Title: CASCAID - Capacitating African Smallholders with Climate Advisories and Insurance Development

1. Description

Start date	End date	Management liaison	Mgmt. liaison contact
Jan 2015	Dec 2018	RP WA	Zougmore, Robert <R.Zougmore@cgiar.org>

Funding source types	Status	Lead Organization	Project leader
W1/W2	On-going	ICRISAT - International Crops Research Institute for the Semi-Arid Tropics - India	Traore, Pierre C. Sibiry <p.s.traore@cgiar.org>

Project is working on

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

Region(s)
WA: West Africa

Project summary

CASCAID aims to capacitate African smallholders and other value chain stakeholders with climate and yield advisories, index insurance and integrated climate services. By 2022, CASCAID ambitions to extend the use of climate information for agricultural decision making to over 3,000,000 farmers (1,000,000 women) in Ghana, Mali, Senegal. From 2017 onwards this will be achieved through three new activities only on i) capacitation of NHMS, public and private intermediaries in interpreting and communicating climate information in context, ii) co-development of next-generation climate and yield advisory services calibrated at farm-to-district scales, and iii) integration of technical and institutional innovations in smallholder-friendly finance and insurance ecosystems (consolidation from the current activities #346, 350, 351, 352) will take place during the upcoming (Feb. 2017) CASCAID convening of PIs. Funding and investment synergies will be developed to scale activities out to Nigeria and Burkina Faso.

2. Partners

Partner #1 (Leader)

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

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Project Leader	Traore, Pierre C. Sibiry <p.s.traore@cgiar.org>	Activity 2014-346 *Partner*. Activity 2014-352 *Partner*. Activity 2014-351 *Partner*. Activity 2014-350 *Leader*. Activity 2014-380 *Leader*. [note for CCAFS] Organization should be changed to ICRISAT - International Crops Research Institute for the Semi-Arid Tropics - Mali	Nairobi, Kenya

Partner #2

Institution: ICRAF - World Agroforestry Centre

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Project Coordinator	Bayala, Jules <j.bayala@cgiar.org>	Activity 2014-351 *Partner*. Activity 2014-380 *Partner*. Activity 2014-346 *Leader*. [note for CCAFS] Organization should be changed to ICRAF - World Agroforestry Centre - Mali	HQ

Partner #3

Institution: AGRHYMET - Centre regional AGRHYMET

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Traore, Seydou <S.Traore@agrhymet.ne>	Activity 2014-346 *Partner*. Activity 2014-350 *Partner*. Activity 2014-351 *Partner*. [note for CCAFS] pre-signed 2015 partner sub-agreement (amount: USD23K) could not be finalized due to a partners contract freeze order from ICRISAT management in spite of availability of funds for the project, curtailing involvement of Agrhymet in the project - especially in the preparation of daily gridded ground+satellite rainfall surfaces for use in CRAFT.	HQ

Partner #4

Institution: MANOBI S.A. - MANOBI Société Anonyme

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Annerose, Daniel <daniel.annerose@manobi.net>	Activity 2014-350 *Partner*. Activity 2014-352 *Partner*. [note for CCAFS] partner was successfully contracted as per 2015 PPA (amount: USD 56,587). First installment (80%) paid. Second installment put on hold due to partner contract freeze at ICRISAT.	HQ

Partner #5

Institution: Columbia University-United States

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Project Coordinator	Greatrex, Helen <greatrex@iri.columbia.edu>	Activity 2014-352 *Leader*.	HQ

Partner #6

Institution: GMet - Ghana Meteorological Agency

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Lamptey, Patrick Nii Lante <patrickniilantelamptey@yahoo.com>	Activity 2014-351 *Partner*. [note for CCAFS] partner originally to be funded through ICRAF as involvement mostly pertains to activity 351. However nature of contract not discussed during 2015 initial planning meeting. Funding originally intended to be ~USD 10K/year and may not warrant sub-agreements nor mention as a partner in P&R (subject to discussion). ICRISAT was also approached to directly fund this partner at USD 23K+ alongside ICRAF, but could not materialize due to partner contracts freeze in effect at ICRISAT (see Agrhymet above). For 2016, probably to be funded on ad-hoc basis (against invoices) by both ICRAF and ICRISAT.	HQ

Partner #7

Institution: ANACIM - Agence National de l'Aviation Civile et de la Météorologie (Senegal)

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Ndiaye, Ousmane <ondiaye70@gmail.com>	Activity 2014-351 *Partner*.	HQ
Partner	Diaye, Ousmane <ousmane@iri.columbia.edu>	Activity 2014-426 *Leader*. [note for CCAFS] partner originally funded through RPL then reversed to ICRISAT PPA but amount of corresponding bilateral funding from DFID was erroneously never entered in the ICRISAT-CIAT PPA. Corrective action has been taken in consultation with CCAFS in Dec. 2015, to be executed via RPL but on 2016 budgets. Partner has been funded by ICRISAT in 2015 under DFID bilateral for activity 426. Involvement of partner in project for 2016 will focus on activity 351, and partner should probably be funded on ad-hoc basis (against invoices) by ICRAF.	HQ

Partner #8

Institution: IRI - International Research Institute for Climate and Society

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Dinku, Tufa <tufa@iri.columbia.edu>	Activity 2014-351 *Partner*.	HQ
Partner	Hansen, James <jhansen@iri.columbia.edu>	Activity 2014-427 *Leader*.	HQ

Partner #9

Institution: Agence Nationale de la Météorologie du Mali-Mali

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Zan Diarra, Daouda <ddiarra165@gmail.com>	Activity 2014-351 *Partner*. [note for CCAFS] partner originally to be funded through ICRAF as involvement mostly pertains to activity 351. However nature of contract not discussed during 2015 initial planning meeting. Funding originally intended to be ~USD 10K/year and may not warrant sub-agreements nor mention as a partner in P&R (subject to discussion). ICRISAT also directly funded this partner for activity 351 at ~USD 6K in 2015 through invoice reimbursements (ENACTS workshops). For 2016, probably to be funded on ad-hoc basis (against invoices) by both ICRAF and ICRISAT.	HQ

Partner #10

Institution: University of Ghana-Ghana

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Maccarthy, Dilys S.K. <dmaccarthy@ug.edu.gh>	Activity 2014-352 *Partner*. [note for CCAFS] partner was successfully contracted as per 2015 PPA (amount: USD 52,628). First installment (80%) paid. Second installment put on hold due to partner contract freeze at ICRISAT. Partner under financial strain due to commitment of internal resources.	HQ

Partner #11

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

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Hellin, Jonathan <j.hellin@cgiar.org>	Activity 2014-427 *Partner*.	Addis Ababa, Ethiopia

Partner #12

Institution: University of Reading-United Kingdom

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Project Coordinator	Dorward, Peter <p.t.dorward@reading.ac.uk>	Activity 2014-351 *Leader*. Activity 2014-346 *Partner*.	HQ

Partner #13

Institution: Direction nationale de la météorologie (Burkina Faso)-Burkina Faso

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Baki, Gregoire <grebaki@yahoo.fr>	Activity 2014-351 *Partner*. [note for CCAFS] partner formal involvement put on indefinite hold in November 2015 after second round of funding cuts (cf P&R entry of Nov. 2015). In spite of this, partner was funded to attend annual review and planning meeting. Also note that Mrs. Judith Sanfo passed away in 2015 and should be remove from the P&R system. Her replacement is Mr. Gregoire Baki (grebaki@yahoo.fr)	HQ

Partner #14

Institution: UF - University of Florida

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Hoogenboom, Gerrit <gerrit@ufl.edu>	Development and calibration of CRAFT for West Africa, including integration of SarraH model into CRAFT and capacitation of regional partners	HQ

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

Year	Lesson(s)
2016	Under 2017 budgets it will not be possible to sub-contract NHMS. We propose to consolidate the existing 4 research activities into 3, defined as (i) capacitation of NHMS, public and private intermediaries in interpreting and communicating climate information in context, (ii) co-development of next-generation climate and yield advisory services calibrated at farm-to-district scales, and (iii) integration of technical and institutional innovations in smallholder-friendly finance and insurance ecosystems. No implication is expected in terms of the core project partnership. Our quest for more robust and sustainable integration of components will lead to the involvement of additional partners, typically private and unfunded.
2016	<Not Defined>

Partnerships overall over the last reporting period:

Partner performance remains impeded by budget cuts, affecting allocation by centers of sizable sub-agreements to partners and timely contracting & disbursements, although improvements are noted in 2016. Partnership weaknesses include theoretical and programmatic integration between the project activities and sometimes even within individual activities; lack of geographical convergence between partners, activities hampering leverage between components; variable engagement levels within the core group of partners, and with external collaborators; tendency for parochial promotion of existing products and lack of a critical quality assessment and analysis of product, partners roles inside the information value chain of sustainable climate services.

3. Locations

This project is not global

Project level	Latitude	Longitude	Name
Country			Burkina Faso
Country			Ghana
Country			Mali
Country			Senegal
CCAFS Site	10.735	-2.624	Lawra-Jirapa
CCAFS Site	13.509	-5.613	Segou
CCAFS Site	14.242	-15.407	Kaffrine
Province	11.3689	-5.7085	Sikasso Region
Village	12.1675	-5.0781	Sukumba
District	13.7493	-15.7774	Nioro du Rip
Country			Nigeria
District	12.95	-14.47	Kolda

4. Outcomes

4.1 Project Outcomes

Project Outcome statement:
- 1,500,000 farmers (including 650,000 women) use climate information for seasonal agricultural decision making in GH/ML/SN; - 3 boundary institutions (extension service / private sector / NGO) implement equitable climate advisory services for 150,000 farmers in GH/ML/SN; - 2 NHMS (in ML/SN) and 1 regional institution (Agrhymet) incorporate project outputs into improved crop monitoring and food security early warning systems in ML/SN? reaching out to an audience of at least 65,000 smallholder farmers; - 3 NHMS (GH/ML/SN), 1 regional institution (Agrhymet) provide place-based forecast dissemination based on high-resolution gridded data, new products and maprooms (historical + monitored + forecast), reaching out to an audience of at least 300,000 smallholder farmers; - 1 public-private partnership provides index-based insurance to 50,000 GH/SN farmers; - Rural radios broadcast seasonal forecast information to 5 million farmers in SN; - Nigeria's index-based insurance program incorporates project outputs into services targeting (in 2018) 15 million farmers.

Annual progress towards outcome (end of 2016*): - 1 NHMS, Agrhymet provide place-based forecast dissemination based on high-resolution gridded data, new products and maprooms in 1 country, reaching 100,000 smallholder farmers - 1 rural radios umbrella network broadcasts seasonal forecast information to 5,000,000 SN farmers - Nigeria's index-based insurance program serves (in 2018) 15,000,000 farmers - 1 boundary institution implements equitable climate advisory services for 50,000 smallholder farmers in 1 country - Agrhymet incorporates project outputs into crop monitoring and food security EWS in 1 country

Annual progress towards project outcome in the current reporting cycle (2016*): ML-SN-BF-NE NHMS were trained on climatic data analysis for PICSA, including online E-SIAC and one week face-to-face training in Senegal. Two NHMS (GH-ML) implemented ENACTS with technical support from IRI, ICRISAT. NHMS data recovery processes were supported in GH-ML-BF. Statistical software was developed to support capacity building of NMHS on SCF improvement, including PCA, CCA. Development of R-INSTAT continues with launch planned Jul17. PICSA was implemented in 10 districts in Northern Ghana, including ODK-based M&E using quantitative and qualitative approach. From ~6000 farmers trained, 97% reported changing practice after PICSA. Trained farmers shared information with 3-5 peers, thus, elements of PICSA reached ~25000-30000 farmers. Training and support for PICSA roll out continued in 2016 in Northern Ghana and 6667 farmers were trained with partners ADRA and OXFAM. ICRAF and ICRISAT with UReading trained NHMS staff from SN-NE-BF-ML, plus Senegalese NGOs on PICSA. Further training were also conducted by ICRAF and ICRISAT in BF-ML. PICSA was implemented in one location in Mali. An insurance basis risk assessment was conducted, which will impact all farmers insured by GAIP (5000). Aggregator training on insurance was also held, reaching by proxy approximately 5000 farmers. 3,290 farmers were registered, characterized for socio-economics, agronomics and incorporated in IT platform for climate advisories dissemination, ready to scale to a larger registry of ~42,000 farmers in 7 countries. 30,000+ CNAAS ag. insurance contracts were inserted in IT platform through a Joint Management Unit agreement & CASCAID supports index design for

CNAAS and scaling of first African agricultural indemnity insurance product. Agro-industrial partnerships with 7 PPP/JVs in place, and growing to scale infrastructure and advisories. CRAFT being adapted and mainstreamed by Agrhymet for regional EWS applications. Sen2agri Mali pilot informs CRAFT initial conditions with cropland/type mapping and dynamic crop condition monitoring for data assimilation, with national launch planned Mar17.

How communication and engagement activities have contributed to achieving your Project outcomes:* The activities in the project involve close collaboration and communication with a wide range of partners (government and non-government). During 2016, engagement has lead to closer working with existing partners (ADRA and OXFAM) and working with new organisations for instance CARE International in Northern Ghana. There has been significant engagement with insurance partners, all methods and results are embedded in these relationships, plus outward engagement with other insurance, anthropology and science stakeholders to improve research outputs. Major local and global industrial partners (finance, input supply, processors) have also been engaged to embed services in a demand-driven, inclusive and sustainable approach.

