

Title: Piloting and upscaling an innovative underground approach for mitigating urban floods and improving rural water security in South Asia

1. Description

Start date	End date	Management liaison	Mgmt. liaison contact
Jan 2015	Dec 2018	RP SAs	Aggarwal, Pramod <P.K.Aggarwal@cgiar.org>

Funding source types	Status	Lead Organization	Project leader
W1/W2	On-going	IWMI - International Water Management Institute - Sri Lanka	Pavelic, Paul <p.pavelic@cgiar.org>

Project is working on

Flaship(s)
F2 (before F1 - Andy): Climate-Smart Technologies and Practices

Region(s)
SAs: South Asia

Project summary

Catastrophic seasonal floods and groundwater depletion are both addressed in trouble-spots of South Asia (SA) through a novel approach termed 'Underground Taming of Floods for Irrigation' (UTFI). UTFI involves strategic storage of excess flows in aquifers upstream to protect lives and assets downstream, boost agricultural productivity, improve livelihoods and promote resilience to climate shocks. Thus UTFI represents a new management approach under the existing and future adversities that has yet to be put into mainstream practice at scale globally. Outputs of the research would include a detailed proof of concept in two countries with the opportunities for upscaling clearly defined through technical guidelines, business case development and active stakeholder engagement. This research will bring about more targeted investments in new CSA technologies by next- and end- users (governments, donors and private sector). Although firmly grounded in SA, there are opportunities to extend the research to other regions in future.

2. Partners

Partner #1 (Leader)

Institution: IWMI - International Water Management Institute

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Project Leader	Pavelic, Paul <p.pavelic@cgiar.org>	Activity 2014-113 *Leader*. Activity 2014-202 *Leader*. Activity 2014-290 *Leader*.	HQ

Partner #2

Institution: IFPRI - International Food Policy Research Institute

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Ringler, Claudia <C.RINGLER@CGIAR.ORG>	IFPRI will focus on assessing the comparative advantage of UTFI in terms of benefits, costs, and risks against a broad spectrum of traditional and contemporary water management technologies and practices within the Ganges Basin. Activity 2014-202 *Partner*. Activity 2014-290 *Partner*.	New Delhi, India

Partner #3

Institution: CSSRI - Central Soil Salinity Research Institute

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Sharma, Dr. D.K. <dksharma@cssri.ernet.in>	CSSRI will be involved in the field implementation and data collection aspects in India including water quality analysis, groundwater monitoring, and rural livelihoods analysis Activity 2014-113 *Partner*.	HQ

Partner #4

Institution: Acacia Water-Netherlands

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Tuinhof, Albert <albert.tuinhof@acacia water.com>	3R/Acacia Water will be actively engaged in the research work and bringing the findings to the attention of the policy/decision makers and potential investors in Bangladesh and potentially other deltaic countries. Activity 2014-290 *Partner*.	HQ

Partner #5

Institution: LNRMI - Livelihoods and Natural Resource Management Institute

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Reddy, Ratna <vratnareddy@lnrmi.ac. in>	LNRMI will focus on institutional arrangements, cost/benefit sharing and ecosystem services across the countries. LNRMI can also contribute in the stakeholder engagement process. Activity 2014-166 *Leader*. Activity 2014-290 *Partner*.	HQ

Partner #6

Institution: TERI - The Energy and Resources Institute

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Anshuman, Mr <anshuman@teri.res.in >	The partner will focus on social and gender components contributing to activity 2	HQ

Lessons regarding your partnerships and possible implications for the coming planning cycle:

Year	Lesson(s)
2016	The main point here is that partnership building is not only about choosing the right set of partners upfront, it is also about forecasting how they will interact and work together towards common goals, and to facilitate this process as much as possible. Regular meetings, discussions and field visits, aided by appointing a very productive half-time project coordinator, have greatly improved the strength of our partnerships and their performance.

Partnerships overall over the last reporting period:

The partners receiving funds have performed exceptionally well. They take responsibility for their respective activities and have contributed meaningfully towards the research goals. Strong outputs are emerging from each of the partners, and they are also contributing to the communications and outreach efforts of the project. We've also received great support from non-financial partners including numerous central and state government agencies in India and national/regional agencies in Bangladesh.

3. Locations

This project is not global

Project level	Latitude	Longitude	Name
Country			Bangladesh
Country			India

4. Outcomes

4.1 Project Outcomes

Project Outcome statement:

A new technology-oriented approach (UTFI) will be developed and mainstreamed to reduce flood hazards and offset unsustainable water use that prevails across South Asia leading to socially equitable and reliable water supplies, intensifying and diversifying agriculture and provide livelihood opportunities for the landless and women through enhanced irrigation economies. This entails linking the research with broader development initiatives such as ongoing government flagship programmes in the respective countries within areas that may include watershed, groundwater, flood and irrigation management. We expect to see strong evidence of investments going into UTFI from change-enabling next/end users. This will provide a new model for CSVs and a 'proven' CSA approach that can be applied in other regions.

Annual progress towards outcome (end of 2016*): Interventions will be in place extending over thousands of hectares through co-investments with next/end users. Baseline studies would have been completed and pilot testing commenced fully. We will have begun to define entry points for incentivizing the collective action of farmers/local authorities into UTFI processes, and the inclusion of marginal landholders, landless and women. We would have established the theoretical value of UTFI versus other alternatives including large dams in at least one of the focal areas.

Annual progress towards project outcome in the current reporting cycle (2016*): Detailed technical and non-technical investigations, stakeholder engagement and communication activities have led to the first operational UTFI interventions at the pilot scale in the state of Uttar Pradesh, India. A detailed proof of concept is underway from technical, economic, gender/social and institutional perspectives. This interaction and field inspection have attracted excellent support from the highest officials within the District Rural Development Agency of Rampur District, (popn. 2.3 Mill.) Plans are away to expand the pilot by 50-100 fold and the District administration are working closely with the project team to facilitate this upscaling. Community participation in the UTFI pilot in terms of site renovation and maintenance has been formalized through inclusion in Mahatma Gandhi Rural Employment Scheme (MGNREGA) - a national flagship program focused on natural resource management and livelihood improvement. Additionally, UTFI has for the first time been included in in the District Irrigation Plan for Rampur.

How communication and engagement activities have contributed to achieving your Project outcomes:* The communications and engagement strategy prepared for the project is the key means of achieving Project outcomes. The strategy is central to developing and strengthening relationships with key actors. A range of communication mediums have been utilized. Meetings, workshops, media briefings, and field trips have been organised to interact with the diversity of stakeholders. Presentations have also been made at local and international forums.

Evidence documents of progress towards outcomes:*

https://marlo.cgiar.org/data/ccafs/projects//20/projectOutcome/DIP%20-%20Rampur_final.pdf

Annual progress towards outcome (end of 2015): Decision makers from the key implementing agencies of India's Integrated Water Management Programme (IWMP), including the UP Dept. of Irrigation, are being targeted and convinced through a process of evidence-based dialogue to participate in the research and commit financial and in-kind resources to implementing on-the-ground UTFI interventions. This degree of support will ensure their commitment and act as one pathway to achieving scaling up over the longer term. Alternative pathways will also be followed giving practical and adoptable policy support/advice to next users such as NABARD, the Ministry of Water Resources, World Bank, ADB and others to co-invest and help take this initiative forward. The IFPRI-led project "Scaling-up climate smart agriculture through policies and institutions: linking it with national agenda of food security" will lend weight to these efforts by reaching out to a wider group of stakeholders. Within the first year we have a better handle on where UTFI is potentially well-suited in the landscape across the whole of the Ganges Basin, and have taken concrete steps to verify its usefulness by local communities. This will, in turn, help to provide a foundation to fine-tune our dialogue with next and boundary users.

Annual progress towards outcome (end of 2017): We will have made major inroads towards establishing clear step-by-step protocols for practical implementation about UTFI investment from governments, donors and the private sector.

Annual progress towards outcome (end of 2018): A techno-economic case based on very detailed integrated assessments for UTFI will have been established with technical guidelines and business models and strategies in place. We can expect great interest from across the wide spectrum of implementing agencies and new actors have come onboard to invest in upscaling efforts that will accelerate further advancement.

lessons regarding your Theory of Change and implications for the coming planning cycle; e.g. how have your assumptions changed, or do you have stronger evidence for them:* As we test out our approach and find out what does and doesn't work we tend refine our internal strategies and become more targeted.

4.2 CCAFS Outcomes

RP SAs Outcome 2019: Governments, private sector and farmer organizations increase their investments and develop incentive mechanisms to promote wide scale adoption of improved climate-smart practices and technologies

Indicator #1: # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

2019
<p>Target value: 500000</p> <p>Cumulative target to date: 575000</p> <p>Target narrative: New actors will be brought onboard enabling upscaling efforts to accelerate (eg. MoWR, NABARD, ADB, WB, others)</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: Firm policy guidance will be provided in terms of social/gender differentiated impacts.</p>
2015
<p>Target value: 0</p> <p>Cumulative target to date: 0</p> <p>Target narrative: We expect that we will have convinced government agencies in India to implement floodwater harvesting measures under the IWMP at a feasible scale and pledged support to upscale further in future years if the initial results are supportive.</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>

2016

Target value: 75000

Cumulative target to date: 75000

Target achieved: 2000.0

Target narrative: We expect that we will have convinced government agencies in India to implement floodwater harvesting measures at a feasible scale under national programmes such as IWMP and pledged support to upscale further in future years if the initial findings are supportive.

Narrative for your achieved targets, including evidence: The first ever UTFI pilot has been installed in India leading to a modest number of direct beneficiaries – 2,000 local villagers in addition to perhaps many-fold more downstream. More importantly, through focused engagement, key decisions makers are now taking notice of UTFI. Some are working with the project team to implement this within existing policies and plans at the next level. They are also awaiting further evidence before committing to investing on a greater scale.

Narrative for your achieved annual gender and social inclusion contribution to this CCAFS outcome: Gender studies in the pilot village reveal that women are well aware of goals of UTFI and have experienced improvement in water availability. They are welcoming of the intervention because the site area because of the associated improvements in cleanliness and hygiene that have been made.

The expected annual gender and social inclusion contribution to this CCAFS outcome: We will more fully understand how UTFI interventions differentially affect women and other socially disaggregated groups in the pilot watersheds.

Major Output groups:

- F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

4.3 Other Contributions

Contribution to other CCAFS Impact Pathways:

<Not Defined>

Collaborating with other CRPs

Water, Land and Ecosystems

Description of collaboration: WLE and CCAFS have agreed to both collaborate to support the broader UTFI WLE component focuses on more theoretical aspects (financial/institutional models, regional mapping) whereas CCAFS focuses on piloting and upscaling in the two countries. WLE and CCAFS have agreed on shared but differentiated attribution to make this possible.

4.4 Case Studies

No case studies added

5. Project outputs

5.1 Overview by MOGs

Major Output groups - 2019

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: • UTFI approach for enhanced adaptive capacity and resilience implemented and verified on a intermediate scale in India and Bangladesh • Concrete evidence of policy changes and investments to enable large scale investments

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output: • The policies and strategies developed explicitly include social and gender differentiation.

Major Output groups - 2016

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: • UTFI approach for enhanced adaptive capacity and resilience defined and implemented on a limited scale in India but emerging plans for intermediate upscaling

Brief summary of your actual 2016 contribution towards the selected MOG: UTFI approach for enhanced adaptive capacity and resilience defined and implemented on a limited scale in India and emerging plans for intermediate upscaling.

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output: • Entry points for inclusion of women and other socially disaggregated groups into UTFI processes

Summary of the gender and social inclusion dimension of the 2016 outputs: The project is beginning to understand how UTFI interventions could differentially affect women and different socially groups with the view to generating benefits through the enabling greater inclusion of into UTFI processes.

Major Output groups - 2015

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: • UTFI approach for enhanced adaptive capacity and resilience defined and implemented on a limited scale in India

Brief summary of your actual 2015 contribution towards the selected MOG: UTFI approach for enhanced adaptive capacity and resilience defined and implemented on a limited scale in India and emerging plans for intermediate upscaling.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: • Understanding of way the approach can differentially affect women and other socially disaggregated groups

Summary of the gender and social inclusion dimension of the 2015 outputs: Beginning to understand how UTFI interventions could differentially affect women and socially disaggregated groups with the view of enabling greater inclusion into UTFI processes.

