performance that could be beneficial to stakeholders on the R4D platform over time. Beyond the research these platforms have the potential to network with other platforms, communicate with district and regional level policy for vertical scaling up, and also undertake climate change interventions already identified for the horizontal scaling out in the future enhancing sustainable agricultural development and food systems. This is anticipated from the viewpoint that these platforms will continue to benefit from further training in order to properly scaffold for innovation. The Project's management is therefore encouraged to take a critical look at the training needs proposed by the participants and possibly factor them into future project activity plans.

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Appendix 1: Training and sensitization workshop program

Africa RISING West Africa Project-Ghana
 Research-for-Development Platform Facilitation and Climate Change Sensitization Workshop
 10–11 August 2015, Extee Crystal Hotel, Bolgatanga

Program

Time	Activity	Responsible
Day 1: Monday, 10 August		
8.00–8.30	Arrival and registration of participation	IITA
8.30–8.35	Opening prayer	Volunteer
8.35–8.50	Welcome participants and state purpose of workshop	Dr Asamoah Larbi
8.50–9.20	Self-Introduction	Participants
9.20–9.30	Expectations from participants	Group work/Facilitator
9.3 –9.45	Joint learning and sharing about R4D District Platforms	Group work/Facilitator
9.45–10.00	Setting the rules for Team Contract	Facilitator/Participants
10.00–10.20	Snack Break	IITA
10.20–11.50	Session 1: Innovation in Agricultural Research and Development	Trainer/Facilitator
11.50–12.40	Session 2: R4D and change management	Trainer/Facilitator
12.40–1.40	Lunch Break	IITA
1.40–2.10	Session 3: Communication, information sharing and learning	Trainer/Facilitator
2.10–3.40	Session 4: Facilitation tools and use for action	Trainer/Facilitator
3.40–3.50	Daily barometer test	Participants
4.00	Prayer/Closing	Volunteer
Day 2, Tuesday, 11 August		
8.00–8.30	Arrival and registration of participation	IITA
8.30–8.35	Opening prayer	Volunteer
8.35–9.35	Recap Day 1	Participants
8.50–11.05	Session 5: Climate Change Sensitization	Trainer/Facilitator
11.05–11.20	Snack Break	IITA
11.20–1.20	Learning about CSA	Trainer/Facilitator
9.45–10.00	Setting the rules for Team Contract	Facilitator/Participants
1.20–2.20	Lunch Break	IITA
2.20–2.35	Workshop Evaluation	Participants/Facilitator
2.35–2.40	Daily Barometer	Participants
2.40–3.00	Closing Ceremony	IITA
3.00	Departure	ALL

Appendix 2: Workshop attendance list from Upper East, Upper West and Northern Regions

Upper West Region

No	Name of person	Institution
1.	MYB Suglo	MOFA –WA
2.	Yendau Dong Isaac	Wa-West
3.	Ali Ezekiel	Wa-West
4.	Stephen K. Yelsing	MOFA
5.	Ziekye Solomon	MOFA-NILD
6.	Husein A.Moomin T	Wa-West
7.	Richmond Suglo	R4D
8.	James Musinnyerah	MOFA
9.	Paul Tienaah	R4D
10.	Celistina Dakubo	R4D
11.	Maalu Dominic	MOFA
12.	Tengan Kevin	CSIR-ARI
13.	John Miniyah	R4D
14.	David K.Waawala	DDA/R4D
15.	Roland Aboyimga	MOFA
16.	Adindan Adombila B	MOFA
17.	Dari Isaac D	Wa-West
18.	Osman Abubakari	Wa-West
19.	Ngminnie A.Noah	R4D
20.	Dorimo-Waa Salifu	Wa-West
21.	Dr.N Karbo	CSIR-ARI
22.	Anyuetu Roger	MOFA
23.	Mary Asante	IITA
24.	Fuseini Abdulai	IITA
25.	Hamin Seidu	IITA
26.	Roger Tobopaale	IITA
27.	Asamoah Larbi	IITA
28.	Ismail Mahama	IITA

Upper East Region

No	Name of person	Institution
1.	Abagye Maxwell	Vice Chairman
2.	Cosmas Asaah	AEA(Bongo)
3.	Abobire Emmanuel	DDA
4.	Grace Anafo	R4D Chairperson
5.	Musbahu A.Ahmed	R4D
6.	Kuguriye Priscilla	R4D
7.	Atongo Philip M.	R4D
8.	Elijah Bobby	AEA
9.	Chanagia Edward	MOFA
10.	Desire Naab Dickson	IITA
11.	Martin Seguri	R4D
12.	Wessania Weja David	R4D
13.	Bertrand A. Nabare	R4D
14.	Adigah Paul	R4D
15.	Adamu Seidu Vasco	MOFA
16.	Nicholas Atubiga	R4D

Northern Region

No	Name of person	Institution
1.	Felix Oteng Dwaah	MOFA /AEA
2.	Ykuba Joe Wasofa	MOFA/AEA
3.	Iddrisu A. Rahman	MOFA/AEA
4.	Mbah Sylverline O.	MOFA/AEA
5.	Francis A Neindow	MOFA-MDA
6.	Sumani Ibrahim	MOFA
7.	Issah Abukari	MOFA/AEA
8.	Fauzia Saadick	R4D
9.	Iddrisu Baba Mohammed	AEA
10.	Mohammed A. Rahman	R4D
11.	Hawah Musah	MOFA/ DDA
12.	Iddrisu A. Ayuba	AEA Kpallung
13.	Memunatu Salifu	Farmer R4D
14.	Adam Alhassan	MOFA /AEA
15.	Amadu Adam	R4D
16.	Salifu Fuseini	R4D
17.	Azara Alhassan	Magazia-Tolon
18.	Issah Mohammed Saani	R4D
19.	Yakubu A. Abubakari	MOFA /AEA
20.	Karim Amadu	AEA/ Kumbungu
21.	Ebenezer Nartey	IITA
22.	Nancy Addo	IITA
23.	Dr N. Karbo	CSIR/Facilitator
24.	Amidatu Adam	WIAD

Appendix 3: Training and sensitization workshop evaluation sheet

Africa RISING West Africa Project-Ghana: Research-for-Development Platform Facilitation and Climate Change Sensitization Workshop,
10–11 August, 2015, Estee Crystal Hotel, Bolgatanga

Workshop Evaluation Sheet

Venue.....

Date.....

1. Name of R4D Platform.....

2. Your overall score on 1–5 scale of the workshop: 1 2 3 4 5

3. Kindly score for the following workshop components on the 1- 5 scale:

3.1 Content of the presentation 1 2 3 4 5

3.2 Participation 1 2 3 4 5

3.3 Facilitator-Trainer 1 2 3 4 5

3.4 Interaction 1 2 3 4 5

3.5 Handouts/Training Materials 1 2 3 4 5

4. What will you score for the statement: “I have learned and improved my knowledge and skills in this workshop”. Please select one.

i. Totally Agree

ii. Agree

iii. Partially Agree

iv. Disagree

v. Totally Disagree

5. Please score (1–5, Low = 1, High = 5) for the level of your willingness to apply the knowledge and skills for the benefit of the R4D Platform: 1 2 3 4 5

6. In your opinion what is the HIGH point in this workshop.....

7. State the LOW point in this workshop.....

8. State any 2 new areas of training needs for your R4D Platform.....

9. Any other comments about the workshop.....