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

Annual progress towards outcome (end of 2015): - 1 meteorological service and 1 regional institution (Agrhymet) provide through rural radios or other communication mechanism place-based forecast dissemination based on historical analyses of station data in at least 1 of the 5 target countries, reaching an audience of 50,000 smallholder farmers (activity #351) - 1 rural radios umbrella network broadcasts seasonal climate forecast information to at least 5 million smallholder farmers in Senegal (activity #426) - Nigeria's national index-based insurance program incorporates project outputs into services targeting (in 2018) 15 million farmers (activity #427)

Annual progress towards outcome (end of 2017): - 2 NHMS, Agrhymet provide place-based forecast dissemination based on high-resolution gridded data, new products and maprooms in 1 country, reaching 200,000 smallholder farmers - 1 rural radios umbrella network broadcasts seasonal forecast information to 5,000,000 SN farmers - Nigeria's index-based insurance program serves (in 2018) 15,000,000 farmers - 2 boundary institutions implement equitable climate advisory services for 100,000 smallholder farmers in 2 countries - Agrhymet incorporates project outputs into crop monitoring and food security EWS in 2 countries

Annual progress towards outcome (end of 2018):

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:* <Not Defined>

4.2 CCAFS Outcomes

RP WA Outcome 2019: National meteorological services and regional (e.g. AGRHYMET, ACMAD) and international organizations (e.g. WMO) cogenerate scalable climate services to improve farm-related climate risk management decision making. National agricultural research systems and meteorological services partner to deliver and communicate tailored agro-climatic advisories and services. Farmers and farmers organizations access and use climate information and weather-related insurance schemes to improve agriculture and climate risk management strategies.

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
Target value: 0
Cumulative target to date: 6
Target narrative: Activity 346: (activity targeted at end-users): Over 2 million farmers (including 0.8 million women) use climate information in support of seasonal agricultural decision making in Burkina Faso, Ghana, Mali, Nigeria, and Senegal Activity 350: 2 NHMS (in Burkina Faso and/or Mali and/or Senegal) and 1 regional institution (Agrhymet) incorporate project outputs into improved crop monitoring and food security early warning systems in Mali and/or Burkina Faso and/or Senegal Activity 351: 4 boundary institutions (extension service and/or private sector and/or NGO) implement equitable climate advisory services for at least 200,000 farmers in Burkina Faso, Ghana, Mali, and Senegal and 4 NHMS (Burkina Faso, Ghana, Mali, Senegal) and 1 regional institution (Agrhymet) provide place-based forecast dissemination based on high-resolution gridded data, new products and maprooms (historical + monitored + forecast) in 4 of 5 target countries, reaching out to an audience of at least 400,000 smallholder farmers Activity 352: At least 1 public-private partnership providing project outputs in their index insurance services to small holder farmers Activity 426: 1 rural radios umbrella network continues to broadcast seasonal climate forecast information to about 5 million smallholder farmers in Senegal Activity 427: Nigeria's national index-based insurance program incorporates project outputs into services targeting (in 2018) 15 million farmers
The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined>

2015
Target value: 0 **Cumulative target to date:** 0 **Target narrative:** Activity 351: 1 meteorological service and 1 regional institution (Agrhymet) provide through rural radios or other communication mechanism place-based forecast dissemination based on historical analyses of station data in at least 1 of the 5 target countries, reaching an audience of 50,000 smallholder farmers Activity 426: 1 rural radios umbrella network broadcasts seasonal climate forecast information to at least 5 million smallholder farmers in Senegal Activity 427: Nigeria's national index-based insurance program incorporates project outputs into services targeting (in 2018) 15 million farmers **The expected annual gender and social inclusion contribution to this CCAFS outcome:** <Not Defined>

2016
Target value: 6 **Cumulative target to date:** 6 **Target achieved:** 6.0 **Target narrative:** - 1 NHMS and 1 regional institution (Agrhymet) provide place-based forecast dissemination based on high-resolution gridded data, new products and maprooms (historical + monitored + forecast) in 1 country, reaching 100,000 farmers - 1 rural radios umbrella network continues to broadcast seasonal climate forecast information to at least 5 million smallholder farmers in Senegal - Nigeria's national index-based insurance program serves (in 2018) 15 million farmers - 1 boundary institution implements equitable climate advisory services for 50,000 farmers in 1 country - 1 regional institution (Agrhymet) incorporates project outputs into improved crop monitoring and food security EWS in 1 country **Narrative for your achieved targets, including evidence:** ENACTS allows Ghana, Mali NHMS to generate place-based forecasts, but product quality needs rigorous assessment before dissemination (2017 onwards). CRAFT is being adapted by Agrhymet and partners to generate sub-national yield forecasts with CILSS as target area of interest. Sen2agri (ESA) leverages CASCAID to scale future CRAFT operations. IT platform is built and operational for equitable advisory dissemination to 15,000+ smallholders already registered, and feedback loop. Platform sustainability is based on a business model driven by smallholder step-wise qualification for agro-industrial demand, and where costs are borne by top- and medium-of-the-pyramid stakeholders. Supporting partnerships are being developed (e.g. Microsoft-India). **Narrative for your achieved annual gender and social inclusion contribution to this CCAFS outcome:** Monitoring and evaluation of the PICSA (Participatory Integrated Climate Services for Agriculture) approach implemented in Northern Ghana demonstrated that 40% of the approximately 6000 farmers directly trained in PICSA are female. Budget limitations mean the gender insurance toolkit will be rolled out in 2017, however the gender research has been used to push the Ghanaian insurnace industry for gender disaggregated statistics. Elements of the toolkit has also been taken up by other CCAFS initiatives (CSA and P51). **The expected annual gender and social inclusion contribution to this CCAFS outcome:** [346] at least 30% women, 30% youth help co-design, co-test and co-validate climate services-smart options adapted to genderized and socially-differentiated contexts [350-3 & 426] at least 20% women farmer-observers in the co-prediction network(s) deployed during PY2 (activity mostly carried over from PY1) [351] attention will be given to different requirements associated with wealth and gender in forecast communication and decision making [352] gender and equity orientation during PY1 will be further entrenched in index insurance design processes

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

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

● F4 (before F2 - James): Decision support systems improved or developed for incorporation into national food security safety net programs

4.3 Other Contributions

Contribution to other CCAFS Impact Pathways:
Activity 2014-346 will contribute to: (1) enhanced adaptive capacity to manage climate risks (Climate Smart Agriculture) among smallholders – including women and marginalized groups - by generating and providing timely, relevant, and actionable climate information services (2) increased early warning and response preparedness (Policy & Institutional Change) by organisations that support farmers by building their capacity to use climate information and helping them integrate climate services into their policies and practices Activity 2014-351: Improved availability of historical climate information showing trends and of downscaled forecasts on wider range of climate characteristics will inform policy at district, national and regional levels.

Collaborating with other CRPs

Dryland Systems
Description of collaboration: use of CRP-DS baseline household data for Ghana, Mali

4.4 Case Studies

Case Study #137

Title: Building climate-smart villages for sustainable intensification of small holder and vulnerable farming systems

Year: 2016

Project(s): P46

Outcome Statement: In climate smart villages in India, Ghana and Mali, significant and multiple impacts on food security, household resilience have resulted from the production and disseminate of quality climate information to farmers for planning of agricultural activities. Develop climate change action plan based on community driven practices by addressing social and cultural barriers. Build climate resilient agroecosystems using system modeling tools and climate information.

Research Outputs: The five approaches highlighted for building climate smart villages include: The watershed management approach focuses on rehabilitating agroecosystems and deploys a pool of climate-smart agricultural practices developed by ICRISAT which have resulted in increasing crop yields and incomes of farmers. This approach which is gaining momentum in India is also favored by companies for their corporate social responsibility activities. The success of this approach has led to efforts to replicate it in sub-Saharan Africa. The futuristic multi-model approach uses computer simulated scenarios and to give policy makers in Zimbabwe the climate scenario up to the year 2050. The result was renewed support for promoting dryland cereals – sorghum and millet and greater support for groundnut value chains. With the support of the Government of Zimbabwe, ICRISAT imported 20 tons of groundnut seed from Malawi which was distributed to farmers for seed multiplication and testing. The digital technologies approach has helped farmers from the Doggoh community in remote Ghana to adopt climate-smart agricultural practices and take up agroforestry in a big way. Farmers who had never used a phone are now using mobiles for climate information to make cropping decisions. About 90% of the farmers find the weather alerts useful and 64% of them also make use of the helpline when needed. The metrological advisory and farm systems approach used in Mopti, Mali, demonstrated that climate change adaptation is achievable by using eco-friendly methods and climate information. Close to 76,000 women and 94,000 men representing all stakeholders in the value chain reported using climate information in their decision making. The climate and crop modelling approach helped farmers who followed crop advisories in the drought-prone district of Kurnool in Andhra Pradesh, India, to earn 20% more than those who did not. The success of this pilot project has led to its expansion in other villages of Andhra Pradesh and the neighboring state of Karnataka.

Research Partners: World agroforestry center (ICRAF). Agha Khan foundation, World Vision Mali. ICRISAT. Mali Meteo: Mali's Agrometeorological advisory program, Locaux d'Assistance Météorologique (GLAM), Groupes Communaux d'Assistance Météorologique au Monde Rural (GCAM) and committees for early warning such as Comites Locaux d'Alerte Precoce (CLAP)

Activities: Diffusion of high quality climate information and crop season calendar - The calendar shows water availability for cropping decisions, available grasslands and forest area for herders, and status of ponds and rivers for fisher folk. The prepared crop season calendars were disseminated to local farmer groups through information bulletin every 10 days by radio transmission. Inforrmation on possible climate conditions in the coming months were conveyed monthly through village assemblies for improving planning of agricultural activities. Climate Change awareness is spread through radio, theatre, public conferences, school debates and inclusion in curricula; sharing of knowledge between stakeholders through various fora. Using participatory planning approaches, action plans were developedthat tapped local knowledge and emphasized strong community linkages to take collective action and generate internal answers to common issues. Establishing groups/ institutions for dissemination of information on climate , innovation platforms to provide interface between technical service providers and farmers to help decision making in the communities. Capacity development was based on locally driven needs and local adaptation strategies in crop sector by providing innovative approaches

Non-Research Partneres: Local communities - marginalized population, women and youth

Output Users: For example a USAID funded Global Climate Change project in Mppti, Mali, 3,089 women and 5,411 men are implementing risk reducing practices/actions to improve resilience. 76,000 women and 94,000 men are using climate information in their decision making. 102,276 women and 92,005 men are equipped with increased knowledge to adapt to impacts of climate change. 2233 women and 2734 men received training in Global climate change adaptation. 32 institutions have improved their capacity to address climate change issues. 458 hectares of land in Mopti village are under Climate Change improved technologies /management practices

Evidence Outcome: Establishment of facilitating groups for information dissemination and capacity building. Innovation platforms to facilitate a forum for science and technical service providers, farmers, herders, fisher folk and decision makers. Technology Parks were established to support innovation diffusion and uptake of improved practices that have been tested on farmers' fields. Nursery groups and Rural Resource Centers for agroforestry production and market linkages have also been set up. Farmer Field Schools (FFSs) provided training on resilient technologies and other innovative practices specific to the village.

Output Used: The climate information generated in the form of 10 day bulletins prepared by local groups is based on the crop season calender which provides the water availability during the 10 days helping in taking cropping decisions. The crop season calender was also used by herders for grassland and forest information, fisher folk use ponds and river information . Village assemblies used monthly early warning information on climate for improving agricultural planning activities. Innovative horticultural systems, improved varieties, soil fertility management and crop/legume systems were adopted by the village to improve productivity and income.

References Case: Building Climate-Smart Villages: Five approaches for helping farmers adapt to climate change. 2016. International Crops Research Institute for the Semi-Arid Tropics. Patancheru 502 324, Telangana, India: 28 pp.
http://www.icrisat.org/wp-content/uploads/2016/11/Building-Climate-Smart-Villages.pdf

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

● Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions)

● # of regional/global organisations and processes that inform their equitable institutional investments in climate smart food systems using CCAFS outputs

Link between outcome story and and the FP Outcome(s): <Not Defined>

Annex uploaded:

5. Project outputs

5.1 Overview by MOGs

Major Output groups - 2019
F4 (before F2 - James): Decision support systems improved or developed for incorporation into national food security safety net programs **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): 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>
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:** <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): Decision support systems improved or developed for incorporation into national food security safety net programs

Brief bullet points of your expected annual 2016 contribution towards the selected MOG: - 1 regional institution (Agrhymet) incorporates project outputs into improved crop monitoring and food security EWS in 1 country

Brief summary of your actual 2016 contribution towards the selected MOG: Agrhymet Regional Centre staff took part in the Nov. 2016 CRAFT training organized at University of Florida and contributed to the parameterization for the Mali case study. Agrhymet has taken the initiative to scale the use of CRAFT to the entire CILSS area.

Brief`2016 plan of the gender and social inclusion dimension of the expected annual output: - at least 20% women farmer- observers in the co-prediction network(s) deployed during PY2 (activity mostly carried over from PY1)

Summary of the gender and social inclusion dimension of the 2016 outputs: Of the 2,255 smallholder farmers registered in the CASCAID network in Nioro District in 2016, 641 are female producers (29.4%). Of the 1,035 smallholder farmers registered in the CASCAID network in Kolda District in 2016, 547 are female producers (52.9%).

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: - materials for gender sensitive index insurance design and participatory farmer led climate discussions

Brief summary of your actual 2016 contribution towards the selected MOG: Highlights: A basis risk assessment was conducted on the maize index currently being used in Ghana; we suggested major improvements which will affect all insurance contracts in Ghana (5000-10000). We conducted participatory training with aggregators on how insurance fits with their work, impacting them and their ~5000 smallholder out-growers.

Brief`2016 plan of the gender and social inclusion dimension of the expected annual output: - gender and equity orientation engaged during PY1 will be further entrenched in index insurance design processes

Summary of the gender and social inclusion dimension of the 2016 outputs: Research was presented on insurance and social equity at the "Royal Anthropological Institute's conference on Anthropology, Weather and Climate Change". A qualitative toolkit for assessing insurance and gender dynamics was further refined and presented at the CCAFS workshop: "Implementing Gender and CSA: A Framework for Action", leading to further collaborations.

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: - 1 boundary institution implements equitable climate advisory services for 50,000 farmers in 1 country

Brief summary of your actual 2016 contribution towards the selected MOG: MANOBI and partners work to implement inclusive mobile services for smallholder value chains, including testing of sowing date and other agronomic advisories (15,000 farmers) and migrated the CNAAS historical database of 30,000+ group insurance contracts onto its IT platform. ADRA/OXFAM continue PICSA work with an estimated 10,000+ smallholders in Ghana.

Brief`2016 plan of the gender and social inclusion dimension of the expected annual output: - attention is given to different requirements associated with wealth and gender in forecast communication and decision making

Summary of the gender and social inclusion dimension of the 2016 outputs: Social differentiation is integral to the PICSA process and to the interactions between farmer networks and MANOBI's franchised extension agents. CASCAID provides opportunities to retain youth in the rural world with tech-savvy jobs. Cost of registration on IT platform is differentiated for bottom, middle and top of the pyramid stakeholders.