Major Output groups - 2014

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

5.2 Deliverables

No deliverables added

5.3 Project Highlights

Project highlight 149	
Title: Engaging the community through the MGNREA program and inclusion of UTFI in District Irrigation Plan (DIP) for Rampur, India	
Author: Alok Sikka, Paul Pavelic, Navneet Sharma, Prasun Gangopadhyay, Vinay Mishra, Laxmi Kant	Subject:
Publisher:	Year reported: 2016
Project highlights types: <ul style="list-style-type: none"> • Gender and social inclusion • Innovative non-research partnerships • Policy engagement 	Is global: No
Start date: Jan 2016	End date: Dec 2016
Keywords:	Countries: India
Highlight description: With the support from District Administration, the project team successfully involved the community in site renovation. After discussion with administration, Block Level Officer and Panchayet Pradhan (elected village head) jointly processed and executed site renovation process with technical inputs from the researchers. As a part of district development plan, district irrigation plan (DIP) was prepared with the technical inputs from IWMI researchers and UTFI is now included as one of the primary means for water harvesting. Additionally researcher members are also part of the district nodal agency of PMKSY.	
Introduction / Objectives: To involve the community in UTFI and include UTFI in ongoing programs that implement over larger areas.	
Results: Successfully inclusion of UTFI in DIP and community participation in the yearly site renovation process.	
Partners: Govt. of Uttar Pradesh, CSSRI, KVK	
Links / Sources for further information: <Not Defined>	

6. Activities

A113 - UTFI planning, design, implementation and evaluation of pilot trials

Description: One or more pilot-scale trials will be established that recharge floodwater and later recover it as groundwater water in order to demonstrate that measurable and positive impacts arise in the upstream based on agricultural production and downstream in terms of reduced peak flows and flood hazard. The specific tasks associated with activity 1 include: i) sub-regional scale hydro-dynamic modelling of surface water and groundwater systems ii) identification of specific target meso-level watersheds for detailed piloting analysis iii) biophysical baseline assesement at the pilot watershed level iv) design of appropriate recharge interventions v) pilot-scale implementation, performance monitoring and evaluation vi) assessment of groundwater balance and water quality impacts vii) determination of effective silt management strategies viii) training and capacity building of farmers, local administrative officers of the government in UTFI operations ix) climate and water resources forecasting for scheduling floodwater harvesting

Start date: Jan 2015

End date: Dec 2018

Activity leader: IWMI - International Water Management Institute Pavelic, Paul

<p.pavelic@cgiar.org>

Status: On-going

Overall activity or progress made during this cycle: Progress: • Regular bio-physical data and socio-economic data have been collected throughout the year according to the comprehensive monitoring plan prepared; • The collected data is being checked and analyzed to understand performance, benefits and impacts emerging from the trial • The local community has been engaged in yearly maintenance of the system Lessons: • To carry out the piloting to a high standard requires major effort and commitment from all parties • The monitoring plan is being incrementally improved according to periodic evaluations • Engagement with local community is strong however more engagement with local government officials is needed to develop stronger buy-in

Deliverables in this activity:

<Not defined>

A166 - Institutional, economic and gender analysis of UTFI

Description: Non-technical issues pertaining to institutions, gender/equity, policy and livelihoods that compliment the technical work covered in activity 1 are largely the focus of this activity. The specific tasks here are: i) baseline socio-economic data collection of pilot watersheds including livelihoods analysis, social and gender differentiated analysis, gender & equity analysis ii) analysis of social/institutional/policy arrangements that facilitate farmer inclusion and cost/benefit sharing mechanisms for sustainable operations iii) assessment of how UTFI interventions may benefit/affect gender as well as other socially disaggregated groups differently in both the 'upstream' and 'downstream' contexts iv) development of an economic framework for assessing the full costs and benefits of UTFI and its application to the pilot areas

Start date: Jan 2015

End date: Dec 2018

Activity leader: LNRMI - Livelihoods and Natural Resource Management Institute Reddy, Ratna
<vratnareddy@lnrmi.ac.in>

Status: On-going

Overall activity or progress made during this cycle: Progress: • Socio-economic, gender (and biophysical) baselines have been carried out • Institutional frameworks for sustainable management are being explored and will be tested in 2017 Lessons: • Entry points for women who are often a minority or even excluded from local decision making and agricultural activities is challenging and requires major insights into local processes and detailed analysis.

Deliverables in this activity:

<Not defined>

A202 - Proof of concept development through technical guidelines and business models

Description: This activity synthesizes key research findings from activities 1&2 along with targeted studies aimed at strengthening the proof of concept and utility of the research. There are three major tasks: i) Comparative analyses of UTFI vs alternative flood mitigation approaches in the wet season and water scarcity in the dry season. ii) Technical guidelines will be developed based on the collective experiences from the two countries aimed largely at implementing agencies and other relevant stakeholders. iii) Context specific business cases will be prepared specifically to inform investors and other interested proponents. Various tools will emerge in the form of maps of sub-basins for potential UTFI investments, business case examples, generic business models, business model canvas, investment climate advisory, SWOT analysis, assessment frameworks and more that will also support to future implementation of UTFI.

Start date: Jan 2015

End date: Dec 2018

Activity leader: IWMI - International Water Management Institute Pavelic, Paul
<p.pavelic@cgiar.org>

Status: On-going

Overall activity or progress made during this cycle: Progress: • The activities described in 1 and 2 above are being synthesized. • A framework for the guidelines has been prepared and some sections prepared. • Hydrological modelling and analysis of scaling-up scenarios been conducted at the sub-basin scale covering 10 districts. This forms the foundation for a complimentary economic analysis that will be carried out in 2017. Lessons: • To achieve the potential benefits of integrated multidisciplinary research takes time and commitment of all parties.

Deliverables in this activity:

<Not defined>

A290 - Strategy development and dissemination

Description: Gaining and maintaining the interest of key stakeholders will be through a process of engagement, dialogue and feedback on an ongoing basis. Some of the research will have been developed in collaboration/co-financed by such stakeholders thereby ensuring buy-in and helping to streamline knowledge transfer and uptake. Specific tasks would include: i) Project inception workshop to finalize the research partnerships and fine tune the research design ii) Stakeholder engagement workshops and consultations in each country at national through to the local levels at key stages iii) Dialogues and workshops targeted to engaging with policy/decision makers and potential investors to disseminate findings relevant for policy iv) Hosting visits by officials, community groups as well as other stakeholders in a highly visible demonstration site vi) Setting up a project website for web-based dissemination of outputs of the project vii) Production of reports, policy/technical briefs, videos and brochures

Start date: Jan 2015

End date: Dec 2018

Activity leader: IWMI - International Water Management Institute Pavelic, Paul
<p.pavelic@cgiar.org>

Status: On-going

Overall activity or progress made during this cycle: Progress: • A communication & uptake strategy has been prepared. Communication material was produced including a project website and brochures; media coverage in local newspapers, and professional photography trips to sites organized. • A Stakeholders' Workshop in Bangladesh was held, hosted by the Barind Multipurpose Development Authority (BMDA) and chaired by the BMDA Chairman. • Senior Indian officials were invited to inspect pilot site and explore opportunities for UTFI mainstreaming through ongoing programs. • A technology brief was presented to the Minister of State-MoWR, RD&GR and the concept was appreciated. This is further leading to a proposal development to implement UTFI in new areas with the technical support from national partners of Govt. of India. Lessons: • Dissemination efforts are multi-faceted and need to be adaptive to local circumstances and opportunities. The team is fortunate to have onboard a communication specialist and senior team members with extensive networks.

Deliverables in this activity:

<Not defined>

7. Leverages

No leverages added

Title: (IWMI - WA) Building climate smart farming systems through integrated water storage and crop-livestock interventions - IWSLIs

1. Description

Start date	End date	Management liaison	Mgmt. liaison contact
Jan 2015	Dec 2017	RP WA	Zougmore, Robert <R.Zougmore@cgiar.org>

Funding source types	Status	Lead Organization	Project leader
W1/W2	On-going	IWMI - International Water Management Institute - Sri Lanka	Mul, Marloes <m.mul@cgiar.org>

Project is working on

Flaship(s)
F2 (before F1 - Andy): Climate-Smart Technologies and Practices

Region(s)
WA: West Africa

Project summary

Rainfall variability is a critical issue for WA farmers as water is a key limiting resource for crop and livestock production. IWSLIs harvest and store water for crop and livestock. They are evaluated on how they adapt to CC while minimizing contributions to GHG emissions. IWSLIs will increase resilience of farming systems by: -improving water availability for crops, livestock and humans throughout the year; -stabilize cash flow from crops and livestock over time; and -establish a reliable value chain for crops and livestock. Using on-farm and modeling approaches, the ?climate smartness? of alternative IWSLIs will be tested, and adoption and trade-offs will be evaluated. A value chain analysis will identify constraints to market access and opportunities to add value to the commodities. The research will explore socioeconomic, cultural and institutional catalysts and barriers (with an emphasis on gender) that may help or hinder uptake and sustainability, through participatory approaches.

2. Partners

Partner #1 (Leader)

Institution: IWMI - International Water Management Institute

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Project Leader	Mul, Marloes <m.mul@cgiar.org>	Activity 2014-185 *Partner*. Activity 2014-186 *Partner*. Activity 2014-187 *Leader*. Activity 2014-188 *Leader*.	Accra, Ghana
Partner	Kadyampakeni, Davie <d.kadyampakeni@cgiar.org>	Activity 2014-186 *Leader*. Activity 2014-187 *Partner*.	Accra, Ghana

Partner #2

Institution: INERA - Institut de l'Environnement et de Recherches Agricoles

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Sawadogo, Louis <sawadogo_ls@hotmail.com>	Activity 2014-185 *Partner*. Activity 2014-186 *Partner*. Activity 2014-188 *Partner*.	HQ
Partner	Bationo Babou, André <babou.bationo@gmail.com>	Activity 2014-185 *Partner*. Activity 2014-186 *Partner*.	HQ

Partner #3

Institution: IER - Institut d'Economie Rurale

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Dembele, Daouda <daoudad91@yahoo.fr>	Activity 2014-185 *Partner*. Activity 2014-186 *Partner*.	HQ
Partner	Traore, Kalifa <ibosimon_1@yahoo.fr>	Activity 2014-185 *Partner*. Activity 2014-188 *Partner*.	HQ

Partner #4

Institution: ILRI - International Livestock Research Institute

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Augustine, Ayantunde <A.Ayantunde@cgiar.org>	Activity 2014-185 *Leader*. Activity 2014-186 *Partner*. Activity 2014-187 *Partner*. Activity 2014-188 *Partner*.	HQ

Lessons regarding your partnerships and possible implications for the coming planning cycle:

Year	Lesson(s)
2016	coming planning cycle will focus on producing the deliverables from the research work done and no field work is expected

Partnerships overall over the last reporting period:

The local partners have played a crucial role in the field activities and community engagements. In particular considering the security situation in the two sites, the local partners provided important backstopping. The coordination between the different project components led by different partners was a bit challenging.

3. Locations

This project is not global

Project level	Latitude	Longitude	Name
CCAFS Site	13.828	-2.113	Yatenga
CCAFS Site	13.509	-5.613	Segou

4. Outcomes

4.1 Project Outcomes

Project Outcome statement:

500 CSV farmers have implemented additional water storage options on their farms as a strategy to help improve their climate resilience, in collaboration with one or more of the NGOs (FNGN, SNV, GARY, DRGR, IFAD – rural micro-finance programme, AgriBusiness). This has been outscaled beyond the CSV, so that 20,000 farmers outside of the CSV have also implemented additional water storage options on their farms as a strategy to help improve their climate resilience. 20,000 farmers have access to credit schemes to implement water storage options, which have been put in place based on activities and policies supported and implemented by government departments/agencies in Burkina Faso, Mali and Ghana that incorporate water storage investment options to increase water and food security.

Annual progress towards outcome (end of 2016*): Two NGOs are beginning to use evidence on climate smartness of water storage options in their capacity building programmes. One NGO has begun to use manuals, info-graphics and other materials on water storage options. 20000 farmers are sensitized on the benefits of water storage options through these activities. One NGO is developing financing choices for farmers relating to water storage options. 1000 farmers have access to and 10 farmers received credit to invest in water storage.

Annual progress towards project outcome in the current reporting cycle (2016*): 2 draft business cases developed to inform NGOs on the financial viability of solar pumps and small reservoirs. Currently 205 women farmers accessing a Solar pump fitted deep well irrigation system in Mali, and around 1,500 farmers are accessing a small reservoir for dry season irrigation farming and livestock watering in Tougou, Burkina Faso. For dry season farming, 16 farmers in Mali and 16 farmers in Burkina Faso were introduced to improved nutrient and water management options building upon indigenous practices. Improved nutrient management practices showed an increase in yield from 80-100%, with limited input required. Numerous community meetings were held to inform the communities and present the technologies. 70 farmers from nearby villages were introduced to the technologies and shared their impressions with community members in those villages.

How communication and engagement activities have contributed to achieving your Project outcomes:* The participatory action research approach was essential obtaining the relevant information on the business cases for the CSA practices. However, results are now being compiled and NGO take up has been limited as synthesized information is now being generated to provide a comprehensive message to NGOs.

Evidence documents of progress towards outcomes:* <Not Defined>

Annual progress towards outcome (end of 2015): Decision makers (project/initiative implementation leadership teams) within IFAD – rural micro-finance programme (Mali) and AgriBusiness (Burkina Faso) will be involved from the onset of the research process and engaged throughout the project duration. Within the first year this engagement will consist of their active participation in project workshops, consultation and validation workshops and in co-development of knowledge materials. Representatives of these NGOs will be included in the process of developing and sharing knowledge materials on the research results (such as training manuals and info-graphics). This will all help to ensure that the resulting research outputs meet and align with their knowledge needs and that they also match the understanding that these NGOs have of the relevant CSV farming communities and their needs, constraints and incentives regarding financing related to water storage options. Decision makers (project/initiative implementation leadership teams) within these 4 NGOs (FNGN, SNV and GARY (Burkina Faso), DRGR (Mali)) will be involved from the onset of the research process and engaged throughout the project duration. This engagement will consist of active participation in project workshops, farmer field schools, and consultation and validation workshops and in the co-development of knowledge materials. Representatives of these NGOs will be also included in the process of developing and sharing knowledge materials on the research results (such as training manuals and info-graphics). This will help to ensure that the resulting research outputs meet and align with their knowledge needs, and that they also match the understanding that these NGOs have of the relevant CSV farming communities and their needs, constraints and incentives regarding water storage options.

Annual progress towards outcome (end of 2017): Two NGOs are using manuals, info-graphics and other materials on water storage options in their capacity building activities. 50000 farmers are sensitized on the benefits of water storage options, and 5000 farmers have also implemented additional water storage options on their farms. Two NGOs are developing financing choices for farmers relating to water storage options. 5000 farmers have access to and 100 farmers received credit to invest in water storage.

Annual progress towards outcome (end of 2018): Three of the NGOs are using manuals, info-graphics and other materials on water storage options in their capacity building activities. 100000 farmers are sensitized on the benefits of water storage options through these activities, and 20000 farmers have also implemented additional water storage options on their farms. Two NGOs have developed financing choices for farmers relating to water storage options. 20000 farmers have access to and 1000 farmers have received credit to invest in water storage.

lessons regarding your Theory of Change and implications for the coming planning cycle; e.g. how have your assumptions changed, or do you have stronger evidence for them:* because of further budget cuts to the project the theory of change will not be implemented

4.2 CCAFS Outcomes

RP WA Outcome 2019: Public (MoAgr, MoLiv, MoEnv, MoRuD, MoPla, NARS) institutions and stakeholders, NGOs use CCAFS decision support tools to prioritize and design national level investments on CSA that will strengthen smallholder farmers adaptive capacity. Local decentralized Gov. services, NGOs and extension services partner to promote and scale up CSVs models using portfolios of CSA technologies and practices for local adaptation planning.