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: - 1 NHMS and 1 regional institution (Agrhymet) provide place-based forecast dissemination based on high-resolution gridded data, new products and maprooms (historical + monitored + forecast) in 1 country, reaching 100,000 farmers

Brief summary of your actual 2016 contribution towards the selected MOG: Ghana Met., Mali-Meteo have received the full ENACTS training curriculum, produced gridded data and established data libraries and online maprooms. To what extent their placed-based forecast dissemination takes these into account is still unclear. ANACIM continues to disseminate forecasts country-wide and will receive ENACTS training in 2017 under CINSERE projet.

Brief`2016 plan of the gender and social inclusion dimension of the expected annual output: - gender dimension appears at the level of MOG#2

Summary of the gender and social inclusion dimension of the 2016 outputs: Gender and social inclusion is not directly apparent under this MOG due to effets of scale aggregation. The gender, youth and social inclusion more clearly appear under the development of decision support systems, notably mobile-enabled farmer networks, where the social differentiation is intrinsic and explicit.

Major Output groups - 2015

F4 (before F2 - James): Decision support systems improved or developed for incorporation into national food security safety net programs

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: CRAFT now includes relevant West African crops besides maize, 1 new crop model (APSIM) and is ready to incorporate the preferred crop model used by Agrhymet for the region (SarraH). Data streams, protocols are developing for operational, gridded yield forecasting as activity 350 connects to AgMIP, JECAM/GEOGLAM and Sen2Agri projects.

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 gender and social dimension of this activity comes from our ability, through AgMIP, to (i) model different farm household endowment levels through sliding input levels in agricultural models and (ii) analyse income and livelihood outcomes through socially differentiated strata. Available in CASCAID starting 2017 (est), not before.

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: Index insurance products were designed for Northern Ghana, and a roadmap towards implementation was laid out with the Ghana Agricultural Insurance Program. In Senegal, all major index-based insurance stakeholders took part in a consultation workshop on the scaling/supporting role of mobile platforms leading to at least 3 collaborative project proposals.

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: A set of gender sensitive index insurance design materials, customized for the Northern Region of Ghana was produced. Materials were fully designed and pretested, plus local partners and logistics identified. Due to funding constraints, they have not yet been used in a full fieldwork campaign but are ready for implementation.

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: PICSA approach was taught to NGO extension agents (OXFAM, ADRA) in northern Ghana and used to guide farmers in their options and practices. Data were collected on the use of the approach by farmers, revealing that 97% of trainees changed their practice as a consequence.

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: PICSA reached 6,000 farmers (of which 40% female). Composition of CoPs will ensure a minimum 30% women and 30% youth to help co-design, co-test and co-validate climate services-smart options adapted to genderized and socially-differentiated contexts.

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: Ghana, Mali NHMS were trained to improve their skill in data quality control and analysis to generate information that is useful for the farmers on the ground. They were also introduced to work with TAMSAT on the estimation of daily rainfall through merging of satellite data with their station data.

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: Increased awareness by NHMS and intermediaries of the different requirements of farmers of different gender and wealth and education levels, regarding climate information and communication approaches. Increased capacity of female and male farmers in pilot sites to interpret and use climate and crop information for decision making.

Major Output groups - 2014

F4 (before F2 - James): Decision support systems improved or developed for incorporation into national food security safety net programs

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): 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>

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

D897 - Eliciting district-level portfolios of climate services-smart [options x context] through participatory action research

Main Information

Type: Reports and other publications

Subtype: Research workshop report

Status: Complete

Year of expected completion: 2015

New expected year: 2016

Cross-cutting dimension:

- Capacity Development

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: Yes
License adopted: No

Deliverable Metadata

Disseminated title: Promising climate-smart crop-livestock-agroforestry technologies / practices in CCAFS benchmark sites in West-Africa
Description / Abstract: The main was to identify from the numerous technologies/practices, those that farmers judge of priority to them because they are improving their resilience to climate hazards. Therefore, inventory workshops were conducted in four CCAFS benchmark sites to (i) engage key stakeholders in inventorizing promising climate smart crop-livestock-agroforestry practices that could be tested under the project and (ii) prioritizing the promising climate smart technologies based on a set of criteria pertinent to climate smart agriculture (food security, adaptation and mitigation) and feasibility in the context of farmers-managed on-farm research.
Publication / Creation date: 2016-12-01
Language: English
Country: Mali
Keywords: Climate ssmart, practices, West Africa
Citation: Dayamba et al. 2017. Promising climate-smart crop-livestock-agroforestry technologies / practices in CCAFS benchmark sites in West-Africa.
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:

<Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type
ICRAF - World Agroforestry Centre	Bayala, Jules <j.bayala@cgiar.org>	Responsible

D1025 - Farmer-observer network established for rain, yield/crop condition measurements with 90 farmers registered in Segou, Mali

Main Information

Type: Training materials

Subtype: Lecture/Training Course Material

Status: Cancelled

Year of expected completion: 2016

Justification of new expected date of completion: Activity not started. Postponed indefinitely due to 2016 CCAFS cuts

Cross-cutting dimension:
<Not Defined>

Deliverable dissemination

Is this deliverable already disseminated: No

Open access: <Not Defined>

License adopted: <Not Defined>

Deliverable Metadata

Disseminated title: <Not Defined>
Description / Abstract: <Not Defined>
Publication / Creation date: <Not Defined>
Language: <Not Defined>
Country: <Not Defined>
Keywords: <Not Defined>
Citation: <Not Defined>
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
<Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type
MANOBI S.A. - MANOBI Société Anonyme	Annerose, Daniel <daniel.annerose@manobi.net>	Responsible

	ICRISAT - International Crops Research Institute for the Semi-Arid Tropics	Traore, Pierre C. Sibiry<p.s.traore@cgiar.org>	Other

D2952 - ENACTS launches in Ghana and Mali, and training of potential stakeholders in Mali

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: No
Open access: Yes
License adopted: No

Deliverable Metadata

Disseminated title: <Not Defined>
Description / Abstract: two official launches of the initiative Enhancing National Climate Services (ENACTS) were done in Mali and Ghana respectively. The objectives is improve resilience to climate impacts in Mali through improved availability, access and use of climate information. The Initiative ENACTS brings climate and knowledge into national decision making by improving availability, access and use of climate information. The availability is enhanced by merging station data with other proxies, and its access is through the online state of the art tool, the Meteo Mali Climate data Library and the Meteo Ghana Climate Data Library installed Mali Meteo and Ghana MET respectively, and publicly available online. The objectives of the workshop were to (i) introduce the new data and web interface to stakeholders; and (ii) solicit feedback and needs from participants. Participants were very amazed about the online tool and requested for a training to learn how to make use of it in their day to day activities and improve their decision making. 59 participants including 13 women and 84 participants including 19 women took part in the official launch of ENACTS in Mali and Ghana respectively. A training was organised to teach potential users on how to use the Mali Meteo Data Library. It was particularly about training potential stakeholders on the use of the ENACTS Maproom with the aim of improving their decision making and satisfy their needs. 22 participants took part in the training including 4 women.
Publication / Creation date: <Not Defined>
Language: <Not Defined>
Country: <Not Defined>
Keywords: <Not Defined>
Citation: <Not Defined>
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/Report_ENACTS_Launch%20in%20Ghana_AMN_vo2.docx
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/ENACTS_Training_Report_Mali.docx
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/Report_Launch_ofENACTS_inMali_AMN_revPCST(1).docx

Partners contributing to this deliverable:

Institution	Partner	Type
ICRISAT - International Crops Research Institute for the Semi-Arid Tropics	Traore, Pierre C. Sibiry <p.s.traore@cgiar.org>	Responsible
University of Reading	Dorward, Peter<p.t.dorward@reading.ac.uk>	Other

D2926 - Ensemble crop modelling results for maize farming in Lawra and Jirapa

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:
<Not Defined>

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: No
Open access restriction: Not Disseminated
License adopted: No

Deliverable Metadata

Disseminated title: Ensemble crop modelling results for maize farming in Lawra and Jirapa
Description / Abstract: This is an interim report showing how the DSSAT crop model can be parameterised and run for 200 maize farmers in Lawra and Jirapa (Climate Smart Villages). Initial results are included. The crop model was parameterised on data gathered in the 2015 fieldwork survey (deliverable D2927). The results will be used in further analysis of insurance design in Ghana and to support the bilateral AGMIP-CCAFS programme research on crop modelling and insurance design.
Publication / Creation date: 2016-09-01
Language: English
Country: Ghana
Keywords: <Not Defined>
Citation: Freduah, B, MacCarthy, D, Tettey, A, Narh, S, Adiku, S, "Ensemble crop modelling results for maize farming in Lawra and Jirapa", CCAFS update report, 2016
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors:
- Freduah - Bright
- MacCarthy - Dilys
- Tettey - Abigail
- Narh - Stephen
- Adiku - Samuel

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/CASCAID352%20Appendix%20H%20Crop%20simulation%20report.pdf

Partners contributing to this deliverable:

Institution	Partner	Type
University of Ghana-Ghana	Maccarthy, Dilys S.K. <dmaccarthy@ug.edu.gh>	Responsible

D2927 - Survey instruments and analysis of the 2015 maize/insurance fieldwork

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):

- Collection of sex-disaggregated data

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: Yes
License adopted: No

Deliverable Metadata

Disseminated title: Bundle of fieldwork outputs for the 2015 CASCAID insurance and maize survey in Lawra Jirapa
Description / Abstract: This document summarises the results of a fieldwork campaign held by CASCAID 352 in August 2015. It contains three sub-documents. The aim of the campaign was to assess the agronomic practices of maize farmers in Upper West Ghana. Approximately 200 farmers were reached, including in the Climate Smart Village in Lawra/Jirapa The fieldwork campaign had two parts 1. A structured group participatory exercise on “bad year” recall to support the insurance design process. (Sub-document 1) 2. An individual questionnaire covering 200 farmers on their maize practices, to be used to parameterise and run the DSSAT crop model and to understand the practices of maize farmers in the region (sub-document 2 and the survey instrument: sub-document 3).
Publication / Creation date: 2016-10-01
Language: English
Country: Ghana
Keywords: maize, survey, insurance, participatory
Citation: Greatrex, H., MacCarthy, D, "Bundle of fieldwork outputs for the 2015 CASCAID insurance and maize survey in Lawra Jirapa", CCAFS update report
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors:

- Greatrex - Helen
- MacCarthy - Dilys

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/CASCAID352%20Maize%20survey%20deliverables.pdf

Partners contributing to this deliverable:

Institution	Partner	Type
Columbia University-United States	Greatrex, Helen <greatrex@iri.columbia.edu>	Responsible
University of Ghana	Maccarthy, Dilys S.K.<dmaccarthy@ug.edu.gh>	Other

D2928 - Presentation on gender results at the Royal Anthropological Institute Conference on Anthropology and Climate Change

Main Information

Type: Outreach products

Subtype: Presentation/Poster

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: No
Open access: Yes
License adopted: No

Deliverable Metadata

Disseminated title: Interdisciplinary entanglements within weather based index insurance
Description / Abstract: Weather based index insurance (WBII) has recently emerged as an important tool that can allow smallholder farmers to manage climate risk and increase productivity. Rather than directly insuring losses, payouts are triggered when an index - such as wind speed or an amount of rain during a certain window of time - falls above or below a pre-specified threshold. WBII is inherently interdisciplinary at every scale. For individual farmers, the perception of climate risk and the decision to purchase insurance is embedded in a complex and shifting context of personality, financial liquidity, social equity, trust, power, institutions, culture and history. Failing to take these multiple drivers into account can often lead to unintended consequences or poor links with developmental outcomes. Equally at a programme level, WBII programmes that have scaled have often included meaningful input from economists, remote sensing experts, meteorologists, social scientists, index designers, local insurers, international reinsurers, NGOs and donors. We are still learning to speak the same language and these are often several different (and occasionally contradictory) visions of success within a single project. In this paper, we present examples to show the benefits and challenges of including interdisciplinary and inter-scale dialogue within WBII, including • How participatory insurance design using historical weather data and climate perceptions allowed African smallholders a voice in an international design process, significantly increasing sales and enabling insurance to reach over 25,000 farmers. • How qualitative sociological research on gender and insurance in Ghana is unlocking new opportunities for insurance and development.
Publication / Creation date: 2016-05-01
Language: English
Country: UK

Keywords: insurance, social science, gender dynamics
Citation: Greatrex, H, Diro, R, "Interdisciplinary entanglements in index insurance", Royal Anthropological Institute and British Museum Conference on Anthropology, Weather & Climate Change, London, 27-29 May 2016
Handle: https://www.therai.org.uk/images/RAI2016.pdf
DOI: <Not Defined>
Creator / Authors:
- Greatrex - Helen<orcid.org/0000-0002-1047-9276>
- Diro - Rahel
- Alo - Susana

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/CASCAID352%20Appendix%20L%20Presentation%20to%20RAI.pdf

Partners contributing to this deliverable:

Institution	Partner	Type
Columbia University-United States	Greatrex, Helen <greatrex@iri.columbia.edu>	Responsible

D2929 - Presentation on CASCAID results to a CCAFS CSA gender workshop

Main Information

Type: Outreach products

Subtype: Presentation/Poster

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: No
Open access: Yes
License adopted: No

Deliverable Metadata

Disseminated title: Gender Research in Flagship 2
Description / Abstract: This was an overview of gender research within Flagship 2 for the workshop "Implementing Gender and CSA: A Framework for Action". There was also discussion as part of the talk about the gender results from CASCAID, which led to a new collaboration on qualitative research with the CSA flagship (Una Murray, University of Galway and Osana Bonilla-Findji, CIAT)
Publication / Creation date: 2016-11-01
Language: English
Country: Global
Keywords: gender research
Citation: Greatrex, H, "Gender within CASCAID and Flagship 2", presentation to the CCAFS workshop "Implementing Gender and CSA: A Framework for Action", Cali, November 2016
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors:

- Greatrex - Helen

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:

https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/HGreatrex%20gender%20CASCAID%20.pdf

Partners contributing to this deliverable:

Institution	Partner	Type
Columbia University-United States	Greatrex, Helen <greatrex@iri.columbia.edu>	Responsible

D2610 - Assessment of the impact of drought on rice for insurance 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:
<Not Defined>

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: Yes
License adopted: No

Deliverable Metadata

Disseminated title: Report on rice response to water stress experiment conducted at the Soil and Irrigation Research Centre, Kpong Ghana
Description / Abstract: The insurance industry in Ghana is currently in the process of designing an index insurance product for rice and has completed several participatory exercises to understand the impact of drought on rice farmers. They requested that CASCAID could support them with greenhouse experiments on rice's susceptibility to drought (out-of-season timing and budget constraints meant that field experiments were not possible). The results are presented here.
Publication / Creation date: 2016-08-01
Language: English
Country: Ghana
Keywords: Insurance design
Citation: Tettey, A., MacCarthy, D.S., Adiku, S.G.K., Narh, S., Greatrex, H., Afanyedeh, E.A., and Baiden-Amissah, J., "Report on rice response to water stress experiment conducted at the Soil and Irrigation Research Centre, Kpong Ghana", Internal project report
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors:
- Tettey - Abigail
- MacCarthy - Dilys
- Narh - Stephen
- Afanyedeh - E
- Baiden-Amissah - J

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/CASCAID352%20Appendix%20D%20Report%20on%20rice%20experiment%20submitted%20to%20GAIP.pdf

Partners contributing to this deliverable:

Institution	Partner	Type
University of Ghana-Ghana	Maccarthy, Dilys S.K. <dmaccarthy@ug.edu.gh>	Responsible
Columbia University	Greatrex, Helen<greatrex@iri.columbia.edu>	Other

D2611 - 351-CAPACITY STRENGTHENING AND COMMUNICATION MECHANISMS (Lead University of Reading)

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:
<Not Defined>

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: Yes
License adopted: No

Deliverable Metadata

Disseminated title: <Not Defined>
Description / Abstract: Summary report of the key activities and outcomes for Activity 351. The following National Meteorological Services (Mali, Senegal, Burkina Faso and Niger) were trained on the methods for analyzing climatic data in preparation for the implementation of the PICSA approach. This included an online E-Leaning (E-SIAC) and a one week face to face training held in Senegal. Two National Meteorological Services (Ghana and Mali) implemented the initiative ENACTS (Enhancing National Climate Services) with technical support from the International Research Institute for Climate and Society (IRI). The data recovery process of the National Meteorological Services data was supported in Ghana, Mali and Burkina Faso. A statistical state of the art software to support capacity building of NMHS staff working on SCF improvement has been developed. The main statistical methods include principal component and canonical correlations poorly understood by these staff. Continue development for R-INSTAT, launch planned in July 2017. PICSA was implemented in 10 districts in Northern Ghana, Monitoring and Evaluation using ODK, and quantitative and qualitative approach was conducted. Results show approximately 6000 farmers in 140 communities were trained, 97% of trained farmers reported making changes to their practices resulting from PICSA. Trained farmers shared information with 3 to 5 of their peers, meaning that elements of PICSA reached approximately 25000 to 30000 farmers. Training and support of roll out of PICSA was continued in 2016 in Northern Ghana and 6667 farmers were trained working with ADRA and OXFAM as partners. ICRAF and ICRISAT supported by the University of Reading trained NHMS staff from Senegal, Niger, Burkina and Mali in PICSA including local NGOs at a one week workshop in Senegal. further training were also conducted by ICRAF and ICRISAT in Burkina Faso and Mali. PICSA was implemented in one location in Mali.
Publication / Creation date: <Not Defined>
Language: <Not Defined>
Country: <Not Defined>

Keywords: <Not Defined>
Citation: <Not Defined>
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/UoR%20CASCAID%202016%20Annual%20Technical%20report%20Sent.docx

Partners contributing to this deliverable:

Institution	Partner	Type
University of Reading-United Kingdom	Dorward, Peter <p.t.dorward@reading.ac.uk>	Responsible
ICRAF - World Agroforestry Centre	Bayala, Jules<j.bayala@cgiar.org>	Other
ICRISAT - International Crops Research Institute for the Semi-Arid Tropics	Traore, Pierre C. Sibiry<p.s.traore@cgiar.org>	Other

D886 - CCAFS working paper on CCAFS & Insurance in Ghana

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:

- Capacity Development

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: CGSpace

Dissemination URL: https://cgspace.cgiar.org/handle/10568/79898

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Weather-index based crop insurance as a social adaptation to climate change and variability in the Upper West Region of Ghana Developing a participatory approach

Description / Abstract: Climate change and variability are major challenges to rain-fed crop production in Africa. This paper presents a report on a pilot project to test a concept for operationalizing weather- index crop insurance as a social adaptation to the climate change and variability problem in the Upper West Region of Ghana. The weather-index based crop insurance concept discussed herein was developed by combined effort of University of Ghana, the German International Cooperation (GIZ) and the Ghana National Insurance Commission (NIC) since 2010. This development was carried out via their filial, the Ghana Agricultural Insurance Pool (GAIP). The proposed concept sought to link various agricultural stakeholders such weather technical persons, farmers, agricultural extension officer, input dealers and other aggregators, and financial institutions as well as the insurance industry and focused on a participatory farmer led approach. The piloting of the concept was supported by the Climate Change and Food Security (CCAFs) project and was tested in the years 2012 and 2013 using a theatrical drama sketch in two districts in the Upper West Region of Ghana: Jirapa and Lawra. It was observed that training of farmers in the basic principles of weather (data collection, interpretation, etc.) facilitated the discussions on drought insurance, adding to the body of evidence supporting participatory design tools. The aim of this paper is to record this process and to put the results into recent context, through discussing them through the lens of insurance operations and research in Ghana. Ensuing discussions showed that although all stakeholders considered the participatory design tools to be meritorious, a number of logistical challenges were identified that need to be addressed for effective scaling. The study also highlighted the high spatial variability of rainfall in the Upper West region of Ghana, showing the necessity of satellite-derived rainfall products. Finally, the framework suggested in this report highlights the complexity and the

institutional structures required to implement an effective insurance. In effect, our simple study has exposed the complexities and intricacies that must be overcome in establishing a sustainable insurance scheme in Ghana.

Publication / Creation date: 2016-12-01

Language: English

Country: Ghana

Keywords: insurance, participatory, drama, index insurance

Citation: Adiku, S.G.K, Debrah-Afanyede, E., Greatrex, H, Zougmore, R. and MacCarthy, D.S., 2016. Weather- Index Based Crop Insurance as a Social Adaptation to Climate Change and Variability in the Upper West Region of Ghana; Developing a participatory approach, CCAFS Working Paper no. 189. 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/10568/79898

DOI: <Not Defined>

Creator / Authors:

- Adiku - Samuel
- Debrah-Afanyede - Evelyn
- Greatrex - Helen<orcid.org/0000-0002-1047-9276>
- Zougmore - Robert
- MacCarthy - Dilys

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

Institution	Partner	Type
Columbia University-United States	Greatrex, Helen <greatrex@iri.columbia.edu>	Responsible
University of Ghana	Maccarthy, Dilys S.K.<dmaccarthy@ug.edu.gh>	Other

D1240 - Development and implementation of project-wide monitoring and evaluation (M&E) system (including social differentiation / gender)

Main Information

Type: Data, models and tools

Subtype: Database/Dataset/Data documentation

Status: Cancelled

Year of expected completion: 2015

Justification of new expected date of completion: Additional fund cuts could not support the proposed 11K small contract to IUCN. M&E has only been applied on PICSA in Ghana (activity 351) - already reported upon in the previous cycle. Options are being explored with staff involved in the PICSA work M&E and with the related USAID-funded CINSERE project in Senegal, in which Seynabou Diouf a M&E officer has been hired. However based on current budgets this deliverable cannot be committed anymore.

Cross-cutting dimension:
<Not Defined>

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: No
Open access restriction: <Not Defined>
License adopted: No

Deliverable Metadata

Disseminated title: <Not Defined>
Description / Abstract: <Not Defined>
Publication / Creation date: <Not Defined>
Language: <Not Defined>
Country: <Not Defined>
Keywords: <Not Defined>
Citation: <Not Defined>
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Process of data quality assurance: <Not Defined>
Data dictionary: <Not Defined>
Are the tools used for data collection available: <Not Defined>

Deliverable Data sharing

Deliverable files:

<Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type
ICRISAT - International Crops Research Institute for the Semi-Arid Tropics	Traore, Pierre C. Sibiry <p.s.traore@cgiar.org>	Responsible

D1018 - One paper on RS estimates of NDVI and plant height time profiles of smallholder crops

Main Information

Type: Articles and Books

Subtype: Journal Article (peer reviewed)

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 Channel: Other

Dissemination URL:
http://www.mdpi.com/2072-4292/8/6/531/htm

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Quantifying Fertilizer Application Response Variability with VHR Satellite NDVI Time Series in a Rainfed Smallholder Cropping System of Mali

Description / Abstract: Soil fertility in smallholder farming areas is known to vary strongly on multiple scales. This study measures the sensitivity of the recorded satellite signal to on-farm soil fertility treatments applied to five crop types, and quantifies this fertilization effect with respect to within-field variation, between-field variation and field position in the catena. Plant growth was assessed in 5–6 plots per field in 48 fields located in the Sudano-Sahelian agro-ecological zone of southeastern Mali. A unique series of Very High Resolution (VHR) satellite and Unmanned Aerial Vehicle (UAV) images were used to calculate the Normalized Difference Vegetation Index (NDVI). In this experiment, for half of the fields at least 50% of the NDVI variance within a field was due to fertilization. Moreover, the sensitivity of NDVI to fertilizer application was crop-dependent and varied through the season, with optima at the end of August for peanut and cotton and early October for sorghum and maize. The influence of fertilizer on NDVI was comparatively small at the landscape scale (up to 35% of total variation), relative to the influence of other components of variation such as field management and catena position. The NDVI response could only partially be benchmarked against a fertilization reference within the field. We conclude that comparisons of the spatial and temporal responses of NDVI, with respect to fertilization and crop management, requires a stratification of soil catena-related crop growth conditions at the landscape scale.

Publication / Creation date: 2016-06-01

Language: English

Country: Mali

Keywords: precision agriculture, fertility, UAV, very high resolution, Digital Globe time series, heterogeneous landscape

Citation: Blaes, X., Chomé, G., Lambert, M.J., Traoré, P.S., Schut, A.G. and Defourny, P., 2016. Quantifying Fertilizer Application Response Variability with VHR Satellite NDVI Time Series in a Rainfed

Smallholder Cropping System of Mali. Remote Sensing, 8(6), p.531.
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors:
- Blaes - Xavier
- Chome - Guillaume
- Lambert - Marie-Julie
- Traore - Pierre C. Sibiry
- Schut - Antonius G.
- Defourny - Pierre

Publication Metadata

Volume: 8
Issue: 6
Pages: 531
Journal/Publisher name: Remote Sensing
Indicators for journal articles: ● This journal article is an ISI publication
● This article have a co-author from a developing country National Agricultural Research System (NARS)
● This article have a co-author based in an Earth System Science-related academic department
Publication acknowledge: Yes
Flagships contribution: ● DRYLAND SYSTEMS

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	Traore, Pierre C. Sibiry <p.s.traore@cgiar.org>	Responsible

D2555 - Capacity building on agricultural insurance for aggregators in Northern Ghana - workshop report

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:

- Capacity Development

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: CGSpace

Dissemination URL: http://hdl.handle.net/10568/79934

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Capacity building on agricultural insurance for aggregators in Northern Ghana

Description / Abstract: Farming is a risky business. Shocks such as drought, flood, pests or disease can make it difficult for farmers to invest in new productive options, such as seeds or fertilizer. These shocks are often regional, reverberating past the level of the individual smallholder. This makes it equally difficult for aggregators such as seed companies, input providers, agri-shops, seed growers and for commercial farmers, all of whom rely on the yields of a large number of smallholders or out-growers. Agricultural insurance is one way to mitigate this risk, unlocking new markets and making existing markets more profitable Most training on insurance is either designed for poor smallholder farmers, or for very large aggregators (e.g. a country-wide fertilizer company). Less attention has been paid to small and medium level aggregators, who might have tens or hundreds of acres, or have a relationship with a smaller number of out growers (tens to thousands). However, connecting with these stakeholders is one method of scaling insurance in a sustainable fashion. The local nature of many of the aggregators allows insurance to reach smallholders without personally visiting every village. The aggregators are also typically from the local communities and can act as champions for new initiatives. These same incentives for connecting with aggregators also hold true for other CCAFS and rural development initiatives. The aim of this workshop was to reach a group of local aggregators in rural Ghana with tailored insurance capacity building material, detailed in this report. A secondary aim was to gather their feedback about their experiences with agricultural insurance, along with jointly designed ideas about how insurance could more easily fit in with their practices.