Indicator #1: # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

2019
<p>Target value: 2</p> <p>Cumulative target to date: 2</p> <p>Target narrative: Three NGOs are using evidence on climate smartness of water storage options, and knowledge about the trade-offs between different options, to prioritise, inform and implement their development investment decisions, actions and other initiatives. Project results, recommendations, knowledge and information, and communication materials, from this research project are integrally included in the capacity building and community engagement work of these NGOs. This has resulted in 500 CSV farmers and 20000 beyond the CSVs, implementing additional water storage options on their farms. Additionally, 100000 farmers are sensitized on the benefits of water storage options through the activities of the NGOs.</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: At least 50% of the prioritised storage options are specifically targeting women and youth. At least 50% of the sensitised farmers are women and youth.</p>

2015

Target value: 0

Cumulative target to date: 0

Target narrative: Decision makers (project/initiative implementation leadership teams) within these NGOs will be involved from the onset of the research process and engaged throughout the project duration. This engagement consists of active participation in project workshops, farmer field schools, and consultation and validation workshops and in the co-development of knowledge materials. Representatives of these NGOs will be also included in the process of developing and sharing knowledge materials on the research results (manuals, info-graphics). This will help to ensure that the resulting research outputs meet and align with their knowledge needs, and that they also match the understanding that these NGOs have of the relevant CSV farming communities and their needs, constraints and incentives regarding water storage options. Initial research outputs (best-bet water storage options) will be discussed with these NGOs, CSV farmers and others at validation workshops with the goal of validating the research results. NGOs are now aware of the potential benefits and climate smartness of the various water storage options.

The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined>

2016

Target value: 0

Cumulative target to date: 0

Target achieved: 0.0

Target narrative: Two NGOS are beginning to use evidence on climate smartness of water storage options to prioritise and inform the implementation of their capacity building programmes. One NGO has also begun to use manuals, info-graphics and other materials produced through this project's work in their activities, localizing and translating where appropriate. 20,000 farmers are sensitized on the benefits of water storage options through these activities. This has resulted in 100 CSV farmers and 1000 beyond the CSVs, implementing additional water storage options on their farms.

Narrative for your achieved targets, including evidence: Currently 205 women farmers accessing a Solar pump fitted deep well irrigation system in Mali, and around 1,500 farmers are accessing a small reservoir for dry season irrigation farming and livestock watering in Tougou, Burkina Faso. For dry season farming, 16 farmers in Mali and 16 farmers in Burkina Faso were introduced to improved nutrient and water management options building upon indigenous practices.

Narrative for your achieved annual gender and social inclusion contribution to this CCAFS outcome: Dry season irrigation is a predominantly female activity in the two countries, focus on solar pumps and small reservoir irrigation is therefore supporting female farmers in particular

The expected annual gender and social inclusion contribution to this CCAFS outcome: At least 50% of the prioritised storage options are specifically targeting women and youth. At least 50% of the sensitised farmers are women and youth.

Indicator #2: # of public-private actors at national and sub-national levels are using new incentive mechanisms or business models/ markets that explicitly promote climate smart approaches along the value chain, using CCAFS science

2019
<p>Target value: 1</p> <p>Cumulative target to date: 1</p> <p>Target narrative: One NGOs is actively promoting investment in water storage options, in either Mali or Burkina Faso, that are financially viable through credit schemes that are acceptable to farmers (e.g. subsidies, micro-credit schemes). This outreach by this NGO is therefore providing access to credit schemes for water storage options for approximately 20,000 farmers who they work with. So far this has resulted in at least 1,000 farmers engaging in credit schemes to enable them to develop appropriate climate smart water storage options on their farms.</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: At least 50% of the farmers receiving credit are women and youth. Credit schemes are particularly targeting women and youth.</p>
2015
<p>Target value: 0</p> <p>Cumulative target to date: 0</p> <p>Target narrative: Decision makers (project/initiative implementation leadership teams) within these 2 NGOs will be involved from the onset of the research process and engaged throughout the project duration. This engagement consists of active participation in project workshops, consultation and validation workshops and co-development of knowledge materials. Representatives of these NGOs will be included in the process of developing and sharing knowledge materials on the research results (manuals, info-graphics). This will all help to ensure that the resulting research outputs meet and align with their knowledge needs and that they also match the understanding that these NGOs have of the relevant CSV farming communities and their needs, constraints and incentives regarding financing related to water storage options.</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>

2016

Target value: 0

Cumulative target to date: 0

Target achieved: 0.0

Target narrative: At least one NGO is actively developing new (or expanding existing to include), financing choices for farmers relating to water storage options in their credit provision schemes. At least 10 farmers within the CSVs have (through this new offering and the farmer's involvement in the project's capacity building and workshop activities) then taken up this credit scheme option to develop a water storage option. 1,000 farmers have access to the credit scheme for investing in water storage options.

Narrative for your achieved targets, including evidence: as research results (business cases and yield responses) are now being compiled, insufficient evidence was gathered in 2016 for an NGO to act.

Narrative for your achieved annual gender and social inclusion contribution to this CCAFS outcome: credit schemes will highly likely focus on dry season irrigation as it requires the largest investment cost. The high involvement of women in dry season irrigation will make it very likely that women will benefit

The expected annual gender and social inclusion contribution to this CCAFS outcome: At least 50% of the farmers receiving credit are women and youth. Credit schemes are particularly targeting women and youth. least 50% of the farmers receiving credit are women and youth.

Major Output groups:

- F2 (before F1 - Andy): Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (LAM, WA, EA, SA, SEA)
- F2 (before F1 - Andy): Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning (LAM, WA, EA, SA, SEA)
- F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

4.3 Other Contributions

Contribution to other CCAFS Impact Pathways:

RP-WA Outcome #55. CCAFS science-derived decision support tools and systems are used by various institutions to mainstream climate change into national plans and policies from local to national levels. Through the CCAFS science-policy dialogue platform (Burkina Faso and Mali) and the WACDEP programme (in Ghana and Burkina Faso), representatives from relevant government ministries (water, agriculture and environment) adapt policies and implement activities and strategies that target and include economic assessment, trade-off analyses and upscaling of water storage options and usage towards fostering increased incomes, enhanced climate resilience, and household, community as well as national food security.

Collaborating with other CRPs

Water, Land and Ecosystems

Description of collaboration: Two WLE projects (Africa Rising-West Africa (IWMI)) and ILSSI, USAID funded) do similar work in Ghana and WLE Biomass (ILRI) is intervening in Yatenga province. Similar interventions are implemented and CC aspects emanating from this project are shared. Research results are regularly exchanged and consolidated results communicated to end users.

Dryland Systems

Description of collaboration: The ILRI component of Africa Rising- West Africa is mapped against Dryland systems. Research results are exchanged on a regular basis. CC aspects emanating from this project are also fed back into these two projects. Consolidated results are communicated to end users.

4.4 Case Studies

No case studies added

5. Project outputs

5.1 Overview by MOGs

Major Output groups - 2019

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: All earlier information is compiled to develop investment/credit schemes that remove barriers for uptake and are acceptable for farmers in terms of return of investment (timing and risk).

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output: By designing investment/ credit schemes specific attention is given towards the preference of women and youth.

F2 (before F1 - Andy): Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: Modelling of CSA interventions under CC will provide additional information on how CSA options and portfolios enhance adaptive capacity.

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output: Particular attention will be given towards the CSA options and portfolios where women are actively involved

F2 (before F1 - Andy): Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: Trade-offs between different water storage options, water application and water use are well presented

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output: Particular attention is given to the role of women in water storage options.

Major Output groups - 2016

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2016 contribution towards the selected MOG:

Barriers and constraints for uptake of water storage interventions are identified in the two CSV sites.

Brief summary of your actual 2016 contribution towards the selected MOG: main barrier for uptake of dry season irrigation is financing of the initial investment. Soil and water management improvements for CSA are readily taken up because of necessity, knowledge about fertilizer application hinders further uptake

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output:

Particular attentions is given towards why women and youth are not taking up water storage options to improve their livelihoods.

Summary of the gender and social inclusion dimension of the 2016 outputs: soil and water management improvements require substantial labor inputs and are often led by male farmers in the wet season. Female farmers in Mali are the ones implementing dry season irrigation and small plots (5*2.5 m) requiring less labour

F2 (before F1 - Andy): Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2016 contribution towards the selected MOG:

Participatory testing, evaluation and promotion of crop-related CSA practices in EA. Specific interventions include promotion of drought tolerant, disease resistant, pest tolerant, faster maturing, and highly nutritious crops.

Brief summary of your actual 2016 contribution towards the selected MOG: 4 CSA practices tested in Mali and Burkina Faso during the rainy season, farmers trained and exchange visits organised. CSA practices focused on improved soil and water conservation. 2 business cases developed for dry season irrigation

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output:

Participatory testing involves women and organized youth groups, who will particularly spearhead village demonstrations and multiplication of seeds and planting material in the local communities.

Summary of the gender and social inclusion dimension of the 2016 outputs: Dry season irrigation using deep wells is a predominantly female activity, successful business cases for groundwater irrigation will benefit women

F2 (before F1 - Andy): Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: The potential yield of water use for crop production and livestock is assessed by monitoring and evaluating several interventions.

Brief summary of your actual 2016 contribution towards the selected MOG: Draft decision support tool developed to assess appropriate water storage options based on biophysical and socio-economic considerations and to optimize the size of the water storage option and irrigated area

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output: In particular activities where women and youth are involved will be tested and evaluated.

Summary of the gender and social inclusion dimension of the 2016 outputs: availability of gender-disaggregated labor availability in both wet and dry season is considered in the DSS

Major Output groups - 2015

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: Establishing the need for increased water storage to overcome short dryspells to increase resilience to climate variability and climate change. First steps in developing business cases to support scaling out of water storage options.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Identification of gender role in the use of different water storage options and selection of water storage options supporting women and youth for business case development.

F2 (before F1 - Andy): Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: Baseline survey identified different needs of farmers and existing water storage options in the two sites, through PAR selected water storage options and crop-livestock interventions were selected for field based trials.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Baseline survey distinguishes between different needs for men and women.

F2 (before F1 - Andy): Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: Key information and data collection towards trade-off analyses is ongoing, business case development and trade-offs between different uses to be developed in 2016 will feed into this MOG.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Gender preferences will influence final decisions made on the trade-off analyses. Gender preferences on criteria for selecting interventions were obtained from the baseline survey.

Major Output groups - 2014

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F2 (before F1 - Andy): Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F2 (before F1 - Andy): Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

5.2 Deliverables

D701 - Best-bet water storage options considering WCL system description, gender differentiation and market/value chain

Main Information

Type: Reports and other publications

Subtype: Discussion paper/Working paper/White paper

Status: Extended

Year of expected completion: 2015

New expected year: 2016

Justification of new expected date of completion: Due to the political situation in one of the sites, the baseline survey was delayed to December and data analyses is ongoing, all other materials (literature reviews etc are ready). Final report finished

Cross-cutting dimension:

- N/A

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: CGSpace

Dissemination URL:

<https://cgspace.cgiar.org/handle/10568/76294>

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Climate-Smart Livestock Interventions in West Africa: A Review

Description / Abstract: The livestock sector is one of the major contributors in agriculture, by some estimates contributing up to 18% of the global greenhouse gas (GHG) emissions. Of this, about one third is reported to be due to land use change associated with livestock production, another one third is nitrous oxide from manure and slurry management, and roughly 25% is attributed to methane emissions from ruminant digestion. Recent analysis suggests that developing world regions contribute about two thirds of the global emissions from ruminants, with sub-Saharan Africa a global hotspot for emissions intensities, largely due to low animal productivity, poor animal health and low quality feeds. These numbers suggest, therefore, that there are opportunities for easy gains to be made in terms of mitigation in the livestock sector, as improving feed resource use efficiencies would improve livestock productivity as well as reduce emissions per unit of product. In this context, climate-smart agricultural practices are necessary in the West Africa region and in sub-Saharan Africa in general. Climate-Smart Agriculture (CSA) is an approach that provides a conceptual basis for assessing the effectiveness of agricultural practice change to support food security under climate change. This review focuses on livestock-related CSA options in West Africa looking at herd management, feed, grazing management, animal breeding strategies, manure management, and policy options.

Publication / Creation date: 2016-07-01

Language: English

Country: Burkina Faso and Mali

Keywords: Climate - Smart Agriculture; Livestock Productivity; West Africa

Citation: Amole TA, Ayantunde AA. 2016. Climate-smart livestock interventions in West Africa: A review. CCAFS Working Paper no. 178. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org

Handle: <http://hdl.handle.net/10568/76294>

DOI: <Not Defined>

Creator / Authors:

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- Ayantunde - Augustine

Deliverable Quality check

FAIR Compliant: **F A I R**

Partners contributing to this deliverable:

Institution	Partner	Type
ILRI - International Livestock Research Institute	Augustine, Ayantunde <A.Ayantunde@cgiar.org>	Responsible
IWMI - International Water Management Institute	Mul, Marloes<m.mul@cgiar.org>	Other
IER - Institut d'Economie Rurale	Dembele, Daouda<daoudad91@yahoo.fr>	Other
INERA - Institut de l'Environnement et de Recherches Agricoles	Sawadogo, Louis<sawadogo_ls@hotmail.com>	Other
INERA - Institut de l'Environnement et de Recherches Agricoles	Bationo Babou, André<babou.bationo@gmail.com>	Other
IER - Institut d'Economie Rurale	Traore, Kalifa<ibosimon_1@yahoo.fr>	Other

5.3 Project Highlights

No project highlights added

6. Activities

A185 - Water-crop-livestock system description and actor mapping

Description: This activity will compile all available data and information on water storage (focusing on water retention techniques for crop production and small-to-medium scale water storage infrastructures for multi-purpose use, combined with technologies focusing on optimizing crop-livestock productivity. Factors that potentially affect the success of the intervention are assessed. Secondly, a detailed description of the water-crop-livestock system in the two pilot sites will be developed, including an analysis of the role of gender and youth. Detailed market and value chain analyses through Innovation Platforms will be used to link the marked demand to the production system. Farmer preferences towards risk, investments, labour inputs and credits schemes for existing and potential inventions are assessed through detailed surveys. This will identify constraints and barriers for successful uptake of water storage options for increasing the climate smartness of the water-crop-livestock system.

Start date: Jan 2015

End date: Jun 2017

Activity leader: ILRI - International Livestock Research Institute Augustine, Ayantunde
<A.Ayantunde@cgiar.org>

Status: On-going

Overall activity or progress made during this cycle: Surveys implemented in Burkina Faso and Mali project sites. CCAFS working paper on climate smart livestock options was published. Dry spell analyses show the importance of water storage during the wet season, journal paper under development. Report on Agricultural water management practices as climate smart agricultural practices in West Africa developed to be published as CCAFS working paper. Decision support system designed and currently being compiled to support the design of water storage options for wet season and dry season farming.

Deliverables in this activity:

- D701: Best-bet water storage options considering WCL system description, gender differentiation and market/value chain
- D1067: Climate smart systems decision making matrix tool for decision makers to assess the climate smartness
- D720: Decision support tool to identify climate smart water storage options (what works where and how)

A186 - Testing, evaluating and monitoring water storage options and their productivity

Description: This activity aims to contribute to the knowledge on the responses of the water-crop-livestock system to a selection of water storage options that increase water availability (focusing on water retention techniques for crop production (Za?, contour ridges) and small-to-medium scale water storage infrastructures (rainwater harvesting tank, dugouts, small reservoirs) for multi-purpose use, combined with technologies focusing on optimizing crop-livestock productivity (trees and legumes, fodder production and crop residue management). In the two study sites, existing water storage options will be monitored as well as some selected water storage options that will be established by the project will be tested and monitored. Monitoring will consist of measuring components of the water balance, measure water productivity of crops, fodder and livestock using water from the storage structure. Tested water storage options are evaluated against the indicators developed in Activity 1.

Start date: Jan 2015

End date: Jun 2017

Activity leader: IWMI - International Water Management Institute Mul, Marloes <m.mul@cgiar.org>

Status: On-going

Overall activity or progress made during this cycle: Field activities focused on water retention techniques for crop production during the rainy season, in combination with nutrient management options. Various biophysical data was collected, a meteorological station was installed and collected data, soil moisture was collected continuously in different treatments. A draft working paper on the analyses of the experiments has been developed and will be further developed for publication as a working paper,

Deliverables in this activity:

- D719: Report on performance tested best-bet water storage options

A187 - Water storage options and crop-livestock productivity modelling and climate change scenarios

Description: This activity aims to contribute to assessing the climate smartness of the different water storage options and their response in terms of water productivity through the development of water balance models, crop-livestock productivity model. Data from the field collected in Activity 2 are used to calibrate and validate the models. A business model of the water-crop-livestock system will be developed and tested against the climate change scenarios.

Start date: Jan 2015

End date: Jun 2017

Activity leader: IWMI - International Water Management Institute Mul, Marloes <m.mul@cgiar.org>

Status: On-going

Overall activity or progress made during this cycle: Surveys were implemented in the two sites in Burkina Faso and Mali to collect the relevant information to develop business cases for water storage options. Two draft business cases have been developed and will be finalised early 2017.

Deliverables in this activity:

- D742: Business model for water storage options, including alternative investments options

7. Leverages

No leverages added

Title: Enhancing benefits of Remote Sensing Data and Flood Hazard Modeling in Index-based Flood Insurance (IBFI) in South Asia

1. Description

Start date	End date	Management liaison	Mgmt. liaison contact
Jan 2015	Dec 2018	RP SAs	Aggarwal, Pramod <P.K.Aggarwal@cgiar.org>

Funding source types	Status	Lead Organization	Project leader
W1/W2, Bilateral	On-going	IWMI - International Water Management Institute - Sri Lanka	Amarnath, Giriraj <a.giriraj@cgiar.org>

Project is working on

Flaship(s)
F4 (before F2 - James): Climate services and safety nets

Region(s)
SAs: South Asia

Project summary

Index-based flood insurance (IBFI) is an innovative approach to developing effective payout schemes for low-income, food-prone communities. This project aims to integrate hi-tech modelling and satellite imagery with other data to predetermine flood thresholds, which could trigger speedy compensation payouts. Effective end-to-end solutions will be developed in collaboration with a range of organizations and experts from central and state government bodies, private insurance firms, community-based organizations (CBOs) and nongovernmental organizations (NGOs). The project will cover India and Bangladesh, making it the first attempt to develop IBFI at a large scale. More details can be referred here <http://ibfi.iwmi.org/>

2. Partners

Partner #1 (Leader)

Institution: IWMI - International Water Management Institute

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Project Leader	Amarnath, Giriraj <a.giriraj@cgiar.org>	Activity 2014-216 *Leader*. Activity 2014-169 *Leader*. Activity 2014-217 *Partner*.	HQ

Partner #2

Institution: IFPRI - International Food Policy Research Institute

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Joshi, PK <p.joshi@cgiar.org>	The partner will focus on (i) assessing stakeholders preferences for index based insurance; (ii) undertake financial feasibility of index based insurance products under different scenario and develop business models; (iii) develop business models acceptable to the governments/insurance industry; and (iv) evolve institutional framework for larger acceptability of the insurance products. Activity 2014-217 *Leader*. Activity 2014-169 *Partner*. Activity 2014-215 *Partner*. Activity 2014-216 *Partner*.	New Delhi, India

Partner #3

Institution: AIC - Agriculture Insurance Company of India Limited

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Plappallil, Joseph J. <pjoseph@aicoindia.com>	Activity 2014-169 *Partner*. Activity 2014-215 *Partner*. Activity 2014-216 *Partner*. Activity 2014-217 *Partner*.	HQ

Partner #4

Institution: Swiss Re - Swiss Reinsurance Company Ltd

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Raju, Satish <Satish_Raju@swissre.com>	Activity 2014-215 *Partner*. Activity 2014-216 *Partner*. Activity 2014-217 *Partner*.	HQ

Partner #5

Institution: IWM - Institute of Water Modeling

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Masud, Md. Sohel <msm@iwmbd.org>	Activity 2014-217 *Partner*. Activity 2014-169 *Partner*. Activity 2014-215 *Partner*. Activity 2014-216 *Partner*.	HQ

Partner #6

Institution: Government of Bihar-India

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Sinha, Anil <anilsinha.k@gmail.com>	Support in coordination with Bihar State Disaster Management Authority to promote IBFI product and enable guidelines for implementation and policy development.	HQ

Partner #7

Institution: ICAR - Indian Council of Agricultural Research

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Ambast, Sunil Kumar <skambast65@gmail.com>	Support in development of crop loss modeling and estimate flood losses for better insurance payout and product improvement	HQ

Lessons regarding your partnerships and possible implications for the coming planning cycle:

Year	Lesson(s)
2016	This project continued in helping to bring CGIAR center, government and insurance industry together for piloting IBFI to enhance agriculture resilience and flood proofing livelihoods. IBFI will be implemented in 2017 by different partners are becoming learning platforms for climate-safety nets interventions in agriculture and risk management solutions. Partners are also able to bring many key stakeholders to the index insurance in the pilot districts and sharing knowledge and information to them. These activities and involvement of national and local partners are helping to develop scaling up/out insurance schemes e.g. PMFBY in India and integrate into climate adaptation policies and programs.

Partnerships overall over the last reporting period:

The overall partnership within IWMI and external partners has been excellent. Individual partners have taken the responsibility including IWMI in modeling and coordination, SwissRe in index design and product termsheet and BSDMA/ICAR in facilitating institutional and policy aspect, IWM (Bangladesh) in modeling for Bangladesh and BajajAllianz in index insurance regulatory approval. Strong outputs are emerging from each of the stakeholders, and they are also contributing in communication and outreach efforts. We are already seeing wider impact from government in India to participate in the index insurance project and plans to subsidize the IBFI product for test and validation in 2017.

3. Locations

This project is not global

Project level	Latitude	Longitude	Name
District	26.1893	85.3407	Muzaffarpur
District	24.5006	89.6693	Sirajganj
District	26.073367236210448	85.96144531250002	Darbhanga
District	25.79673044495275	85.69777343750002	Samastipur

4. Outcomes

4.1 Project Outcomes

Project Outcome statement:

The meso-level flood index insurance will be designed to protect the low income, vulnerable flood prone communities by improving their ability to cope with flood risks, which would contribute to their socio economic development. The project will help to generate at least 2 initiatives i.e. implemented jointly by insurance industries and National/State Governments in South Asia. Each initiative will lead to benefit at least 50,000 to 1 Million farmers. The innovative flood insurance products for SA will be implemented in close cooperation with various actors (Government, Insurance companies, INGO, CBO, NGO) in a public private partnership (PPP) mode to promote adaptation practice to climate change, and develop policy oriented model in scale up process. National governments in 2 target countries are convinced of the flood insurance benefits and are set to ensure increasing adoption, integrating it into their climate change adaptation strategies.

Annual progress towards outcome (end of 2016*): Testing and evaluation of IBFI in a selecting districts in collaboration with governments, private insurance companies and other key stakeholders will be initiated.

Annual progress towards project outcome in the current reporting cycle (2016*): The research project will bring together some of the key players e.g. Ministry of Agriculture, Disaster Management Authority, Agriculture Department, Swiss Re, and the project leaders to explore ways forward for collaborative work on index insurance implementation and scaling potential. With 2017 plans for implementation the interventions will be in place for extending to other districts/States in India through co-investments with next/end-users. Already ICAR has approved project on index insurance and post-flood management options to strengthen IBFI efforts and discuss collective action of farmers/local authorities into IBFI processes and the inclusion of incorporating equitable risk sharing for women. We would have established the theoretical value of IBFI versus other alternatives including ex-post ante disaster mechanism in the pilot areas. Historical flood mapping of Bihar and Bangladesh based on multi-sensor remote sensing datasets completed for past 16 years (2001 to 2016). Thirty villages were selected for piloting IBFI in Muzzafarpur and Darbhanga of Bihar. 36 years (1980 to 2016) of flood parameters – depth and duration for the pilot villages derived from a flood model created by IWMI for Bihar and IWM for Bangladesh. IWMI and its partners is presently finalizing the thresholds and payouts based on the gridded flood parameter dataset. A Willingness to Pay (WTP) was completed in pilot villages for IBFI implementation. Crop information and damage estimates were collected based on 1,150 ground points and 200 detailed farmer survey. Recent flood disasters in Bihar (August 2016), the project team provided rapid emergency response map to Disaster Management Authorities and regular flood damage assessment on agricultural losses shared to BajajAllianz to estimate overall insured losses in the seven districts in Bihar. Cost-benefit analysis and Business model is being undertaken for scaling up and institutional analysis. Implementation strategies is being formulated for piloting IBFI product in 2017 monsoon season.

How communication and engagement activities have contributed to achieving your Project outcomes:

***:** The communications and engagement strategy prepared for the project is the key means of

achieving Project outcomes. The strategy is central to developing and strengthening relationships with key actors. A range of communication mediums have been utilized. Meetings, workshops, IBFI Film, media briefings, field trips have been organised to interact with the diversity of stakeholders. Presentations have also been made at local and international forums. Further, the index product was evaluated closely with farmers and local authorities on the pricing and historical claim prior implementation. We are interacting with higher officials for wider acceptance in scaling up and investments in CCAFS.

Evidence documents of progress towards outcomes:*

https://marlo.cgiar.org/data/ccafs/projects//41/projectOutcome/Business-standard_News_IBFI.pdf

Annual progress towards outcome (end of 2015): Modeling and selection of parameters and designing of index-based flood insurance product for testing/ validation in selected states/districts will be completed.

Annual progress towards outcome (end of 2017): Institutional framework and financial mechanism for scaling up/out of IBFI developed. The project focuses on rising awareness among insurance regulators and concerned Ministries to promote scaling out in the States.

Annual progress towards outcome (end of 2018): 2 initiatives in India and Bangladesh implemented jointly by insurance industries and National/State Governments.

Lessons regarding your Theory of Change and implications for the coming planning cycle; e.g. how have your assumptions changed, or do you have stronger evidence for them:* With the launch of new insurance scheme in India and the need to strengthen our contribution with the use of new technologies and business model feasibility studies will support government in research prioritizing and investments in climate safety nets.

4.2 CCAFS Outcomes

RP SAs Outcome 2019: Boundary partners are developing better business models for public-private partnerships for climate informed agriculture risk management at different scales

Indicator #1: Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities

2019
<p>Target value: 2</p> <p>Cumulative target to date: 3</p> <p>Target narrative: 2 national/sub-national initiatives that incorporate flood insurance products developed by the project</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>
2015
<p>Target value: 0</p> <p>Cumulative target to date: 0</p> <p>Target narrative: Project will focus on developing flood insurance projects in three countries</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>

2016

Target value: 1

Cumulative target to date: 1

Target achieved: 1.0

Target narrative: 1 national/sub-national initiatives that incorporate flood insurance products in collaboration with insurance industry and governments

Narrative for your achieved targets, including evidence: The government of India, valued the development of first flood index insurance product and they are keen to experiment the product within the new crop insurance scheme. Some are working with the project team to implement this within existing policies and plans at the next level. Additionally we are providing crop insurance advisory services in supporting insurers of the PMFBY to provide parameters on mid-season and localized calamity on the flood crop losses using satellite technology. Our initiative has led in precise flood damage estimates and contributed indirectly to 349,074 insured farmers and insuring 307,677.3 hectares of farm fields.

Narrative for your achieved annual gender and social inclusion contribution to this CCAFS

outcome: Gender studies in the pilot village reveal that marginalized farmers and women are well aware of goals of IBFI and are keen to participate in the IBFI insurance scheme as they experience issues on flood and crop losses. They are welcoming of the intervention because the IBFI can help in transfer of risk through insurer and they would be able to take more credit loans for better agriculture inputs to achieve agriculture production and overall livelihood improvement.

The expected annual gender and social inclusion contribution to this CCAFS outcome: The baseline socio-economic data collection in pilot villages for both the countries (quantitative & qualitative) will help us in understanding the local perception on flood risk and gender dimension. The broad range of analysis including livelihoods analysis, social and gender differentiated analysis, gender & equity analysis. Assessment of how IBFI interventions may benefit/affect gender as well as other socially disaggregated groups differently in flood risk zones.

Major Output groups:

- F4 (before F2 - James): Weather related Insurance products are designed, tested, and brought to scale with implementing partners

4.3 Other Contributions

Contribution to other CCAFS Impact Pathways:

<Not Defined>

Collaborating with other CRPs

<This project does not have a CRP selected yet.>

4.4 Case Studies

No case studies added

5. Project outputs

5.1 Overview by MOGs

Major Output groups - 2019

F4 (before F2 - James): Weather related Insurance products are designed, tested, and brought to scale with implementing partners

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: <Not Defined>

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Major Output groups - 2016

F4 (before F2 - James): Weather related Insurance products are designed, tested, and brought to scale with implementing partners

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: We expect wider contribution in index and insurance design, gender-specific needs, communication and capacity challenges at scale, public-private partnerships, and sustainable business models. We also contribute to evidence of pilot implementation that support the livelihoods of vulnerable households by protecting productive assets and enabling access to credit and improved technologies.