Publication / Creation date: 2016-05-01

Language: English

Country: Ghana

Keywords: insurance, meso insurance, aggregators,
Citation: Greatrex H, Narh S, Tettey A, Yeboah A, Mahama A. 2017. Capacity building on agricultural insurance for aggregators in Northern Ghana. CCAFS Workshop Report. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
Handle: http://hdl.handle.net/10568/79934
DOI: <Not Defined>

Creator / Authors:
- Greatrex - Helen<orcid.org/0000-0002-1047-9276>
- Narh - Stephen
- Tettey - Abigail
- Yeboah - Angelina
- Mahama - Aswad

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

Institution	Partner	Type
Columbia University-United States	Greatrex, Helen <greatrex@iri.columbia.edu>	Responsible
University of Ghana	Maccarthy, Dilys S.K.<dmaccarthy@ug.edu.gh>	Other

D892 - Blog article on insurance and satellites

Main Information

Type: Outreach products

Subtype: Blog

Status: Complete

Year of expected completion: 2015

New expected year: 2016

Cross-cutting dimension:
<Not Defined>

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: Other

Dissemination URL: http://iri.columbia.edu/news/remote-sensing-and-index-insurance-finding-a-common-language/

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Remote Sensing and Index Insurance: Finding a Common Language
Description / Abstract: Satellite products could give index insurance projects the scaling power they seek, but challenges remain. A workshop held earlier this year addressed these challenges head on. This blog describes the findings.
Publication / Creation date: 2016-08-10
Language: ENG
Country: <Not Defined>
Keywords: insurance, satellites
Citation: Powell B., and Greatrex H. "Remote Sensing and Index Insurance: Finding a Common Language", Blog article for the International Research Institute for Climate and Society, August 10 2016, accessed at http://iri.columbia.edu/news/remote-sensing-and-index-insurance-finding-a-common-language/
Handle: http://iri.columbia.edu/news/remote-sensing-and-index-insurance-finding-a-common-language/
DOI: <Not Defined>
Creator / Authors:
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Partners contributing to this deliverable:

Institution	Partner	Type
Columbia University-United States	Greatrex, Helen	Responsible

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MANOBI S.A. - MANOBI Société Anonyme	Annerose, Daniel<daniel.annerose@manobi.net>	Other
University of Ghana	Maccarthy, Dilys S.K.<dmaccarthy@ug.edu.gh>	Other

D2557 - Peer reviewed paper on satellites and insurance design

Main Information

Type: Articles and Books

Subtype: Journal Article (peer reviewed)

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- Capacity Development

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: Other

Dissemination URL: http://journals.ametsoc.org/doi/abs/10.1175/BAMS-D-16-0148.1

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Incorporating Satellite Data Into Weather Index Insurance
Description / Abstract: Summary of a February 2016 workshop on satellites and insurance which pulled together stakeholders from the insurance industry and satellite rainfall experts
Publication / Creation date: 2016-06-06
Language: English
Country: Global
Keywords: insurance, satellites
Citation: Black, E., Greatrex, H., Young, M., & Maidment, R. (2016). Incorporating Satellite Data Into Weather Index Insurance. Bulletin of the American Meteorological Society, 97(10), ES203-ES206.
Handle: http://journals.ametsoc.org/doi/full/10.1175/BAMS-D-16-0148.1
DOI: http://dx.doi.org/10.1175/BAMS-D-16-0148.1
Creator / Authors:

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- Greatrex - Helen<orcid.org/0000-0002-1047-9276>
- Maidment - Ross<orcid.org/0000-0003-2054-3259>
- Young - Matthew

Publication Metadata

Volume: 97
Issue: 10
Pages: ES203-ES206.
Journal/Publisher name: Bulletin of the American Meteorological Society

Indicators for journal articles: ● This journal article is an ISI publication
● This article have a co-author based in an Earth System Science-related academic department
Publication acknowledge: Yes
Flagships contribution:

Deliverable Quality check

FAIR Compliant: F A I R

Partners contributing to this deliverable:

Institution	Partner	Type
Columbia University-United States	Greatrex, Helen <greatrex@iri.columbia.edu>	Responsible

D1022 - One CRAFT training workshop held at University of Florida for 4 NMHS and 4 NARS

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:

- Capacity Development

Deliverable dissemination

Is this deliverable already disseminated: No

Open access: No

Open access restriction: Effective Date Restriction - embargoed periods (if so, what are these periods?)

Restricted embargoed date: 2018-12-31

License adopted: No

Deliverable Metadata

Disseminated title: Capacitating African Smallholders with Climate Advisories and Insurance Development ? Activity 350: Improved crop monitoring and yield prediction

Description / Abstract: A training on the use of CRAFT was organised by the University of Florida involving 12 participants from University of Florida, ICRISAT, AGRHYMET and WASCAL. Generation and upload of climate, soil and observed input data was done. The upload of agricultural management and crop mask is still to be achieved using the Sentinel 2 observed data. Incorporation of the SARRAH crop model into CRAFT was achieved.

Publication / Creation date: 2016-12-01

Language: English

Country: Mali

Keywords: CRAFT, Mali, CILSS, Agrhymet

Citation: Hoogenboom, G., 2016. Capacitating African Smallholders with Climate Advisories and Insurance Development ? Activity 350: Improved crop monitoring and yield prediction. University of Florida Technical Report to ICRISAT. 5 p. Dec. 2016

Handle: <Not Defined>

DOI: <Not Defined>

Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/CMDT_Soil.txt
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/Soil_Mask_CMDT.txt
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/CRAFT%202016%20Training%20Program.pdf
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/Annex%20B_PTR%2012%2016%202016%20University%20of%20Florida_A350.3_Report.pdf

Partners contributing to this deliverable:

Institution	Partner	Type
AGRHYMET - Centre regional AGRHYMET	Traore, Seydou <S.Traore@agrhymet.ne>	Responsible
ICRISAT - International Crops Research Institute for the Semi-Arid Tropics	Traore, Pierre C. Sibiry<p.s.traore@cgiar.org>	Other

D2559 - Assessment of basis risk for the Ghanaian insurance industry

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:

- Capacity Development

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: No
Open access restriction: Not Disseminated
License adopted: No

Deliverable Metadata

Disseminated title: Assessment of Basis Risk for the Ghanaian insurance industry
Description / Abstract: This is an assessment of the maize index for the Ghana Agricultural Insurance Pool (GAIP). It examines how different satellite products affect the index and validates the indices against several sources of data gathered elsewhere in CASCAID-352. For example, it validates the data against structured farmers perceptions gathered in 2015 fieldwork campaigns. The nature of working alongside commercial companies means that this report must be assessed before any public dissemination. The CCAFS science, tools and results are of course freely available, but the current report contains commercial details of their product, which CCAFS does not have permission to share.
Publication / Creation date: 2016-10-01
Language: English
Country: Ghana
Keywords: insurance, basis risk, satellite rainfall, remote sensing, index insurance
Citation: Greatrex, H, Assessing the basis risk of the Ghana Agricultural Insurance Pool maize index, project report for CASCAID, current draft is not publicly sharable
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
https://marlo.cgiar.org/data/ccafs/projects//46/deliverableDataSharing/CASCAID352%20Appendix%20K%20GAIP%20Basis%20Risk%20Report.pdf

Partners contributing to this deliverable:

Institution	Partner	Type
Columbia University-United States	Greatrex, Helen <greatrex@iri.columbia.edu>	Responsible
University of Ghana	Maccarthy, Dilys S.K.<dmaccarthy@ug.edu.gh>	Other

D896 - Setting up partnerships and CoP

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:

- Capacity Development

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: Dataverse (Harvard)

Dissemination URL: http://outputs.worldagroforestry.org/cgi-bin/koha/opac-detail.pl?biblionumber=39237

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: Bayala J, Zougmoré R, Ky-Dembele C, Bationo BA, Buah S, Sanogo D, Somda J, Tougiani A, Traoré K, Kalinganire A. 2016. Towards developing scalable climate-smart village models: approach and lessons learnt from pilot research in West Africa. ICRAF Occasional Paper No. 25. Nairobi: World Agroforestry Centre

Description / Abstract: This occasional paper presents a report from a project on "Developing community-based climate smart agriculture through participatory action research in CCAFS benchmark sites in West Africa" which is a joint initiative of CCAFS-West Africa programme and ICRAF-WCA. The consortia or CoP we have worked with within the four countries have been built and revitalized from this previous work which has been described in the occasional paper.

Publication / Creation date: 2016-07-01

Language: English

Country: Kenya

Keywords: <Not Defined>

Citation: Bayala J, Zougmoré R, Ky-Dembele C, Bationo BA, Buah S, Sanogo D, Somda J, Tougiani A, Traoré K, Kalinganire A. 2016. Towards developing scalable climate-smart village models: approach and lessons learnt from pilot research in West Africa. ICRAF Occasional Paper No. 25. Nairobi

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
ICRAF - World Agroforestry Centre	Bayala, Jules <j.bayala@cgiar.org>	Responsible

D1024 - Farmer-observer network established for rain, yield/crop condition measurements with 90 farmers registered in Nioro Senegal

Main Information

Type: Data, models and tools

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

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- Gender
- Youth
- Capacity Development

Gender level(s):

- Collection of sex-disaggregated data
- Analysis of sex-disaggregated data
- Monitoring/impact assessment of gender outcomes of research/innovations/interventions/polices

Deliverable dissemination

Is this deliverable already disseminated: Yes

Dissemination Channel: Other

Dissemination URL: http://map.africacommodityvillage.com

Open access: No

Open access restriction: Restricted Use Agreement - Restricted access (if so, what are these periods?)

Restricted access until: 2018-12-31

License adopted: No

Deliverable Metadata

Disseminated title: Africa Commodity Village

Description / Abstract: 3,290 farmers have been interviewed, geolocated, registered and integrated to an online platform (Nioro district: 2,255 farmers; Kolda district: 1,035 farmers) achieving a 3,600% achievement rate compared to the original target of 90 farmers. For each of these farmers a full socio-economic characterization was conducted, and the boundary of one single production plot was mapped. Each plot was fully characterized for land use, soil type and 2016 agronomic operations. Using the Dancette method, a sowing date model has been developed to inform these farmers on the optimal sowing date in their region based on rainfall historical records. 48 rain gauges have been installed in Nioro and Kolda with one farmer observer network created in Kolda. A memorandum of agreement was signed with WFP/R4 project for joint operations in Kolda, including weather index based insurance. A Joint Management Unit was established between MANOBI and CNAAS under which over 30,000 CNAAS agricultural insurance policies issued since 2007 have been inserted in the platform, now used by CNAAS to sell and monitor contracts. Work is underway to develop

aggregation and anonymization procedures to provide aggregate data in the pre-competitive public domain in compliance with the protection of farmer personal information.
Publication / Creation date: 2016-12-01
Language: English, French
Country: Senegal
Keywords: mAgri, Senegal, Nioro, Kolda, IT platform, smallholders, 2016 campaign
Citation: MANOBI, 2016. mAgri/JotBi 2016 database for 3,290 peanut and maize farmers of the Nioro, Kolda districts. Accessible under security restrictions at http://map.africacommodityvillage.com and http://www.jotbi.com
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors:
- Annerose - Daniel
- Traore - Pierre C. Sibiry
- Ndour - Madieye
- Mbesse - Patrick
- Kafando - Luc
- Nenkam - Andree M.

Partners contributing to this deliverable:

Institution	Partner	Type
MANOBI S.A. - MANOBI Société Anonyme	Annerose, Daniel <daniel.annerose@manobi.net>	Responsible
ICRISAT - International Crops Research Institute for the Semi-Arid Tropics	Traore, Pierre C. Sibiry<p.s.traore@cgiar.org>	Other

5.3 Project Highlights

Project highlight 166	
Title: Remote Sensing and Index Insurance: Finding a Common Language	
Author: Helen Greatrex	**Subject:** Remote sensing; index insurnace; stakeholder engagement
Publisher:	**Year reported:** 2016
Project highlights types: ● Innovative non-research partnerships ● Successful communications ● Capacity enhancement	**Is global:** Yes
Start date: Jan 2016	**End date:** Dec 2016
Keywords: Remote sensing; index insurnace; stakeholder engagement	**Countries:**
Highlight description: Twenty-three people from six countries came together to discuss how drought insurance based on remotely sensed data can reduce the impact of weather shocks on some of the poorest people in the world. Participants were drawn from financial and agricultural sectors, nongovernmental and governmental organisations, and universities.	
Introduction / Objectives: Weather insurance has shown to be a cost-effective tool for agricultural climate risk management with millions of farmers now covered by weather insurance contracts. Remotely sensed data has become a key tool in allowing WII to scale to levels where it could meaningfully impact poverty. They have been used directly in the creation of indices, in validating existing indices, in tracking insured seasons, and in assessing basis risk. But many technical and logistical challenges remain, not least because insurance design requires collaboration and a "shared language" between many academic and industrial actors. This workshop was designed to overcome this gap.	
Results: Twenty-three people participated, including scientists specializing in rainfall and land surface remote sensing, experts in climate risk management and index insurance, insurance aggregators, and reinsurers. The insurance representatives hold contracts covering several hundred thousand farmers. The workshop consisted of short introductory talks followed by in-depth discussion in breakout groups. Technical challenges were overcome including the development of a protocol for dealing with missing data, a detailed discussion on product requirements vs properties, plus a presentation of new approaches and datasets. There was also a long discussion about the jargon and language used within in insurance. As a result of the workshop there is now regular communication between remote sensing experts and insurance designers. Workshop results also contributed to the development of a practitioners guide for insurance design.	
Partners: University of Reading, TAMSAT group	
Links / Sources for further information: IRI blog - http://iri.columbia.edu/news/remote-sensing-and-index-insurance-finding-a-common-language/ BAMS journal article - http://journals.ametsoc.org/doi/full/10.1175/BAMS-D-16-0148.1	

6. Activities

A346 - PARTICIPATORY ACTION RESEARCH ON CLIMATE SERVICES

Description: This pilot activity builds upon existing initiatives and engages with stakeholders and change agents across scales to achieve effective partnership and ownership. It ensures a collegial site selection process, supports the scaling of relevant information, tactical options and supporting processes tested under #350, 351, 352 in GH/ML/SNl. It expands the use of proven approaches including the CCAFS Kaffrine experience and the PICSA approach. It helps integrate, promote and disseminate better early warning, food security, and farm advisory solutions building on existing tools, e.g. ENACTS, TAMSAT, AgMIP, CRAFT. It seeks convergence with FP1.1 and FP4 projects. Activities #349 and #351 are complementary. Activity #351 develops the supply side of climate services focusing on next-users, #349 develops demand side working with end-users. Univ. Reading, Agrhymet Regional Centre and ICRISAT are primary supporting partners. Boundary organizations to assist in dissemination and uptake will be identified in PY1 for each target country and district.

Start date: Jan 2015 **End date:** Dec 2018

Activity leader: ICRAF - World Agroforestry Centre Bayala, Jules <j.bayala@cgiar.org>
Status: On-going

Overall activity or progress made during this cycle: Two refresher trainings for ADRA (22-23 Feb) and OXFAM (25-26 Feb) in Ghana and PICSA trainings for Senegal (14-18 March 2016), Burkina Faso (11-15 April 2016) and Mali (25-29 April 2016) were conducted in 2016. To these trainings have been associated the inventory of promising climate-smart technologies and practices for each of the following four countries: Burkina Faso, Ghana, Senegal and Niger. All these have laid the foundation for testing the options.

Deliverables in this activity:

- D896: Setting up partnerships and CoP
- D911: Deploying a scaling strategy beyond project intervention sites
- D897: Eliciting district-level portfolios of climate services-smart [options x context] through participatory action research

A350 - IMPROVED CROP MONITORING & YIELD FORECASTING

Description: This proof-of-concept activity aims to improve: 1. field-scale yield prediction with remote sensing (RS). A RS data assimilation framework will improve in-season SarraH estimates of crops biomass and grain, using BMGF-STARS Mali data. In 2017 we will incorporate fertility management and satellite imagery. 2. real-time forecasting of district-level food security. CRAFT will be calibrated using historical CMDT data (Mali). This will include capacity building to overhaul EWS down to district level. In 2017 we will migrate from hindcasting to forecasting and expand to Senegal. 3. co-prediction of seasonal climate, crop performance. We will establish 3 grass-root co-forecasting networks in the Kaffrine, Lawra-Jirapa and Segou districts, equipped with rain gauges and mobile plans to provide field-level management, rainfall, crop information in exchange for access to market information, other mobile services. Data collected will be used to develop a mobile yield prediction app. This activity will involve NARS, NMHS and private sector.

Start date: Jan 2015 **End date:** Dec 2018

Activity leader: ICRISAT - International Crops Research Institute for the Semi-Arid Tropics Traore, Pierre C. Sibiry <p.s.traore@cgiar.org>
Status: On-going

Overall activity or progress made during this cycle: EnKF assimilation framework developed with AquaCrop-Open Source in MATLAB and in progress. Datasets curated and uploaded. Sentinel-2 agri Mali pilot secured and providing 500,000 km2 coverage at 10m resolution and 10-day repeat cycle for 2016 for crop condition monitoring, crop type and cropland extent determination. Sarah fully functional within CRAFT. Agrhymet and other regional partners trained on CRAFT, with admin, climate and soil inputs translated. 3,290 farmers registered with full 2016 socio-economic, parcel boundary, agronomic operations, and yield outcomes documented along with 40+ rain gauge network. AgMIP West Africa RIAs providing calibrated models for key local crops in Ghana, Mali, Senegal and important learnings for sustainable climate services. Sowing date app developed with India linkage. Industrial partnerships developed with incorporation of 30,000+ CNAAS insurance contracts in IT platform, connection to processor demand, and CASCAID contributing to successful raising of financial lines of credit (USD 20M value) on two value chains.

Deliverables in this activity:

- D1016: One EnKF (Ensemble Kalman Filter) parameterized in MATLAB with supporting agronomic calibration and validation datasets
- D1018: One paper on RS estimates of NDVI and plant height time profiles of smallholder crops
- D1020: One paper on yield precision improvement (bias reduction / lead time) using EnKF, RS data
- D1022: One CRAFT training workshop held at University of Florida for 4 NMHS and 4 NARS
- D1023: CRAFT calibrated for West African conditions using CMDT data
- D1024: Farmer-observer network established for rain, yield/crop condition measurements with 90 farmers registered in Nioro Senegal
- D1025: Farmer-observer network established for rain, yield/crop condition measurements with 90 farmers registered in Segou, Mali

A351 - CAPACITY STRENGTHENING AND COMMUNICATION MECHANISMS FOR INTEGRATED CLIMATE SERVICES (ICS)

Description: 1. Identify optimal information generating tools and communication approaches: (a) review tools for generating climate-related information, downscaled seasonal forecasts, rain gauge networks; (b) evaluate existing communication approaches (radio, mobile,...) with stakeholders across scales (smallholders, intermediaries, FOs, policy makers). Approaches will include CCAFS-Kaffrine and PICSA 2. Develop capacity of national and regional providers of met. info through training and support to produce and avail historical climate information and to substantially improve seasonal forecasts to station level 3. Improve merging of satellite and ground-truth climatic data. Researchers on ENACTS and TAMSAT work together to deliver historical and near real-time information on daily basis for locations with and without ground-based observations. 4. Develop, pilot and scale sustainable ICS for smallholders using above and partnerships established in #346. Establish pilots in Ghana, Mali PY1-2 and then scale out PY3-4. #346 to support scaling activities. 5. Support #346 on evaluation process design and results analysis.

Start date: Jan 2015 **End date:** Dec 2018

Activity leader: University of Reading-United Kingdom Dorward, Peter <p.t.dorward@reading.ac.uk>
Status: On-going

Overall activity or progress made during this cycle: Four NHMS (Mali, Senegal, Burkina Faso and Niger) were trained on methods for analyzing climatic data. Two NHMS (Ghana and Mali) implemented the initiative ENACTS with technical support from the IRI Columbia University. The data recovery process of the NMHS (Ghana, Mali, Burkina Faso) data was supported. Test and documents methods were designed to support capacity building of NMHS staff working on SCF improvement. R-INSTAT development continues. Launch planned in July 2017 PICSA was implemented in 10 districts in Northern Ghana. Monitoring and evaluation results (2016) show approximately 6000 farmers, and 97% of them made changes to their practices. These farmers shared information with 3 to 5 other farmers, thus approximately 25000-30000 farmers were reached. Roll out of PICSA done in 2016 trained 6667 farmers (Northern Ghana). PICSA trainings of trainers were conducted in Senegal, Burkina Faso and Mali. And PICSA implementation was done in one location in Mali.

Deliverables in this activity:

- D1008: Prototype system for merging gauge and satellite data
- D1007: Analysed historical climate data for 7 stations in northern Ghana
- D2611: 351-CAPACITY STRENGTHENING AND COMMUNICATION MECHANISMS (Lead University of Reading)
- D2952: ENACTS launches in Ghana and Mali, and training of potential stakeholders in Mali

A352 - WEATHER INDEX-BASED CROP INSURANCE SERVICES

Description: Ghana: Further strengthen focus on customised material for index design and integration of index insurance into larger institutional frameworks using PPPs with GAIP and GhanaMet (linking with #351). Key activities include drawing together key partners, initiating farmer led discussions and farmer led programme design (and assessing how these participatory processes can be operationally scaled), agro-meteorological assessments of indices, an assessment how tools such as crop models can be used for insurance development (building on CCAFS-AGMIP research), building stakeholder networks and sustainable business models. Senegal: focus on information flows for index insurance and role of PPPs. Investigate how to ensure effective collection and communication of qualitative, quantitative, historical or "real-time", observations, model-derived information between various stakeholders. Assess how mobile and crowdsourcing can be used with index insurance. 2015: assess current information use in existing index insurance projects, draw together key partners. 2017+: develop information platforms and services for operational insurance programs.

Start date: Jan 2015 **End date:** Dec 2018

Activity leader: Columbia University-United States Greatrex, Helen <greatrex@iri.columbia.edu>
Status: On-going

Overall activity or progress made during this cycle: Ghana: 1. A stakeholders training was held with farm aggregators (commercial farmers etc) to build capacity and understand how insurance can link with their businesses in northern Ghana (inc Upper West), 2. At the request of stakeholders an assessment was made of the drought susceptibilities of rice for insurnace design, 3. Ghanaian insurers attended an international workshop on index design (also a networking opportunity), 4. An assessment was conducted of basis risk on an operational Ghanaian maize index, 5. A CCAFS working paper was published on CCAFS's role in Ghanaian insurance design. Senegal: FOR SIBIRY/MANOBI TO COMPLETE

Deliverables in this activity:

- D2610: Assessment of the impact of drought on rice for insurance design
- D886: CCAFS working paper on CCAFS & Insurance in Ghana
- D887: Materials for gender sensitive index insurance design and participatory farmer led climate discussions
- D889: A workshop on sustainable index insurance design for Ghana
- D2557: Peer reviewed paper on satellites and insurance design
- D2559: Assessment of basis risk for the Ghanaian insurance industry

A380 - PROJECT COORDINATION AND COLLECTIVE LEARNING

Description: 1. Setup HR, steering committee, communication plan & procedures, engagement objectives vis-a-vis other Flagship and bilateral projects. 2. Initial planning and engagement meeting: discuss and agree on detailed annual work plan targets and reporting deadlines, sub-agreements. 3. Yearly review, learning and planning meeting (02/16): annual internal project reflection, learning and documentation event - adjust project activities. Preparation of yearly reporting to CCAFS. 4. Yearly review, learning and planning meeting (02/17): annual internal project reflection, learning and documentation event - adjust project activities. Preparation of yearly reporting to CCAFS. 5. Yearly review, learning and planning meeting (01/18): annual internal project reflection, learning and documentation event - adjust project activities. Preparation of yearly reporting to CCAFS, plans for project follow-up 6. Yearly review, learning and terminal meeting (11/18): annual internal project reflection, learning and documentation event - adjust project activities. Preparation of final reporting to CCAFS.

Start date: Jan 2015 **End date:** Dec 2018

Activity leader: ICRISAT - International Crops Research Institute for the Semi-Arid Tropics Traore, Pierre C. Sibiry <p.s.traore@cgiar.org>
Status: On-going

Overall activity or progress made during this cycle: cf deliverables

Deliverables in this activity:

- D1234: Setup of dedicate human resources, steering committee with rotation schedule, communication and collective learning plan
- D1235: Initial planning and engagement meeting (Jan/Feb 2015)
- D1236: Yearly review, learning and planning meeting (2015)
- D1237: Yearly review, learning and planning meeting (Feb. 2017)
- D1238: Yearly review, learning and planning meeting (Jan. 2018)
- D1239: Yearly review, learning and planning meeting (2018)

7. Leverages

Leverage 81 - Capacitating Stakeholders in Using Climate Information for Enhanced Resilience in the Agricultural Sector in WA

Partner name: CORAF/WECARD - West and Central African Council for Agricultural Research and Development

Year: 2016

Flagship: F4 (before F2 - James): Climate Information Services and Climate-Informed Safety Nets

Budget: 1,523,010.00

Leverage 82 - Support NHMS training in Senegal

Partner name: WMO - World Meteorological Organization

Year: 2016

Flagship: F4 (before F2 - James): Climate Information Services and Climate-Informed Safety Nets

Budget: 26,000.00

Title: Scaling up climate-smart agriculture technologies and tools to benefit regional, national and community levels end-users in West Africa

1. Description

Start date	End date	Management liaison	Mgmt. liaison contact
Jan 2015	Dec 2016	RP WA	Zougmore, Robert <R.Zougmore@cgiar.org>

Funding source types	Status	Lead Organization	Project leader
W1/W2	Complete	ICRISAT - International Crops Research Institute for the Semi-Arid Tropics - India	Partey, Samuel <S.Partey@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)
WA: West Africa

Project summary

CCAFS and its partners in West Africa has embarked on a series of pilot testing of approaches and tools in order to capacitate them with relevant best-bet options for an increased adaptive capacity to climate change. With the growing evidence of success for some of the tested approaches, tools, technologies and practices, we initiate the scaling-up and adoption of proven CSA options across the region. The focus will be to expand the scaling up of climate services to guide farm management decision making through various channels such as the Rural Radios in Senegal, SMS and call center communication approach of ESOKO in Ghana, and the agricultural value chain programs in Burkina Faso (PROFIL) and Senegal (PAFA). Also, CCAFS will backstop ROPPA, the West Africa Farmers Network on CSA during the farmers Universities. CCAFS will also support the development of national agriculture action plans through capacitating the National science-policy dialogue platforms.

2. Partners

Partner #1 (Leader)

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

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Project Leader	Partey, Samuel <S.Partey@cgiar.org>	Activity 2014-244 *Leader*. Activity 2014-246 *Leader*. Activity 2014-245 *Leader*. The CCAFS regional program for West Africa, hosted by ICRISAT, engaged a number of initiatives that aimed to disseminate climate information services and climate-smart technologies to benefit end-users in the sub-region. The regional program led these scaling-up initiatives in collaboration with several partners (ANACIM, ESOKO, PROFIL & PAFA projects, ROPPA). The CCAFS WA Program co-designed activity proposals and provided technical and scientific backstopping to scaling up climate-smart agriculture for the benefit of national and regional farming communities in West Africa. Its also supported the national science-policy dialogue platforms to operate effectively.	Patancheru, India
Partner	Zougmore, Robert <R.Zougmore@cgiar.org>	Project leader in charge of project coordination and facilitation.	HQ

Partner #2

Institution: ANACIM - Agence National de l'Aviation Civile et de la Météorologie (Senegal)

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Ndiaye, Ousmane <ondiaye70@gmail.com>	Activity 2014-244 *Partner*. ANACIM was responsible for capacitating through trainings and information sharing, the URAC radio network to disseminate climate information services to farmers in Senegal. ANACIM has: (1) Inventoried farmers' specific climate information needs and indigenous knowledge on bioclimate indicators; (2) Co-produced climate services that respond to farmers' priority information needs for farm management decision making; (3) Cordinated field trials with farmers; (4) Trained boundary organizations and extension services, partner professional communicators (rural radios) to understand and communicate probabilistic forecast information; and (5) Mainstreamed climate-smart agriculture approach in all sites consolidated through partnership with the C-CASA platform.	HQ

Partner #3

Institution: ESOKO Limited-Ghana

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Gordon Kotey, Nikoi <gordon@esoko.com>	Activity 2014-244 *Partner*. In Northern Ghana, Esoko used its ICT platform (in collaboration with Ghana met and Toto Agric in Kenya) to disseminate climate information services, mainly seasonal forecasts, CSA technologies and practices and nowcasts (advisories about eminent climate events like floods) to farmers. In addition, Esoko collaborated with CSIR-SARI and MOFA to establish a data base of farmers and organized two training sessions to farmers on the protocol for using their mobile phone to receive climate information services and also revert to the platform call center.	HQ

Partner #4

Institution: ISRA - Institut Senegalais de Recherche Agricole

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Dia, Djiby <djibydia@gmail.com>	Activity 2014-244 *Partner*. ISRA improved added value of climate information services for value chain crops (such as millet and cowpea) in Senegal. In partnership with PAFA and ANACIM, ISRA/BAME implemented this activity in the PAFA zones of Senegal. Climate information/ services as CSA options were mainstreamed into agricultural value chain crops production through training sessions. A survey was also conducted at farm level to assess the added-value, the cost-benefits of implementing tailored climatic information and to assess the contribution of these CSA options into the value chain. ISRA has been leading the testing of climate-smart villages models in Senegal.	HQ