Brief summary of your actual 2016 contribution towards the selected MOG: IBFI approach for enhanced adaptive capacity and resilience defined and developing plans are for implementation in India and possibly in Bangladesh and business models with feasibility case studies will support in upscaling and climate investments.

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output: In 2016, the study on demand for flood insurance among different categories of farmers and their willingness to pay will be analyzed (WTP). The activities includes baseline socio-economic data collection of pilot sites(quantitative & qualitative) including livelihoods analysis, social and gender differentiated analysis, gender & equity analysis.

Summary of the gender and social inclusion dimension of the 2016 outputs: The project is beginning to understand how IBFI interventions could differentially affect women and different socially groups with the view to generating benefits through the enabling greater inclusion of into IBFI processes.

Major Output groups - 2015

F4 (before F2 - James): Weather related Insurance products are designed, tested, and brought to scale with implementing partners

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: IBFI approach for enhanced agriculture resilience and flood proofing livelihoods which will be implemented in India and Bangladesh and emerging plans in 2016 for intermediate upscaling.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Beginning to understand how IBFI interventions could differentially affect women and socially dis-aggregated groups with the view of enabling greater inclusion of into IBFI processes

Major Output groups - 2014

F4 (before F2 - James): Weather related Insurance products are designed, tested, and brought to scale with implementing partners

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

5.2 Deliverables

D561 - Report on benefit-cost analysis of index based insurance products and product design

Main Information

Type: Reports and other publications

Subtype: Discussion paper/Working paper/White paper

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- Gender

Gender level(s):

- Diagnostics/analysis to understand gender issues

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: Other

Dissemination URL:

<https://drive.google.com/open?id=0B4Kuoqlw4I9qYI9sQXcxVEY0dWc>

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: IBFI Economic Analysis

Description / Abstract: IBFI cost and benefit analysis and assessment on ex-ante disaster risk financing

Publication / Creation date: <Not Defined>

Language: English

Country: India and Bangladesh

Keywords: index insurance, economic analysis, damage and losses, risk financing

Citation: <Not Defined>

Handle: <Not Defined>

DOI: <Not Defined>

Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

IWMI-F4 (before F2 - James)-SAs-P41 - Research Project

Submitted on 2017-02-17 at 17:19 (Reporting cycle 2016)



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Institution	Partner	Type
IWMI - International Water Management Institute	Amarnath, Giriraj <a.giriraj@cgiar.org>	Responsible

D563 - Workshop report on Flood Hazard Model and Choice Experiment Design among policy makers

Main Information

Type: Training materials

Subtype: Lecture/Training Course Material

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- N/A

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: Other

Dissemination URL:

<https://drive.google.com/open?id=0B4Kuoqlw4I9qYzNqb3FqUXN0THc>

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Workshop Report

Description / Abstract: Detail activity report for 2016 available on various components of the project.

Publication / Creation date: <Not Defined>

Language: English

Country: India

Keywords: index insurance, remote sensing, modeling, floods, Bihar, India,

Citation: <Not Defined>

Handle: <Not Defined>

DOI: <Not Defined>

Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

Institution	Partner	Type
IWMI - International Water Management Institute	Amarnath, Giriraj <a.giriraj@cgiar.org>	Responsible

D358 - Report on preferences of insurance products and financial feasibility studies

Main Information

Type: Reports and other publications

Subtype: Discussion paper/Working paper/White paper

Status: Complete

Year of expected completion: 2015

New expected year: 2016

Cross-cutting dimension:

- N/A

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: Other

Dissemination URL:

<https://drive.google.com/open?id=0B4Kuoqlw4l9qanltQVJpWEJmbVE>

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: IBFI Scoping Report

Description / Abstract: IBFI preferences of insurance products among local communities and financial feasibility studies for product sustainability

Publication / Creation date: IWMI

Language: English

Country: India, Bangladesh

Keywords: index insurance, remote sensing, modeling, floods, Bihar, India,

Citation: <Not Defined>

Handle: <Not Defined>

DOI: <Not Defined>

Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

Institution	Partner	Type
IWMI - International Water Management Institute	Amarnath, Giriraj <a.giriraj@cgiar.org>	Responsible
IWM - Institute of Water Modeling	Masud, Md. Sohel<msm@iwmbd.org>	Other

D2187 - IBFI Short Documentary film

Main Information

Type: Outreach products

Subtype: Multimedia

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- Gender

Gender level(s):

- Diagnostics/analysis to understand gender issues

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: Other

Dissemination URL:

<https://www.youtube.com/watch?v=OcdEsbF3RFY>

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: IBFI Film

Description / Abstract: A short film on the IBFI concept and stakeholders inputs and interaction with farmers on the benefits of IBFI implementation in disaster risk reduction measures and agriculture resilience in India.

Publication / Creation date: <Not Defined>

Language: English

Country: India

Keywords: index insurance, remote sensing, modeling, floods, Bihar, India,

Citation: <Not Defined>

Handle: <Not Defined>

DOI: <Not Defined>

Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

Institution	Partner	Type
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IWMI-F4 (before F2 - James)-SAs-P41 - Research Project

Submitted on 2017-02-17 at 17:19 (Reporting cycle 2016)



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



IWMI - International Water Management Institute	Amarnath, Giriraj <a.giriraj@cgiar.org>	Responsible
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D2188 - IBFI Project Brief

Main Information

Type: Outreach products

Subtype: Brochure

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- N/A

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination URL:

Dissemination Channel: Other

<http://ibfi.iwmi.org/Data/Sites/37/pdf/increasing-agricultural-resilience-and-flood-proofing-livelihoods-in-bihar-india.pdf>

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Project Brief

Description / Abstract: Document provides details of the project concept and implementation on IBFI.

Publication / Creation date: <Not Defined>

Language: English

Country: India

Keywords: index insurance, remote sensing, modeling, floods, Bihar, India,

Citation: <Not Defined>

Handle: <Not Defined>

DOI: <Not Defined>

Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

Institution	Partner	Type
IWMI - International Water Management Institute	Amarnath, Giriraj <a.giriraj@cgiar.org>	Responsible

D2189 - IBFI Project Website

Main Information

Type: Outreach products

Subtype: Website

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- N/A

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: Other

Dissemination URL: <http://ibfi.iwmi.org>

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Index Based Flood Insurance Project Website

Description / Abstract: Project website provides details on the concept and approach, resources and data, News and Events and ongoing progress are periodically updated in the website.

Publication / Creation date: <Not Defined>

Language: English

Country: India, Bangladesh

Keywords: index insurance, remote sensing, modeling, floods, Bihar, India,

Citation: <Not Defined>

Handle: <Not Defined>

DOI: <Not Defined>

Creator / Authors: <Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type
IWMI - International Water Management Institute	Amarnath, Giriraj <a.giriraj@cgiar.org>	Responsible

D317 - Index-based Flood Insurance product in Bangladesh and India

Main Information

Type: Data, models and tools

Subtype: Data portal/Tool/Model code/Computer software

Status: Extended

Year of expected completion: 2015

New expected year: 2016

Justification of new expected date of completion: For both the countries (India and Bangladesh) flood hazard model is being developed and are in final stage to derive flood parameters in product design and implementation. Activities including river profile along the pilot villages, establishing water level gauges for evaluation during 2016 IBFI implementation as well as finalizing flood insurance app for one stop tool for insurer, policy holder and government monitoring the programme.

Cross-cutting dimension:

- N/A

Deliverable dissemination

Is this deliverable already disseminated: No

Open access: No

Open access restriction: Limited Exclusivity Agreements

License adopted: <Not Defined>

Deliverable Metadata

Disseminated title: <Not Defined>

Description / Abstract: Development of flood hazard model for pilot sites in India and Bangladesh. Details on flood parameters that will be used in pricing and structuring the product will be included.

Publication / Creation date: 2016

Language: English

Country: <Not Defined>

Keywords: <Not Defined>

Citation: <Not Defined>

Handle: <Not Defined>

DOI: <Not Defined>

Creator / Authors: <Not Defined>

Deliverable Data sharing

Deliverable files:

<Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type
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IWMI - International Water Management Institute	Amarnath, Giriraj <a.giriraj@cgiar.org>	Responsible
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5.3 Project Highlights

No project highlights added

6. Activities

A216 - Testing and evaluation of IBFI in the selected districts/States in cooperation with insurance industry

Description: There will be three broad activities including: (1) Evaluation and monitoring of flood index parameters for the IBFI scheme that contributes the exacerbated situation of flood damages to agriculture; (2) develop business models acceptable to farmers as well as the insurance industry; and (3) prototype development of insurance contract with insurance companies -governments on the IBFI scheme

Start date: Jan 2016

End date: Dec 2017

Activity leader: IWMI - International Water Management Institute Amarnath, Giriraj
<a.giriraj@cgiar.org>

Status: On-going

Overall activity or progress made during this cycle: The activity are in steady progress for successful testing and implementation of IBFI. We have budget cuts in 2016 and trying to address through bilateral funding contribution, however we see some implementation limitation.

Deliverables in this activity:

- D2155: Business Model and Scaling Up of Index Based Flood Insurance (IBFI)

A217 - IBFI scheme scaling-up and institutional framework to support governments and the private sector

Description: For 2018, there will be three broad activities including: (1) evolve institutional framework for larger acceptability of the insurance products; (2) assessment on index-based insurance implementation and sustainability; (3) workshop on the success of IBFI and scaling up process for long-term sustainability of the programme.

Start date: Jan 2017

End date: Dec 2018

Activity leader: IWMI - International Water Management Institute Amarnath, Giriraj
<a.giriraj@cgiar.org>

Status: On-going

Overall activity or progress made during this cycle: IFPRI partnership for 2016 has been dropped with no funds allocated. We are internally exploring to initiate the 2016 activities by identifying internal staff and external partners, as this will be very important for developing successful scaling strategy and develop business model for government to implement in a large-scale.

Deliverables in this activity:

- D800: IBFI Workshop report and scaling up process for long-term sustainability of the programme

7. Leverages

No leverages added

Title: Participatory Evaluation of Climate-Smart Agriculture (CSA) in Different Agro-Ecological Zones of South Asia

1. Description

Start date	End date	Management liaison	Mgmt. liaison contact
Jan 2015	Dec 2016	RP SAs	Aggarwal, Pramod <P.K.Aggarwal@cgiar.org>

Funding source types	Status	Lead Organization	Project leader
W1/W2	Complete	IWMI - International Water Management Institute - Sri Lanka	Khatrri Chhetri, Arun <A.Khatrri-Chhetri@cgiar.org>

Project is working on

Flaship(s)
F1 (before F4 - Philip): Priorities and Policies for CSA
F2 (before F1 - Andy): Climate-Smart Technologies and Practices
F3 (Lini): Low emissions development
F4 (before F2 - James): Climate services and safety nets

Region(s)
SAs: South Asia

Project summary

This project aims to identify, test and evaluate several CSA technologies and practices across the agro-ecological zones of South Asia. This will primarily involve creating evidences using literature review, test and evaluate several CSA technologies in farmers' fields, simulation modelling, and socio-economic surveys. This activities will help to bridge the research gaps and supplement the flagship projects for scaling out climate smart agriculture in the region. The project also aims to explore the wider enabling environment for scaling out CSA through different CSV models. Institutional and business models of CSVs will be developed and evaluated working in collaboration with various stakeholders at national, sub-national and local levels.

2. Partners

Partner #1 (Leader)

Institution: IWMI - International Water Management Institute

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Project Leader	Khatri Chhetri, Arun <A.Khatri-Chhetri@cgiar.org>	Design, implement and M&E of the project in different different agro-ecological zones of South Asia.	HQ

Partner #2

Institution: IAAS - Institute of Agriculture and Animal Science

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Gairhe, Janmajaya <janmajaya@gmail.com>	This partner is involving in testing and evaluation of the portfolios of climate smart technologies and practices in the farmers fields at different locations in Nepal.	HQ

Partner #3

Institution: CIMMYT - Centro Internacional de Mejoramiento de Maíz y Trigo

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Jat, ML <m.jat@cgiar.org>	Test and evaluate the portfolios of climate smart technologies and practices in the farmers fields at different locations in India	New Delhi, India
Partner	Aggarwal, Pramod <P.K.Aggarwal@cgiar.org>	Project M&E	HQ

Partner #4

Institution: WorldFish - WorldFish

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Meisner, Craig <C.Meisner@cgiar.org>	This partner assesses climate change adaptation potential of fish farming system in Bangladesh and explore new ways of helping rural vulnerable communities adjust to climate change and variability. The project involves pilot testing and evaluation of climate smart practices and technologies in farmers field and provide policy inputs to the Government of Bangladesh. The key activities includes: establishment of participatory technology evaluation (PTE) trails with selected farmers; design and implement monitoring framework for PTE trails; and analyses of PTE trail results to identify the most promising climate-smart interventions and contribute to the out-scaling of the outputs.	Dhaka, Bangladesh

Partner #5

Institution: PAC - Practical Action Consulting

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Joshi, Milan K. <Milan.Joshi@practicalaction.org.np>	This partner is testing and evaluating the portfolios of climate smart technologies and practices in the farmers fields at different locations involving with private companies in Nepal. This partners is testing and evaluation of CSA technologies in three crops (Rice, Maize and Sugarcane) in flood and drought prone areas of eastern Nepal.	HQ

Partner #6

Institution: ICRISAT - International Crops Research Institute for the Semi-Arid Tropics

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Whitbread, Anthony <a.whitbread@cgiar.org>	This partner is testing and evaluating the portfolios of climate smart technologies and practices in rainfed/dry land agricultural system in India. This partner generates evidences of CSA/CSV for scaling out in the rainfed/dry land agricultural system.	Patancheru, India

Partner #7

Institution: LI-BIRD - Local Initiatives for Biodiversity, Research and Development

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Paudel, Bikash <bpaudel@libird.org>	This partner involves in piloting, evaluation and developing plans/schemes for scaling out different models of Climate-Smart Village in Nepal. The partner will provide: evidences related to economic, social and environmental impacts of different CSA practices and CSV models; comparative advantages of CSV models in terms of social, economic and environmental benefits and their suitability across different agro-ecological zones; operation plans for scaling up/out of CSV models including financial and institutional mechanisms, implementation strategies and scaling out and implement CSV models in Nepal.	HQ

Lessons regarding your partnerships and possible implications for the coming planning cycle:

Year	Lesson(s)
2016	This project continued in helping to bring CGIAR centers, NARS and private sectors together for participatory evaluation of Climate-Smart Agricultural (CSA) technologies/practices in farmer's fields and NARS's research stations. Climate-Smart Village (CSVs) pilots implemented by different partners are becoming learning platforms for climate-smart interventions in agriculture and allied sectors. Partners are also able to bring many key stakeholders to the CSV pilot sites and sharing knowledge and information to them. These activities and involvement of national and local partners helped to develop scaling up/out schemes for CSA/CSV and integrate into adaptation policies and programs.