Partner #5

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

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Some, Leopold <bsomel@yahoo.fr>	Activity 2014-244 *Partner*. In partnership with PROFIL project, INERA tested with farmers from the project (Yatenga region, Burkina), the added value of climate information services for value chain crops (such as cowpea and sesame). Climate information services as CSA options were mainstreamed into agricultural value chain crops production through training sessions, rural radio and extension services. A survey was also conducted at farm level to assess the added-value, the cost-benefits of implementing tailored climatic information and to assess the contribution of these CSA options into the value chain. INERA has been leading the testing of climate-smart villages models in Burkina.	HQ

Partner #6

Institution: ROPPA - Reseau des organisations paysannes et des producteurs agricoles de l'Afrique de l'Ouest

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Tioro, Andre <atioro@yahoo.fr>	Activity 2014-245 *Partner*. Through organizing its farmers' University, ROPPA, the West African farmers organization network, contributed to the training of trainers from 13 ROPPA national platforms (including national constitutencies, youth groups, women groups, leaders, national platforms) on (1) the concept of climate smart agriculture, (2) existing or promising approaches and technologies, and (3) areas of application in the context of the promotion of family farming to foster income generating.	HQ

Partner #7

Institution: CSIR - Council for Scientific and Industrial Research

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Karbo, Naaminong <minongkordam@yahoo.com>	Activity 2014-246 *Partner*. CSIR-Animal Research Institute (CSIR-ARI) is the focal institution for the Ghana science-policy dialogue platform. CSIR-ARI facilitated the functioning of the national science-policy dialogue platform of Ghana through (1) holding periodic meetings (such as the Climate Change and Livestock Development Conference held at the University of Cape Coast in February, 2015); (2) undertaking specific activities in Ghana such as coordinating and facilitating national discussion on climate change, agric. & food security that culminated to the development of the national climate-smart agriculture and food security action plan (2016-2020).	HQ

Partner #8

Institution: AEDD - Agence de l'Environnement et du Développement Durable (Mali)

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Keita, Aissata <bijou842002@yahoo.com>	Activity 2014-246 *Partner*. AEDD is the focal institution for the Mali science-policy dialogue platform. AEDD collaborated with AMEDD NGO, member of the platform, to facilitate the functioning of the national science-policy dialogue platform of Mali through (1) holding periodic meetings for knowledge exchange among platform members; (2) undertaking specific activities in Mali such as coordinating and facilitating the CSA prioritization exercise in Mali. AEDD also organized special high level events such as the special session with the Malian parliament to share the results of the CSA prioritization in Mali.	HQ

Partner #9

Institution: CNEDD - Conseil National de l'Environnement pour un Développement Durable (Niger)

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Safi Solange, Bako <safimod07@yahoo.fr>	Activity 2014-246 *Partner*. CNEDD is the focal institution for the Niger science-policy dialogue platform. This year, CNEDD has not been able to submit a work plan though they the platform has held periodic meetings, and has been involved in national discussion on climate change, agric. & food security in Niger. In addition, CNEDD played key roles in linking up CCAFS WA to the Niger World Bank Program on CSA, led by the "3N".	HQ

Partner #10

Institution: Ministère de l'Agriculture et de l'Equipment Rural-Senegal

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	DIEYE, Bounama <bounama1968@gmail.com>	Activity 2014-246 *Partner*. DA/MAER is the focal institution for the Senegal science-policy dialogue platform.The ministry consolidated the gains of the CCASA Platform of Senegal by strengthening the institutional and technical capacity of national stakeholders. It also built the capacities of stakeholders to better understand the integration of climate change dimension in policy documents. Also, the ministry improved the scientific and technical visibility of the CCASA Platform and its influence on the national scene. Priority actions have been defined to strengthen the capacity of policy makers on the issue of climate change for decision-making in the agricultural sector.	HQ

Partner #11

Institution: CONEDD - Conseil national de l'environnement et du développement durable

Contact(s):

Type	Contact	Responsibilities and contributions	Branch
Partner	Semde, Idrissa <idsemde@yahoo.fr>	Activity 2014-246 *Partner* Platform has not been operational since 2014.	HQ

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

Year	Lesson(s)
2016	(1) Improved communication with partners (2) Provide support to partners to attend workshops, conference and engagement activities that enhance their capacity in climate change and agricultural development (3) We need to constantly remind and keep partners be result-based, thus some regular back and forth reviews and inputs in their implementation protocols and progress reports.

Partnerships overall over the last reporting period:

We continue to capacitate our partners with approaches, tools, methods and update knowledge on climate change and sustainable agricultural development which contribute backstopping their implementation activities. We also maintain cordial and good working relationships with our partners. We ensure timely signing and payment of contracts. All partners have also been collaborative in the timely delivery of tasks.

3. Locations

This project is not global

Project level	Latitude	Longitude	Name
Country			Senegal
Country			Burkina Faso
Country			Ghana
Country			Mali

4. Outcomes

4.1 Project Outcomes

Project Outcome statement:
Scaling up climate information services to millions of farmers and reduce climate risk for agriculture sector in West Africa

Annual progress towards outcome (end of 2016*): ANACIM works with CCAFS and partners in Senegal to disseminate climate information services to rural population across the whole country

Annual progress towards project outcome in the current reporting cycle (2016*): In 2016, CCAFS WA's major activity was the initiation of the CINSERE project where ANACIM leads the design and communication of the seasonal forecast to help guide farmers' farm management decisions making for reduced climate risks in Senegal. Using the Kaffrine experience, the project is targeted at Senegalese farming, pastoralist and fisheries communities (242 households), including members of both sexes, from 4 USAID Feed the Future (FtF) projects. A technical launch of the project was organised in April 2016 in Dakar. The design phase, needs assessment, communication channels, and baseline surveys were initiated and consisted in: (1) Identification of existing and completed climate service initiatives by the FtF projects actors in Senegal, (2) identification of key stakeholders (public and private) that provide climate services for agriculture in Senegal; (3) identification of current and potential communication channels to reach farmers and fisherfolks, as well as existing and potential structures for climate services. The project has setup and trained 25 multidisciplinary working groups in the FtF zone of influence in Senegal (https://ccafs.cgiar.org/blog/scaling-out-useful-climate-services-increased-resilience-and-productivity-senegal#.WKBAFW-LSpo) In Ghana, CCAFS in collaboration with Esoko continued to provide downscaled seasonal forecast information to farmers in the Upper West Region. An impact study has been conducted with 800 farmers, which showed over 1000 farmers subscribed to the Esoko platform. In addition, the survey showed that climate information services has had significant impact on farmers' management decisions such as what to plant (65% of farmers), when to plant (86%), when to begin land preparation (64%) and when to apply fertilizers which all contributed to improved overall productivity (94%). (https://ccafs.cgiar.org/blog/mobile-phones-help-northern-ghana%E2%80%99s-farming-families-beat-climate-change) In Burkina Faso, farmers in the cowpea and sesame sectors are provided with seasonal climate forecasts. A survey allowed to determine whether producers regularly listen to radio broadcasts and also to determine impacts of access to climate information on CSA practices.

How communication and engagement activities have contributed to achieving your Project outcomes:* As part of our engagement in the region, we communicate regularly with partners in a way to capacitate them valorise their activity outputs/achievements through quality communication products. We also share our interesting stories in the form of blogs, journal papers, info notes, etc. to inform our partners on our work and to improve visibility. Also, in order to guide and evaluate delivery of activities contracted with partners, we designed and shared with them a technical reporting template that help us assess the progress/quantum of work completed and also build on existing database.

Evidence documents of progress towards outcomes:*

https://marlo.cgiar.org/data/ccafs/projects//90/projectOutcome/CINSERE%20project%20leaflet.jpg

Annual progress towards outcome (end of 2015): CCAFS scientists worked with the national meteorological agency, Agence Nationale de l'Aviation Civile et de la Météorologie (ANACIM), the Ghana met service and the ESOKO company, Ghana, to develop more accurate and specific seasonal rainfall forecasts, and to raise capacity of partners to do longer-term analysis and provide more targeted information for farmers. The forecast information provided includes the total rainfall, the onset and end of the rainy season, plus a 10 day forecast across the rainy season. The information is conveyed to farmers as agro-meteorological advisories that are tailored to meet their local needs. Through a partnership with the Union des Radios Associatives et Communautaires du Sénégal (URAC), an association of 73 community-based radio stations promoting economic development through communication and local information exchange, the seasonal forecast will now reach all of Senegal's 14 administrative regions. With ESOKO, Market price alerts, climate smart agricultural advice, weather forecast and voice messages on climate-smart agricultural practices are sent out to farmers from the CCAFS site in Northern Ghana in the language of their (farmers) choice. ROPPA, the West Africa farmers' organisations network, and PROFIL and PAFA, two value chain projects in Senegal and Burkina Faso, also disseminated seasonal forecast information and climates-smart agricultural options to farmers from various agricultural sectors as well as throughout their national constituencies (ROPPA national platforms). With these above mentioned channels, we expect to reach at over two million farmers in 2015.

Annual progress towards outcome (end of 2017): If rural population has access to climate information services, how they use it and for what purpose will be monitored

Annual progress towards outcome (end of 2018):

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:* We are currently consistent with our theory of change.

4.2 CCAFS Outcomes

RP WA Outcome 2019: National level decision-makers (Gov. ministries), national agricultural research systems, NGOs, civil society organizations, regional organizations use CCAFS science-derived decision support tools and systems to mainstream climate change into national plans and policies from local to national levels.

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

2019
Target value: <Not Defined>
Cumulative target to date: 2
Target narrative: <Not Defined>
The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined>

2015
Target value: 1
Cumulative target to date: 1
Target narrative: <Not Defined>
The expected annual gender and social inclusion contribution to this CCAFS outcome: <Not Defined>

2016
Target value: 1 **Cumulative target to date:** 2 **Target achieved:** 0.0 **Target narrative:** A national climate-smart agriculture action plan developed and validated by national stakeholders **Narrative for your achieved targets, including evidence:** None yet but in progress: In Ghana, a 3-day scenario workshop organised by the Ghana Science-Policy Dialogue Platform in collaboration with CCAFS saw the Ghana livestock policy reviewed with recommendations currently being considered to mainstreaming climate change into the policy and also improve the robustness of the livestock sector to future uncertainties. In Burkina Faso, an analysis of the National Rural Sector Program (PNSR) based on the socio-economic and climatic scenarios of CCAFS, was carried out with 22 recommendations and relevant actions being considered to allow for the formulation of the new Rural Sector Development Plan. **Narrative for your achieved annual gender and social inclusion contribution to this CCAFS outcome:** Gender is mainstreamed in all the development processes. **The expected annual gender and social inclusion contribution to this CCAFS outcome:** Men as well as women actors are involved in the development process.

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

4.3 Other Contributions

Contribution to other CCAFS Impact Pathways:
Through our focus work and achievement around the two RP WA - Outcomes 2019, we expect to contributing to CCAFS outcomes as indicated in the WA impact pathways.

Region: RP EA
Indicator: F1 (before F4 - Philip)- # of regional/global organisations and processes that inform their equitable institutional investments in climate smart food systems using CCAFS outputs **Contribution to the selected outcomes target in 2016:** At regional level, ECOWAS is putting in place institutional arrangements and policies that will foster the promotion of CSA in the region (CSA alliance (WACSAA) and implementation framework) At national level, countries are now considering the national science-policy dialogue platforms as powerful tools to guide national decision making for issues related to climate change (e.g. the platforms of Senegal, Mali and Ghana). These national platforms form for instance the basis for developing CSA country profiles to inform national CSA policies. At sub-national level (district), district-level platforms are put in place to play the driving strap between national and community levels. **Target value contribution:** 1

Collaborating with other CRPs

Forests, Trees and Agroforestry
Description of collaboration: CCAFS collaborated with FTA and CIFOR to implement a joint development of partnership framework for CGIAR research in Burkina Faso, and to support the revision of the PNSR (National Program for Rural Sector) using the CCAFS-led downscaled scenarios for West Africa.

4.4 Case Studies

Case Study #90

Title: Climate information services reach Northern Ghana farmers through a market-led ICT approach

Year: 2016

Project(s): P90

Outcome Statement: An innovative PPP business model pilot enabled up to 1000 farmers to access useful climate information services for improved livelihoods in Northern Ghana

Research Outputs: ESOKO company partnered with Ghana Met and CSIR-SARI to generate tailored climate information services bundled in information alerts that are shared directly to farmers through mobile phones. Sessional weather forecasts, now cast, Market price alerts, climate smart agricultural advice and voice messages on best agricultural practices were developed as outputs. Climate-smart agricultural advices were converted to voice and sent out to beneficiaries in the language of their (farmers) choice - Dagaare. ESOKO developed partnerships with GMET (was responsable in providing Esoko with seasonal weather information and train the call and content team on the forecast for the season); with CSIR (provided Esoko with experts in all aspects of agricultural productivity to help disseminate and answer farmers challenges on their farming activities). Esoko also have a working MoU with MoFA to support a quick movement to farm location of beneficiaries to get a clear picture of what farmers are describing.

Research Partners: 1. Ghana Met Agency 2. CSIR-SARI (Council for Scientific and Industrial Research-Savana Agricultural Research Institute)

Activities: CCAFS initiated and designed a pilot on how to generate a PPP that could allow to sustainably disseminate CIS to farmers through ICT platform, for their farm management decision making vis-à-vis climate variability. Through collaboration between Esoko and the Ghana Meteorological Agency, downscaled seasonal forecast information and agro-advisories were disseminated to farmers through mobile phones. Farmers accessed climate information on their phones as voice alerts, SMS or by calling the Esoko call center. In addition, Esoko provides agro-advisories in collaboration with CSIR-SARI to help farmers apply the best CSA technologies based on downscaled seasonal forecast information received. CSIR, MoFA and farmers received training from ESOKO, to familiarize them with the online platform and products (profiling, grouping, setting up mobile alerts, sending bulk SMS push, understanding SMS). The Farmer Helpline recorded 238 farmers who called to inquire about agro-climate forecast for the season to enable them plan their farming activities.