Partnerships overall over the last reporting period:

All partners of this project have played a major role in designing and implementation of several climate-smart agricultural (CSA) technologies and practices in different agro-ecological zones. They have significantly contributed to test and evaluate CSA technologies and practices, review of policy and plans, and data collection to generate evidences of CSA and scaling out through climate-smart village approach. Major partners are ensuring their deliverable on time and regularly engaging with key stakeholders. Project partners have also facilitate in engagement and communication with CSA/CSV key stakeholders and ensure project outcome in India and Nepal.

3. Locations

This project is not global

Project level	Latitude	Longitude	Name
Country			Bangladesh
Country			India
Country			Nepal

4. Outcomes

4.1 Project Outcomes

Project Outcome statement:

The first project activity will demonstrate the evidences of climate-smart village program in supporting sustainable agricultural development in different agro-ecological zones. Second project activity will result in three National Adaptation Plans and State Action Plans at sub-national level for India. Improved weather thresholds will be developed for millions of farmers. Agencies responsible for food security planning and monitoring will start using CCAFS science and tools for increased adaptive capacity to climatic risks. Third project activity will help to achieve CCAFS regional targets within the impact pathway and pave the way to accomplish regional vision of large-scale investment in science-informed climate smart agriculture practices, institutions and policies in the region, leading to long-term food security and poverty alleviation

Annual progress towards outcome (end of 2016*): Evaluate CSA practices and technologies in different agro-ecological zones of South Asia Development of adaptation plan at least 1 national/sub-national level Organize workshops under various CCAFS themes and engage with various stakeholders at regional, national and sub-national level

Annual progress towards project outcome in the current reporting cycle (2016*): CCAFS-SA has worked with local and national partners and policy makers to assist farmers in reducing or eliminating the growing impact of changing climate through different approaches. We have focused on equipping farmers to use climate-smart scientific interventions and innovations, use climate information for cropping decisions, diversify livelihoods, link to markets and make agriculture profitable, rehabilitate and restore their environment and influence policy makers at different levels. Various portfolios of CSA options have been tested and evaluated under different approaches of CSVs. A community-based integrated technology transfer approach of CSV in Nepal and Bangladesh has helped farmers to test, evaluate and adopt various CSA technologies in their farms. CCAFS-SA has developed a strong partnership with Ministry of Agricultural Development in Nepal. Recognizing the importance of tackling climate change and its impact on agriculture, the Government of Nepal has started to implement CSV approach as part of efforts to adapt to changing climate in Nepal. CCAFS-SA and ICRISAT have implemented multiple approaches of CSVs in Telangana and Andhra Pradesh of India. Watershed Management and Climate/Crop Modelling Approaches of CSVs have focused on rehabilitating agroecosystems and deploys a pool of CSA technologies and crop advisories which have helped in increasing crop yields and incomes of farmers. This CSV approach is being scaled out in the Telangana in collaboration with Telangana State Government . Similarly, Solar Pump Irrigator's Cooperative Enterprise (SPICE) model of Water-Energy-Food Security management integrating with various CSA options has been tested and evaluated in Gujarat and Bihar States of India. Members of this cooperative are using solar power not only to run their irrigation pumps, but also pooling the surplus energy to sell to the electricity company. This model has been recognized by the State Government of Gujarat and plans to scaling out in the State from 2017.

How communication and engagement activities have contributed to achieving your Project outcomes:* CCAFS-SA team has extensively engaged with local and national partners and provided

technical guidance and knowledge for design, implementation and M&E of the projects. CCAFS has also involved in field visits, capacity building training, exposure of partner organizations to international knowledge forums, and M&E of the project activities in each sites. CCAFS- SA also regularly engaged with scientists and researchers, policy makers, investment partners, development institutions, farmers, and political leaders in all project locations to inform CCAFS project activities, potential outputs and use in climate change adaptation policies at national, sub-national and local levels.

Evidence documents of progress towards outcomes:*

<https://marlo.cgiar.org/data/ccafs/projects//61/projectOutcome/CSV-CSA%20Report%202016-SA.pdf>

Annual progress towards outcome (end of 2015): Evidences of climate-smart agricultural practices and technologies in the different agro-ecological zones of Bangladesh, India and Nepal Bio-physical, socio-economic and institutional implications of climate-smart village model across the agro-ecological zones

Annual progress towards outcome (end of 2017): NA

Annual progress towards outcome (end of 2018): NA

lessons regarding your Theory of Change and implications for the coming planning cycle; e.g. how have your assumptions changed, or do you have stronger evidence for them:* Engagement with different stakeholders and participatory test and evaluation of single and/or portfolio of CSA options are key for scaling-up and scaling-out of different approaches of CSVs in the region that can help to scale out CSA to adapt changing climate and improve livelihood of farming communities.

4.2 CCAFS Outcomes

RP SAs Outcome 2019: Boundary partners are developing better business models for public-private partnerships for climate informed agriculture risk management at different scales

Indicator #1: Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities

2019
<p>Target value: 0</p> <p>Cumulative target to date: 2</p> <p>Target narrative: This project supplements flagship projects to achieve regional outcome targets in South Asia. CCAFS South Asia targets to develop three national or subnational level CSA initiatives informed by CCAFS Science leading to at least 50,000 to 10 million beneficiaries.</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>
2015
<p>Target value: 0</p> <p>Cumulative target to date: 0</p> <p>Target narrative: No target</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>

2016

Target value: 2

Cumulative target to date: 2

Target achieved: 0.0

Target narrative: This project supplements flagship projects to develop two national or subnational level CSA initiatives informed by CCAFS science leading to at least 50,000 to 10 million beneficiaries

Narrative for your achieved targets, including evidence: Developing business model of public-private partnership for CSV and highly scalable CSA technologies/services and will be tested and evaluated by 2018. CCAFS-SA has already started to work with a private company (i.e. ITC Limited) to develop the model.

Narrative for your achieved annual gender and social inclusion contribution to this CCAFS outcome: This business model on public-private partnership for CSV/CSA will also target involvement of youth and opportunity for them.

The expected annual gender and social inclusion contribution to this CCAFS outcome: At least 40% beneficiaries would be women and youth.

Major Output groups:

- F4 (before F2 - James): New climate information and analysis that enhances the capacity of data providers (e.g. regional and national meteorological institutions) to meet the demands of climate service beneficiaries
- F4 (before F2 - James): New knowledge, capacity, and tools supporting the provision of equitable climate services for farmers are developed

RP SAs Outcome 2019: Governments and global organizations make rational decisions about mitigation based on local, regional and global evidences about mitigation potential in agriculture

Indicator #1: # of low emissions plans developed that have significant mitigation potential for 2025, i.e. will contribute to at least 5% GHG reduction or reach at least 10,000 farmers, including at least 10% women.

2019
<p>Target value: 0</p> <p>Cumulative target to date: 0</p> <p>Target narrative: This project will also assess the GHG mitigation options in different agriculture systems across the region. The target will be filled after the completion of assessment of mitigation potential in agriculture.</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>
2015
<p>Target value: 0</p> <p>Cumulative target to date: 0</p> <p>Target narrative: NA</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>

2016

Target value: 0

Cumulative target to date: 0

Target achieved: 0.0

Target narrative: NA

Narrative for your achieved targets, including evidence: NA

Narrative for your achieved annual gender and social inclusion contribution to this CCAFS outcome: NA

The expected annual gender and social inclusion contribution to this CCAFS outcome: NA

Major Output groups:

- F3 (Lini): Methods and data for quantifying low-emissions agriculture options appropriate to smallholder farmers

RP SAs Outcome 2019: National and sub-national governments develop climate-smart agriculture policies and strengthen related institutions based on evidences from case studies, data, tools, and models

Indicator #1: # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

2019

Target value: 0

Cumulative target to date: 1

Target narrative: Project activities on flagship 1, 2, and 3 outcomes will complement to this outcome. The project outputs supplement flagship projects to achieve regional outcome targets in South Asia. CCAFS South Asia targets to develop three national or sub national level CSA initiatives informed by CCAFS Science in coordination with flagship projects in the region.

The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined>

2015
<p>Target value: 0</p> <p>Cumulative target to date: 0</p> <p>Target narrative: No target</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>
2016
<p>Target value: 1</p> <p>Cumulative target to date: 1</p> <p>Target achieved: 0.0</p> <p>Target narrative: This project supplements flagship projects to develop at least one national or subnational level CSA initiatives informed by CCAFS Science leading to at least 50,000 to 10 million beneficiaries</p> <p>Narrative for your achieved targets, including evidence: NA</p> <p>Narrative for your achieved annual gender and social inclusion contribution to this CCAFS outcome: NA</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: At least 40% beneficiaries would be women and youth.</p>

Major Output groups:

- F1 (before F4 - Philip): Improved national planning processes through policy analyses, (re)formulation and implementation; and stakeholder analyses and engagement through scenarios, learning alliances and science-policy dialogues
- F1 (before F4 - Philip): Priority setting contextualised with national stakeholders and capacity strengthened to apply outputs in policy formulation; including trade-off analyses, foresight activities, and quantification of regional socio-economic scenarios

RP SAs Outcome 2019: Governments, private sector and farmer organizations increase their investments and develop incentive mechanisms to promote wide scale adoption of improved climate-smart practices and technologies

Indicator #1: # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

2019
<p>Target value: 0</p> <p>Cumulative target to date: 2</p> <p>Target narrative: This project supplements flagship projects to achieve regional outcome targets in South Asia. CCAFS South Asia targets to develop three national or subnational level CSA initiatives informed by CCAFS Science leading to at least 50,000 to 10 million beneficiaries</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>
2015
<p>Target value: 0</p> <p>Cumulative target to date: 0</p> <p>Target narrative: No target</p> <p>The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined></p>

2016

Target value: 2

Cumulative target to date: 2

Target achieved: 2.0

Target narrative: CCAFS South Asia supplement flagship projects to develop two national or subnational level CSA initiatives informed by CCAFS Science leading to at least 50,000 to 10 million beneficiaries

Narrative for your achieved targets, including evidence: Government of Nepal has started to implement CSV approach as a part of climate change adaptation in agriculture and allied sector in Nepal. Private sector initiatives to scaling out CSA through CSV approach in 2000 villages in 3 states of India has been started in 2016.

Narrative for your achieved annual gender and social inclusion contribution to this CCAFS

outcome: Selection, testing and evaluation of CSA option target gender and social inclusion in the CSVs. Women's involvement and adoption benefits for small and marginal farmers were explicitly considered in the CSA/CSV projects implementation process. For instance, about 50% CSV pilots in Nepal are managed by Women Farmers Group and all CSVs are ensuring the active participation of young farmers and smallholders. Similarly, in India and Bangladesh, a robust gender-responsive framework for targeting and implementing climate smart agricultural practices in the CSVs has been developed and implemented in order to ensure gender and social inclusion in the projects activities.

The expected annual gender and social inclusion contribution to this CCAFS outcome: At least 40% beneficiaries would be women and youth.

Major Output groups:

- F2 (before F1 - Andy): Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (LAM, WA, EA, SA, SEA)
- F2 (before F1 - Andy): Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning (LAM, WA, EA, SA, SEA)
- F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)
- F2 (before F1 - Andy): Innovative knowledge management systems (ICT, information network, multi-stakeholder platforms, learning alliances, fora etc) and strategic engagements approaches and partnerships that promote access, co-creation, capacity building, learning, 2 ways sharing and dissemination of CSA information and tools to farmers, extension services, agro-dealer networks, local governments, private sector, academia etc. (LAM, WA, EA, SA, SEA)

4.3 Other Contributions

Contribution to other CCAFS Impact Pathways:

Testing, evaluating and scaling out climate smart agricultural practices, technologies and services across different agro-ecological zones of South to minimize climate change impact on agriculture and improve food security in farming households

Collaborating with other CRPs

<This project does not have a CRP selected yet.>

4.4 Case Studies

Case Study #111

Title: Scaling out climate smart agriculture through CSV approach

Year: 2016

Project(s): P119

Outcome Statement: Different CSV approaches have been designed, implemented and evaluated in collaboration with NARS, local partners and farmers groups including women, youth and marginal farmers. As the results, the Government of Nepal has started to scale out CSA through CSV approach, ITC Limited and USAID are investing to develop more than 2,000 CSVs in 6 states in India, and the State Government of Gujarat plan to invest on developing large number Solar Pump Irrigators' Cooperative Enterprise.

Research Outputs: 1. Prioritization, testing and evaluation of a range of CSA options in CSVs across South Asia (report attached) 2. CSV Brochure (attached) 3. Blogs (attached) 4. Journal papers (in pipeline)

Research Partners: Nepal: Ministry of Agricultural Development (MoAD), Department of Environment (DoE), National Planning Commission (NPC), Nepal Agriculture Research Council (NARC), LI-BIRD, Practical Action Consulting India: State Department of Agriculture, ICAR Bangladesh: Bangladesh Agricultural Research Institute (BARI), Bangladesh Agricultural University (BAU), Department of Fisheries (DoF), WorldFish

Activities: 1. Identification, prioritization, testing and evaluation of a range of CSA technologies, practices and services in collaboration with farmers and other key stakeholders in the CSVs and other sites 2. Continuous engagement and communication with local, state and national partners 3. Development and dissemination of various communication products such as brochure, blogs and workshop reports

Non-Research Partners: District and Village Development offices in Nepal, ITC limited and USAID in India and farmers cooperatives and groups in all CSV locations

Output Users: Local, state and national agriculture development offices, private sector, service providers and rural and agricultural development agencies and NGOs.

Evidence Outcome: 1. Nepal government vows to implement Climate-Smart Village model as part of key policies for 2016-17 2. Gujarat's energy minister announced in a public meeting that they are issuing 20,000 new solar pumps on CCAFS-IWMI's model 3. Increasing Adaptive Capacity of Farmers to Climate Change thru Climate-Smart Villages in India

Output Used: Designing and implementation of different approaches of CSVs

References Case: 1.

<https://ccafs.cgiar.org/blog/nepal-government-vows-implement-climate-smart-village-model-part-key-policies-2016-17#.WKVpqjt95hE> 2. Contract between CCAFS and ITC Limited (Attached) 3. Nepal Government's annual policy 2016-17 (attached)

Primary 2019 outcome indicator(s):

- # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools
- # of public-private actors at national and sub-national levels are using new incentive mechanisms or business models/ markets that explicitly promote climate smart approaches along the value chain, using CCAFS science
- Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities
- # millions of hectares targeted by research-informed initiatives for scaling up low-emissions agriculture and preventing deforestation
- # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

Link between outcome story and and the FP Outcome(s): This regional work contribute FP outcome

Annex uploaded:

<https://marlo.cgiar.org/data/ccafs/projects//61/caseStudy/Policies%20and%20Programme%20of%20the%20GoN%20FY%202016-17.pdf>

5. Project outputs

5.1 Overview by MOGs

Major Output groups - 2019

F2 (before F1 - Andy): Innovative knowledge management systems (ICT, information network, multi-stakeholder platforms, learning alliances, fora etc) and strategic engagements approaches and partnerships that promote access, co-creation, capacity building, learning, 2 ways sharing and dissemination of CSA information and tools to farmers, extension services, agro-dealer networks, local governments, private sector, academia etc. (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: <Not Defined>

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

F4 (before F2 - James): New knowledge, capacity, and tools supporting the provision of equitable climate services for farmers are developed

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: <Not Defined>

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

F4 (before F2 - James): New climate information and analysis that enhances the capacity of data providers (e.g. regional and national meteorological institutions) to meet the demands of climate service beneficiaries

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: Systematic deviations, that are also useful for boundaries of agroclimate zones and farmer field schools

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

F3 (Lini): Methods and data for quantifying low-emissions agriculture options appropriate to smallholder farmers

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: <Not Defined>

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

F1 (before F4 - Philip): Improved national planning processes through policy analyses, (re)formulation and implementation; and stakeholder analyses and engagement through scenarios, learning alliances and science-policy dialogues

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: <Not Defined>

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output:
<Not Defined>

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: <Not Defined>

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output:
<Not Defined>

F2 (before F1 - Andy): Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: <Not Defined>

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output:
<Not Defined>

F2 (before F1 - Andy): Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: <Not Defined>

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output:
<Not Defined>

F1 (before F4 - Philip): Priority setting contextualised with national stakeholders and capacity strengthened to apply outputs in policy formulation; including trade-off analyses, foresight activities, and quantification of regional socio-economic scenarios

Brief bullet points of your expected annual 2019 contribution towards the selected MOG: <Not Defined>

Brief 2019 plan of the gender and social inclusion dimension of the expected annual output:
<Not Defined>

Major Output groups - 2016

F2 (before F1 - Andy): Innovative knowledge management systems (ICT, information network, multi-stakeholder platforms, learning alliances, fora etc) and strategic engagements approaches and partnerships that promote access, co-creation, capacity building, learning, 2 ways sharing and dissemination of CSA information and tools to farmers, extension services, agro-dealer networks, local governments, private sector, academia etc. (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: NA

Brief summary of your actual 2016 contribution towards the selected MOG: The CSV approach integrate dissemination of ICT based climate information and agro-advisory services to the farmers, involvement of different stakeholders and community based organizations in designing, implementation and M&E of CSV program and capacity building and knowledge sharing among the stakeholders.

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output: NA

Summary of the gender and social inclusion dimension of the 2016 outputs: Key stakeholders also includes gender and social inclusions. Gender and social inclusion were also considered during training and capacity building activities.

F4 (before F2 - James): New knowledge, capacity, and tools supporting the provision of equitable climate services for farmers are developed

Brief bullet points of your expected annual 2016 contribution towards the selected MOG:

Increasing awareness about weather forecasts and own observations, analysing actions is expected to lead to new knowledge and improved adaptive capacity

Brief summary of your actual 2016 contribution towards the selected MOG: NA

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output:

Provide guidelines to mainstream gender in adaptation planning and implementation of projects

Summary of the gender and social inclusion dimension of the 2016 outputs: NA

F4 (before F2 - James): New climate information and analysis that enhances the capacity of data providers (e.g. regional and national meteorological institutions) to meet the demands of climate service beneficiaries

Brief bullet points of your expected annual 2016 contribution towards the selected MOG:

agroclimate handbook available at province and district level (there were none available) based on local analyses, farming systems and needs Compare forecasts and public metstation observation with observations done in village to compare differences

Brief summary of your actual 2016 contribution towards the selected MOG: NA

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output:

agroclimate handbooks and advisories take in to account local needs of W&EM (content, language, format etc)

Summary of the gender and social inclusion dimension of the 2016 outputs: NA

F3 (Lini): Methods and data for quantifying low-emissions agriculture options appropriate to smallholder farmers

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2016 contribution towards the selected MOG: Emission intensity and low-emissions agriculture options in CSVs were assessed in Bihar and Haryana. Low emission solar based irrigation system integrated with other CSA options have been promoted in the CSVs.

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2016 outputs: NA

F1 (before F4 - Philip): Improved national planning processes through policy analyses, (re)formulation and implementation; and stakeholder analyses and engagement through scenarios, learning alliances and science-policy dialogues

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2016 contribution towards the selected MOG: National and International level workshop on CSA and CSVs were organized where global, regional, national and local experts met in Nepal to discuss how climate-smart agriculture could be scaled-out through the Climate-Smart Village approach

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2016 outputs: Potential of mainstreaming gender and social inclusion in climate change adaptation plan and program were assessed in the workshops

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2016 contribution towards the selected MOG: CSV approach was integrated within the local development plan in Nepal, private company's outreach program and state government's agricultural technology promotion scheme in India.

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2016 outputs: Scaling out CSA through CSV approach explicitly integrate gender and social inclusion. Participation of gender and disadvantaged groups in the designing, implementation and M&E are well defined in the CSV approach of scaling out CSA.

F2 (before F1 - Andy): Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2016 contribution towards the selected MOG: Scaling out CSV approach in different agro-ecological zones include various CSA options and portfolios that were selected based on the evaluation of CSA indicators at farmers fields (Productivity, Resilience and Emissions), prioritization of key stakeholders and integration into the CSV implementation plans.

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2016 outputs: All CSA options recommended to promote in the CSVs were evaluated based on gender and social inclusion dimensions.

F2 (before F1 - Andy): Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2016 contribution towards the selected MOG: In many CSV locations, CSA technologies were evaluated based on biophysical, socio-economic and tradeoffs analyses. CSA prioritization framework (climate risk assessment, socio-economic assessment and prioritization of selected CSA options) has been developed and tested.

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2016 outputs: All CSA options were evaluated based on gender and social inclusion dimensions.

F1 (before F4 - Philip): Priority setting contextualised with national stakeholders and capacity strengthened to apply outputs in policy formulation; including trade-off analyses, foresight activities, and quantification of regional socio-economic scenarios

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2016 contribution towards the selected MOG: Identification, prioritization, assessment of a range of CSA technologies, practices and services has been done with key stakeholders including farmers, local NGOs, government officials in various ministries and departments and private sector representatives in India, Nepal and Bangladesh. Baseline socio-economic surveys, testing and evaluation of CSA options has been done.

Brief 2016 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2016 outputs: Gender and social inclusion dis-segregated data were collected. CSA technologies were also evaluated with gender and social inclusion lens.

Major Output groups - 2015

F2 (before F1 - Andy): Innovative knowledge management systems (ICT, information network, multi-stakeholder platforms, learning alliances, fora etc) and strategic engagements approaches and partnerships that promote access, co-creation, capacity building, learning, 2 ways sharing and dissemination of CSA information and tools to farmers, extension services, agro-dealer networks, local governments, private sector, academia etc. (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: This project has implemented CSA interventions in collaboration with NARS, agriculture universities, department of agriculture and local partners. CCAFS SA team has strategically engaged with key stakeholders and local partners to provide technical know-how and capacity building in project design, implementation and M&E.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Potential of inclusion of gender and small/marginal farmers in the CSV approach has assessed.

F4 (before F2 - James): New knowledge, capacity, and tools supporting the provision of equitable climate services for farmers are developed

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: Technical feasibility analysis of implementing ICT based agro-advisory system in pilot climate smart villages has been done. This project has identified the local vendor which disseminates mobile-based agro-advisory services in the CSV sites.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Not applicable

F4 (before F2 - James): New climate information and analysis that enhances the capacity of data providers (e.g. regional and national meteorological institutions) to meet the demands of climate service beneficiaries

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: This project has conducted climate risk assessments at sub-national and local levels and linked to CSA interventions to mitigate the climatic risks. These information enhances the capacity of data providers at sub-national and local levels o meet the demands of climate service beneficiaries.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Not applicable.

F3 (Lini): Methods and data for quantifying low-emissions agriculture options appropriate to smallholder farmers

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: This project has identified the technologies and practices which have GHG mitigation potential including adaptation of climatic risks. Technologies and practices that have mitigation potential were included in the field evaluation at different locations.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Not directly applicable for this project. Because this project is not exclusively looking at gender and social inclusions dimension in the project outputs

F1 (before F4 - Philip): Improved national planning processes through policy analyses, (re)formulation and implementation; and stakeholder analyses and engagement through scenarios, learning alliances and science-policy dialogues

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: Several high level engagements and communication meetings with key stakeholders of CSA/CSV have been done. Project has also reviewed current policy and institutional framework and CSA initiatives in different countries to provide inputs to develop scaling up/out plans.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: The review of current policy and institutional framework and CSA initiatives has assessed a potential of inclusion of gender and social issues in the CSA scaling up/out plans and programs at national, sub-national and local levels.

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: This project has developed CSV development framework, inventory of climate smart interventions including CSA practices and technologies and laid outline for scaling up and implementation plan. The project has also collected primary and secondary information to develop business and institutional models of CSV approach.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Gender segregated data are collected

F2 (before F1 - Andy): Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: Several CSA technologies and practices were identified and prioritized based on location specific climatic risks and stakeholders priorities (particularly farmers and local agriculture development offices). Pilot studies have started in collaboration with farmers, local governments, agricultural offices in different agro-ecological zones.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: CSA technologies and practices that could be relevant for gender and small/marginal farmers were identified and included in the pilot studies in the different agro-ecological zones.

F2 (before F1 - Andy): Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: Primary and secondary data were collected for developing business models including bio-physical, socio-economic and trade-off analyses.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Gender segregated data were collected to provide inputs into the business and institutional models of scaling out CSA/CSVs. .

F1 (before F4 - Philip): Priority setting contextualised with national stakeholders and capacity strengthened to apply outputs in policy formulation; including trade-off analyses, foresight activities, and quantification of regional socio-economic scenarios

Brief bullet points of your expected annual 2015 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2015 contribution towards the selected MOG: Several high level engagements and communication meetings with key stakeholders of CSA/CSV have been done. Several capacity building training on designing, implementation and M&E of CSA/CSV program at sub-national and local level were conducted. Baseline survey and CSA prioritization activities were also conducted.

Brief 2015 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2015 outputs: Gender and social issues were included in the project design, implementation and M&E framework.

Major Output groups - 2014

F3 (Lini): Methods and data for quantifying low-emissions agriculture options appropriate to smallholder farmers

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F1 (before F4 - Philip): Improved national planning processes through policy analyses, (re)formulation and implementation; and stakeholder analyses and engagement through scenarios, learning alliances and science-policy dialogues

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F2 (before F1 - Andy): Approaches, strategies and scaling up/out mechanisms (e.g CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (LAM, WA, SA, EA, SEA)

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output:
<Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F2 (before F1 - Andy): Innovative knowledge management systems (ICT, information network, multi-stakeholder platforms, learning alliances, fora etc) and strategic engagements approaches and partnerships that promote access, co-creation, capacity building, learning, 2 ways sharing and dissemination of CSA information and tools to farmers, extension services, agro-dealer networks, local governments, private sector, academia etc. (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output:
<Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F2 (before F1 - Andy): Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output:
<Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F2 (before F1 - Andy): Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning (LAM, WA, EA, SA, SEA)

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output:
<Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F1 (before F4 - Philip): Priority setting contextualised with national stakeholders and capacity strengthened to apply outputs in policy formulation; including trade-off analyses, foresight activities, and quantification of regional socio-economic scenarios

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F4 (before F2 - James): New knowledge, capacity, and tools supporting the provision of equitable climate services for farmers are developed

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

F4 (before F2 - James): New climate information and analysis that enhances the capacity of data providers (e.g. regional and national meteorological institutions) to meet the demands of climate service beneficiaries

Brief bullet points of your expected annual 2014 contribution towards the selected MOG: <Not Defined>

Brief summary of your actual 2014 contribution towards the selected MOG: <Not Defined>

Brief 2014 plan of the gender and social inclusion dimension of the expected annual output: <Not Defined>

Summary of the gender and social inclusion dimension of the 2014 outputs: <Not Defined>

5.2 Deliverables

D994 - Institutional and business models of climate smart village implementation in different agro-ecological zones

Main Information

Type: Reports and other publications

Subtype: Research workshop report

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- N/A

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination URL:

<https://cgjar.sharepoint.com/sites/CCAFS/CRP%207%20Management/Reviewing%20and%20Reporting/Annual%20Reporting/TL%20and%20RPL%20Technical%20Reporting/SouthAsia/Scaling%20up%20CSVs%20in%20Nepal.pdf>

Dissemination Channel: Other

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: NA

Description / Abstract: NA

Publication / Creation date: <Not Defined>

Language: NA

Country: NA

Keywords: NA

Citation: NA

Handle: NA

DOI: NA

Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

Institution	Partner	Type

LI-BIRD - Local Initiatives for Biodiversity, Research and Development	Paudel, Bikash <bpaudel@libird.org>	Responsible
ICRISAT - International Crops Research Institute for the Semi-Arid Tropics	Whitbread, Anthony<a.whitbread@cgiar.org>	Other

D995 - Report on gender and climate change adaptation in agriculture

Main Information

Type: Reports and other publications

Subtype: Research workshop report

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- Gender
- Capacity Development

Gender level(s):

- Diagnostics/analysis to understand gender issues
- Development of innovations/ interventions/ policies with explicit gender targeting
- Collection of sex-disaggregated data

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination URL:

<https://cgjar.sharepoint.com/sites/CCAFS/CRP%207%20Management/Forms/AllItems.aspx?RootFolder=%2Fsites%2FCCAFS%2FCRP%207%20Management%2FReviewing%20and%20Reporting%2FAnnual%20Reporting%2FTL%20and%20RPL%20Technical%20Reporting%2FSouthAsia&FolderCTID=0x012000035B9CF2D955604DABD96091A3976292&View=%7B917F221C%2DCAF2%2D48C8%2DA171%2DE006FC9CADD4%7D&InitialTabId=Ribbon%2ERead&VisibilityContext=WSSTabPersistence>

Dissemination Channel: Other

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: NA

Description / Abstract: NA

Publication / Creation date: <Not Defined>

Language: NA

Country: NA

Keywords: NA

Citation: NA

Handle: NA

DOI: NA

Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

Institution	Partner	Type
LI-BIRD - Local Initiatives for Biodiversity, Research and Development	Paudel, Bikash <bpaudel@libird.org>	Responsible
WorldFish - WorldFish	Meisner, Craig <C.Meisner@cgiar.org>	Other
ICRISAT - International Crops Research Institute for the Semi-Arid Tropics	Whitbread, Anthony <a.whitbread@cgiar.org>	Other

D650 - Evidences for viability of climate-smart interventions in major crops and cropping systems

Main Information

Type: Reports and other publications

Subtype: Research workshop report

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:
<Not Defined>

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination URL:

<https://cgiar.sharepoint.com/sites/CAAFS/CRP%207%20Management/Reviewing%20and%20Reporting/Annual%20Reporting/TL%20and%20RPL%20Technical%20Reporting/SouthAsia/CSV-CSA%20Report%202016-SA.pdf>

Dissemination Channel: Other

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Economic benefits of climate-smart agricultural practices to smallholder farmers in the Indo-Gangetic Plains of India

Description / Abstract: Small landholders can implement a range of climate smart agricultural (CSA) practices and technologies, in order to minimize the adverse effects of climate change and variability, but their adoption largely depends on economic benefits associated with the practices. To demonstrate the potential economic benefits of CSA practices, we conducted a study with smallholder farmers in the Indo-Gangetic Plains (IGP) of India. Among the CSA practices and technologies including use of improved crop varieties, laser land levelling, zero tillage, residue management, site specific nutrient management, and crop diversification, a majority of the farmers prefer to use improved crop varieties, crop diversification, laser land levelling and zero tillage practice. We estimated the cost of adoption, change in yields and income for the implementation of three major CSA practices in rice–wheat system. The average cost of adoption were +1,402, +3,037 and –1,577 INR ha^{–1} for the use of improved crop varieties, laser land levelling and zero tillage respectively. Results show that farmers can increase net return of INR 15,712 ha^{–1} yr^{–1} with improved crop varieties, INR 8,119 ha^{–1} yr^{–1} with laser levelling and INR 6,951 ha^{–1} yr^{–1} with zero tillage in rice–wheat system. Results also show that the combination of improved seeds with zero tillage and laser land levelling technologies can further improve crop yields as well as net returns. The econometric analysis indicates that implementations of CSA practices and technologies in smallholder farms in the IGP of India, have significant impacts on change in total production costs and yield in rice–wheat system.

Publication / Creation date: 2016-04-01

Language: English

Country: India

Keywords: Adoption, climate change, laser land levelling, rice–wheat system, zero-tillage

Citation: Khatri-Chhetri, A., Aryal, J.P., Sapkota, T.B., Khurana, R., 2016. Economic benefits of climate-smart agricultural practices to smallholders' farmers in the Indo-Gangetic Plains of India. Curr. Sci. 110 (7), 1251–1256.

Handle: <Not Defined>

DOI: 10.18520/cs/v110/i7/1251-1256

Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

Institution	Partner	Type
LI-BIRD - Local Initiatives for Biodiversity, Research and Development	Paudel, Bikash <bpaudel@libird.org>	Responsible
WorldFish - WorldFish	Meisner, Craig <C.Meisner@cgiar.org>	Other
ICRISAT - International Crops Research Institute for the Semi-Arid Tropics	Whitbread, Anthony <a.whitbread@cgiar.org>	Other

D1280 - Barriers to CSV adoption and strategies to overcome them at national/sub-national levels

Main Information

Type: Reports and other publications

Subtype: Research workshop report

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- N/A

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination URL:

<https://cgiar.sharepoint.com/sites/CCAFS/CRP%207%20Management/Forms/AllItems.aspx?RootFolder=%2Fsites%2FCCAFS%2FCRP%207%20Management%2FReviewing%20and%20Reporting%2FAnnual%20Reporting%2FTL%20and%20RPL%20Technical%20Reporting%2FSouthAsia&FolderCTID=0x012000035B9CF2D955604DABD96091A3976292&View=%7B917F221C%2DCAF2%2D48C8%2DA171%2DE006FC9CADD4%7D&InitialTabId=Ribbon%2ERead&VisibilityContext=WSSTabPersistence>

Dissemination Channel: CGSpace

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: NA

Description / Abstract: NA

Publication / Creation date: <Not Defined>

Language: NA

Country: NA

Keywords: NA

Citation: NA

Handle: NA

DOI: NA

Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: **F** **A** **I** **R**

Partners contributing to this deliverable:

Institution	Partner	Type
ICRISAT - International Crops Research Institute for the Semi-Arid Tropics	Whitbread, Anthony <a.whitbread@cgiar.org>	Responsible
IWMI - International Water Management Institute	Khatri Chhetri, Arun<A.Khatri-Chhetri@cgiar.org>	Other

5.3 Project Highlights

Project highlight 190

Title: Scaling out CSV approach involvement with private sector in India

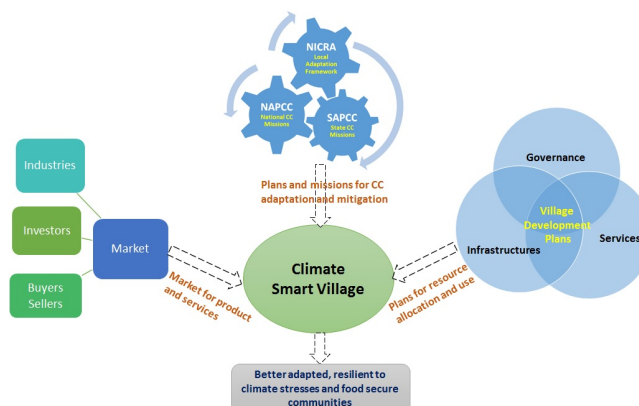


Fig: Convergence of rural development, climate change adaptation and market related policies around a CSV approach

Author: Arun Khatri-Chhetri

Subject: Climate Smart Villages

Publisher: CCAFS

Year reported: 2016

Project highlights types:

- Gender and social inclusion
- Innovative non-research partnerships
- Participatory action research
- Successful communications
- Capacity enhancement
- Policy engagement
- Food security

Is global: Yes

Start date: Aug 2016

End date: Dec 2019

Keywords: Climate Smart Agriculture, Climate Smart Villages, Prioritization, Investment, Collaboration

Countries: India

Highlight description: India is amongst the most vulnerable regions to climate change in the Inter-government Panel on Climate Change (IPCC)'s Fifth Assessment Report released a year ago, and in other similar reports. There is evidence now evident that Indian climate is already changing and the impacts are already being felt. Rise in average temperatures, changes in rainfall patterns, increasing frequency of extreme weather events such as severe droughts and floods and shifting agricultural seasons have been observed in different agro-ecological zone of India. There are several potential adaptation options available to mitigate moderate to severe climatic risks in agriculture. Changes in agronomic practices (altering inputs, timing and location of cropping activities), adoption of new technologies (improvement in input use efficiency, conservation of water and energy, and pest/disease/weed management) and the use of relevant information (climate information based agro-advisories and weather index based insurance) at the farm level can be key components in improving adaptability of agriculture to climate change. These options can significantly improve crop

yields, increase input-use efficiencies and net farm incomes, and reduce greenhouse gas emissions. Many of these interventions have been successful individually in raising production and income and in building resilience of farming communities in several regions. ITC Limited, a multi-business conglomerate of India, has been undertaking a number of initiatives at building rural capacity in partnership with local communities to develop water and forest resources, open up new non-farm livelihoods, empower women economically and expand primary education and skills. Considering the importance of managing climatic risks in rural livelihoods, ITC is interested in collaborating with CCAFS to help agriculture-dependent communities to implement and scale-up the CSV model in its outreach areas. In this context, ITC Limited and CGIAR-CCAFS have agreed to jointly promote CSVs in ITC's project villages.

Introduction / Objectives: 1. Participatory implementation of various climate-smart interventions to promote climate-smart villages in on-going projects of ITC; 2. Strengthen the capacity of farmers, local bodies and other stakeholders in climate change adaptation and mitigation; 3. Expand the concept of CCAFS's CSV from agricultural perspective alone to a holistic climate-smart village program that includes interventions related to generic development such as education, sanitation, literacy, drinking water, energy, etc; 4. Document the results and showcase for Public-Private Partnership (PPP) programmes in promoting climate change adaptation in agriculture.

Results: This project assessed climatic risks, agricultural production systems and identification and prioritization of Climate-Smart Agriculture (CSA) options for ITC's outreach villages in Madhya Pradesh. These assessments are the prerequisite for developing viable adaptation strategy in order to manage current and future climatic risks, preventing maladaptation and harnessing the potential benefits of climate change at the local village level through Climate-Smart Village (CSV) approach. Based on the outcomes of the field visits, stakeholder meetings, intensive discussions with ITC staff and implementing partners and review and synthesis of the available reports, annual work plans and national and international experiences a specific 'Portfolio of Land and Water Interventions for Climate-Smart Villages' was developed and evaluated. The portfolio had nine thematic layers of: (i) In-situ rainwater harvesting to combat dry spells, (ii) On-farm field drainage to reduce water congestion, (iii) Rainwater/ direct surface runoff harvesting to enhance local-level resilience, (iv) Streamflow or runoff harvesting for water-smart villages, (v) Water/groundwater extraction and recharge structures to mitigate water stress, (vi) Improvement of wastelands, grazing lands and common property resources for C-sequestration, (vii) Improvement of soil health for improved for carbon stocks, (viii) Resilient agricultural farms, and (ix) Crafting innovative institutions for reduced vulnerability. These thematic layers had a total of 35 specific land and water interventions tailored to agro-hydrological, socio-economic and climatological conditions of the six identified districts, with their specific crops and dominant climatic vulnerabilities.

Partners: IWMI, ITC Limited, local NGOs, KVKs and Farmers Cooperatives

Links / Sources for further information: <Not Defined>

6. Activities

A300 - Creating evidence base of CSA interventions in different agro-climatic zones

Description: This activity will involve to identify, test and evaluate location specific CSA practices and technologies through a participatory approach. Individual and aggregate cost-benefits of different practices and technologies along with synergies and trade-offs are explored. This will lead to develop portfolios of CSA technologies and practices linking with potential climatic risk management in agriculture. The activity will also identify and evaluate constraints and barriers to adoptions of technologies along with ways to overcome them.

Start date: Jan 2015

End date: Dec 2016

Activity leader: IWMI - International Water Management Institute Khatri Chhetri, Arun
<A.Khatri-Chhetri@cgiar.org>

Status: Complete

Overall activity or progress made during this cycle: Identification, testing and evaluation of a range of CSA technologies, practices and services have been done from 2014-2016. Next phase of this project will focus on developing scaling up/out strategies in collaboration with national and local partners in South Asia.

Deliverables in this activity:

- D650: Evidences for viability of climate-smart interventions in major crops and cropping systems

A400 - Conceptualisation and evaluation of various business and institutional models to scale-out CSVs in South Asia

Description: This activity involves to test and evaluate different models of CSVs including institutional and investment mechanisms to promote CSA. Several portfolios of adaptation options will be implemented in the CSVs with the involvement of local government, farmers and their groups, private sector, researchers from NARS, CGIAR centers and non-government sectors. This will also explore potential of consolidation and convergence of several adaptation options at village level and develop institutional and business models for scaling out CSVs in the different agro-ecological zones.

Start date: Jan 2016

End date: Dec 2016

Activity leader: IWMI - International Water Management Institute Khatri Chhetri, Arun
<A.Khatri-Chhetri@cgiar.org>

Status: Complete

Overall activity or progress made during this cycle: New business models will be developed in collaboration with private sector and tested and evaluated in the CSV locations

Deliverables in this activity:

- D994: Institutional and business models of climate smart village implementation in different agro-ecological zones

A401 - Regional Engagement, Communication and Capacity Building on CSA

Description: This activity will focus to communicate evidences of CSA/CSVs to farmers, governmental and non-governmental organizations and policy makers. This adds value in farmers as well as policy makers' decision making process by providing information on suitability of various adaptation options under different climatic conditions and investment needs. The communication and engagement activities will ensure that outputs of CCAFS projects in SA have maximum impact and reach as many stakeholders and key next users as possible. The SA team will involve generating science-based information for climate change adaptation and mitigation in agriculture and developing communication products and disseminate them.

Start date: Jan 2015

End date: Dec 2016

Activity leader: CIMMYT - Centro Internacional de Mejoramiento de Maíz y Trigo Aggarwal, Pramod
<P.K.Aggarwal@cgiar.org>

Status: Complete

Overall activity or progress made during this cycle: Project is completed and new project will plan regional communication and engagement strategically in 2017-2019

Deliverables in this activity:

<Not defined>

A540 - Enhancing the adaptive capacity of women and youth to climatic risks in agriculture

Description: The activity aims to strengthen gender and youth's capacity for climate risk management through their involvement in project design, implementation and M&E process and several capacity building training. Role of gender and youth in CSA project design, implementation and M&E will be assessed and mainstreaming gender issues into participatory action research on climate change and agriculture. This activity will also focus on identification of gender friendly CSA technologies and mechanism to scaling out through existing climate change adaptation policies and plans.

Start date: Jul 2015

End date: Dec 2016

Activity leader: IWMI - International Water Management Institute Khatri Chhetri, Arun
<A.Khatri-Chhetri@cgiar.org>

Status: Complete

Overall activity or progress made during this cycle: Project is completed and new project will plan gender, youth and social inclusion strategically in its activities from 2017 to 2019.

Deliverables in this activity:

- D995: Report on gender and climate change adaptation in agriculture

7. Leverages

Leverage 101 - Scaling out CSA through CSV approach

Partner name: DA - Department of Agriculture

Year: 2016

Flagship: F2 (before F1 - Andy): Climate-smart practices

Budget: 500,000.00