Non-Research Partneres: 1. Ghana Meteorological Agency 2. MoFA (Ministry of Food and Agriculture)

Output Users: Primary users include individual farmers and traders, farmers' associations, agribusinesses, and public sector organizations such as national agricultural ministries

Evidence Outcome: (a) Mobile phones help Northern Ghana's farming families beat climate change. Available at: https://ccafs.cgiar.org/blog/mobile-phones-help-northern-ghana%E2%80%99s-farming-families-beat-climate-change#.WKQn1m-LSpo (b) Blog post - How the Climate-Smart Village approach impacts farmers' livelihoods in Ghana. Available at https://ccafs.cgiar.org/blog/how-climate-smart-village-approach-impacts-farmers-livelihoods-ghana#.WKQqT2-LSpo (c) Video - Stories from Upper West Region Ghana, impact of climate information... Available at: https://youtu.be/koL7TpLFXGg?list=PLmATng7lKk6VImI-kIdzUlcDw-Yu2HgMo

Output Used: Farmers used the seasonal forecast information received from Esoko to make farm management decisions such as when to plant, when to begin land preparation, selection of crop varieties and when to apply inorganic fertilizer and organic manure. In addition farmers are able to decide which CSA technologies to use.

References Case: 1. Nikoi GK, Partey S and Zougmore R. 2016. Mobile phones help Northern Ghana's farming families beat climate change. Available at: https://ccafs.cgiar.org/blog/mobile-phones-help-northern-ghana%E2%80%99s-farming-families-beat-climate-change#.WKQn1m-LSpo. 2. Zougmore R, Partey ST, Ouedraogo M, Nikoi GK and Buah S. 2016. How the Climate-Smart Village approach impacts farmers' livelihoods in Ghana. Available at https://ccafs.cgiar.org/blog/how-climate-smart-village-approach-impacts-farmers-livelihoods-ghana#.WKQqT2-LSpo

Primary 2019 outcome indicator(s):

- 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
- Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions)

Link between outcome story and and the FP Outcome(s): <Not Defined>

Annex uploaded:

Case Study #101

Title: New thematic areas mainstreamed into Burkina Faso's rural development sector plan through CCAFS scenarios work

Year: 2016

Project(s): P63

Outcome Statement: Since 2015, CCAFS has been working with national stakeholders in Burkina Faso to use the socio-economic and climatic scenarios up to 2050 to inform the formulation of the new Rural Sector Development Plan. In 2016, this culminated into a participatory development of 22 recommendations from the scenario process with actions that will contribute to the new 5-year rural development plan. Also, emerging topics (e.g. mainstreaming of CSA), have been identified for consideration in the formulation of the new plan.

Research Outputs: CCAFS West Africa Program worked with the CCAFS global scenario team to organize various scenario workshops with the participation of key stakeholders in charge of the production of the rural development policy in Burkina Faso. This resulted into the production of: (1) 4 downscaled country scenarios that are specific to the case of Burkina Faso; (2) description of short, medium and long terms implications and perspectives of these country-scenarios for the six PNSR axes; (3) translation of these perspectives into 22 recommendations; (3) and definition of several actionable ideas to be included in the new plan as concrete initiatives. These were synthesized and published in an Info note.

Research Partners: Along the process, scientists from CGIAR centers (CIFOR, ICRAF, ICRISAT) and of INERA Burkina Faso actively contributed to the facilitation of various sessions while also being in charge of reporting the sessions' outcomes.

Activities: The writing team of the new PNSR has been capacitated along the various workshops to understand the scenario process, its usefulness and the relevance of its recommendations and potential actions (outputs), which they largely considered during the formulation of the new plan. The participatory process used to develop the recommendations and actions as well as the active inclusion of the national stakeholders in the production of the info note has greatly facilitated their understanding and mainstreaming into the new plan, currently in a finalization phase.

Non-Research Partneres: The permanent secretariat in charge of the coordination of sectorial agricultural policies (SP-CPSA) through its department on rural sector prospects and policies actively led the identification of relevant national stakeholders as well as guiding and taking the lead of sessions during the workshops.

Output Users: The SP-CPSA and the team in charge of writing the new plan, made of 10 senior experts that were selected by the SP-CPSA.

Evidence Outcome: During various SP-CPSA meetings, contents of the Info Note synthesizing the recommendations and actions were mentioned as an important background information that largely feeds the discussions along the development of the new plan. Also, emails received from SP-CPSA Directors explained how they are using the outputs of the scenario work.

Output Used: The team in charge of the final writing of the new PNSR attended the above workshops and have been capacitated to make informed decisions about the actions that are relevant to the plan. New emerging topics identified through the process have been deemed relevant for inclusion in the new plan.

References Case: 1. Zougmoré R, Rutting L, Sidibé A, Ouédraogo J, Zida M, Rabdo A, Ouédraogo M, Balinga M, Vervoort JM, Partey S, Pale R, Ouédraogo M, Pouya Clarisse, Sondo MD. 2016. Formulation d'un Programme National du Secteur Rural robuste au Burkina Faso: Quelles thématiques nouvelles issues du processus des scénarios socio- économiques et climatiques?. CCAFS Info Note. Bamako, Mali: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). https://ccafs.cgiar.org/news/planning-under-uncertainty-development-socio-economic-scenarios-west-africa 2. Abdoulaye R. 2016. Atelier d'échanges sur les recommandations issues des scénarios socio-économiques: Témoignage du facilitateur de groupe. Avilable at https://ccafs.cgiar.org/fr/blog/atelier-d%C3%A9changes-sur-les-recommandations-issues-des-sc%C3%A9narios-socio-%C3%A9conomiques-t%C3%A9moignage-du#.WKQ_TxLJyjQ 3. Emails exchanges from the SP-CPSA High Management.

Primary 2019 outcome indicator(s):

- # 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): <Not Defined>

Annex uploaded:

5. Project outputs

5.1 Overview by MOGs

Major Output groups - 2019

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>

Major Output groups - 2016

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: Using the ESOKO IT platform experience in Northern Ghana to inform the implementation of Ghana CSA action plan

Brief summary of your actual 2016 contribution towards the selected MOG: An impact study showed downscale CIS delivered through the Esoko platform markedly influenced farmers'management decisions thereby contributing to improved farm productivity. Also, the business model seems beneficial to all stakeholders. Therefore, the national science-policy platform has now the evidence that will inform the operationalization of the national CSA action plan.

Brief`2016 plan of the gender and social inclusion dimension of the expected annual output: The level of involvement of various social groups and how women farmers have been receiving and using the climate information were monitored along the implementation

Summary of the gender and social inclusion dimension of the 2016 outputs: Access and use of climate information by various social groups and women farmers were monitored along with project implementation. About 33% women receive downscale seasonal forecast information delivered through the Esoko platform.

Major Output groups - 2015

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: ECOWAS and member-countries now effectively mainstreaming CSA into regional and national agricultural plans and policies through the CSA alliance (WACSAA) and implementation framework (https://ccafs.cgiar.org/blog/alliance-climate-smart-agriculture-launched-west-africa#.VrHKv8YrGpo), the development of country action plans (e.g. Ghana), and the design of National Plan for the Rural Sector for Burkina Faso-PNSR II (https://www.youtube.com/watch?v=sxxMNkvSz0o).

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: Access and use of climate information by various social groups and women farmers were monitored along with project implementation. The Ghana national climate-smart agriculture and food security action plan has clear involvement strategy for women using the Women in Agriculture Development (WIAD) technical directorate of MoFA.

Major Output groups - 2014

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: ECOWAS and member-countries now effectively mainstreaming CSA into regional and national agricultural plans and policies through the CSA alliance (WACSAA) and implementation framework (https://ccafs.cgiar.org/blog/alliance-climate-smart-agriculture-launched-west-africa#.VrHKv8YrGpo), the development of country action plans (e.g. Ghana), and the design of National Plan for the Rural Sector for Burkina Faso-PNSR II (https://www.youtube.com/watch?v=sxxMNkvSz0o).

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: The level of involvement of various social groups and how women farmers have been receiving and using the climate information were monitored along the implementation.

5.2 Deliverables

D2936 - Assessment of mobile phone-based dissemination of weather and market information in the UWR of Ghana

Main Information

Type: Articles and Books

Subtype: Journal Article (peer reviewed)

Status: Complete

Year of expected completion: 2016

New expected year: <Not Defined>

Cross-cutting dimension:

- Gender

Gender level(s):

- Analysis of sex-disaggregated data

Deliverable dissemination

Is this deliverable already disseminated: No

Open access: Yes

License adopted: No

Deliverable Metadata

Disseminated title: An assessment of mobile phone-based dissemination of weather and market information in the Upper West Region of Ghana

Description / Abstract: Background: The rapid growth of mobile phones in Ghana has opened up the possibility of delivering timely and useful weather and market information to farmers at costs lower than traditional agricultural extension services. In this paper, we assess the usefulness, constraints, and factors likely to influence farmers' decisions to patronize mobile phone-based weather and market information. Method: We rely on primary data from 310 farmers in the Upper West Region, an understudied part of Ghana. We subject the data to three types of analysis. Firstly, we model farmers' decision to patronize mobile phone-based weather and market information by estimating a binary logit model. Secondly, we use descriptive statistics and hypothesis testing to analyse the level of usefulness of mobile phone-based weather and market information. We disaggregate the analysis by sex, income status, and age group. Finally, we use qualitative analysis to summarize the constraints associated with the utilization of mobile phone-based weather and market information. Results: We find that contact with agricultural extension agents and farmer-to-farmer extension services significantly influence farmers' decision to patronize mobile phone-based weather and market information. Regardless of sex, income status, and age group, farmers generally rate mobile phone-based weather and market information as very useful. We identify inexact information, complex text messages, information that are too costly to implement, and poor infrastructure as the constraints to the utilization of mobile phone-based weather and market information. Conclusion: In order to improve the utilization of mobile phone-based weather and market information,

disseminators of mobile phone-based information such as Esoko should constantly update and provide client-specific information. Improvements in mobile phone networks and related services will enhance the utilization of mobile phone-based weather and market information

Publication / Creation date: 2017-01-01

Language: English

Country: Ghana

Keywords: Agricultural extension, binary logit, Esoko, Ghana, mobile phone, weather and market information

Citation: Prince Maxwell Etwire, Saaka Buah, Mathieu Ouédraogo, Robert Zougmoré, Samuel Tetteh Partey, Edward Martey, Sidzabda Djibril Dayamba, Jules Bayala, 2016. An assessment of mobile phone-based dissemination of weather and market information in the Upper West Region of Ghana; Agriculture & Food Security.

Handle: RAS

DOI: DOI: 10.1186/s40066-016-0088-y

Creator / Authors: <Not Defined>

Publication Metadata

Volume:

Issue:

Pages:

Journal/Publisher name: Agriculture and Food Security

Indicators for journal articles: ● This journal article is an ISI publication

● This article have a co-author from a developing country National Agricultural Research System (NARS)

● This article have a co-author based in an Earth System Science-related academic department

Publication acknowledge: Yes

Flagships contribution: ● CCAFS - F1 (BEFORE F4 - PHILIP)

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:

<Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type
ESOKO Limited-Ghana	Gordon Kotey, Nikoi <gordon@esoko.com>	Responsible

	CSIR - Council for Scientific and Industrial Research	Karbo, Naaminong <minongkordam@yahoo.com>	Other	

D860 - Documentation of indigenous knowledge on climate forecast by farmers

Main Information

Type: Reports and other publications
Subtype: Research workshop report
Status: Extended
Year of expected completion: 2015
New expected year: 2016
Justification of new expected date of completion: To be completed by end of 2016
Cross-cutting dimension:
<Not Defined>

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: No
Open access restriction: <Not Defined>
License adopted: <Not Defined>

Deliverable Metadata

Disseminated title: <Not Defined>
Description / Abstract: <Not Defined>
Publication / Creation date: <Not Defined>
Language: <Not Defined>
Country: <Not Defined>
Keywords: <Not Defined>
Citation: <Not Defined>
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
<Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type
CSIR - Council for Scientific and Industrial Research	Karbo, Naaminong <minongkordam@yahoo.com>	Responsible

D861 - Basket of climate-smart services, technologies and practices for CSA promotion within ROPPA network

Main Information

Type: Reports and other publications

Subtype: Policy brief/policy note/briefing paper

Status: Extended

Year of expected completion: 2015

New expected year: 2016

Justification of new expected date of completion: To be completed in 2016

Cross-cutting dimension:
<Not Defined>

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: No
Open access restriction: <Not Defined>
License adopted: <Not Defined>

Deliverable Metadata

Disseminated title: <Not Defined>
Description / Abstract: <Not Defined>
Publication / Creation date: <Not Defined>
Language: <Not Defined>
Country: <Not Defined>
Keywords: <Not Defined>
Citation: <Not Defined>
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
<Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type
ROPPA - Reseau des organisations		

paysannes et des producteurs agricoles de l'Afrique de l'Ouest	Tioro, Andre <atioro@yahoo.fr>	Responsible

D1439 - Disseminating climate information and services through IT platform in Ghana

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):

- Collection of sex-disaggregated data

Deliverable dissemination

Is this deliverable already disseminated: No
Open access: Yes
License adopted: No

Deliverable Metadata

Disseminated title: <Not Defined>
Description / Abstract: <Not Defined>
Publication / Creation date: <Not Defined>
Language: <Not Defined>
Country: <Not Defined>
Keywords: <Not Defined>
Citation: <Not Defined>
Handle: <Not Defined>
DOI: <Not Defined>
Creator / Authors: <Not Defined>

Deliverable Quality check

FAIR Compliant: F A I R

Deliverable Data sharing

Deliverable files:
<Not Defined>

Partners contributing to this deliverable:

Institution	Partner	Type

ESOKO Limited-Ghana	Gordon Kotey, Nikoi <gordon@esoko.com>	Responsible

5.3 Project Highlights

No project highlights added

6. Activities

A244 - Scaling up climate information services to reach million farmers in West Africa (IT-radios-Value chain projects)

Description: Following the successful implementation of the communication approach, ANACIM in Senegal has moved ahead through scaling-up the approach by channelling the climate information services through community rural radios in Senegal (URAC). This activity will continue with the 82 rural radios in Senegal. In Ghana, CCAFS initiated during 2014 a collaboration with ESOKO, a private company that can use its IT expertise and network in Ghana to scale up climate smart agriculture technologies in Northern Ghana. The specific goal is to improve access and use of downscaled seasonal forecast and climate smart agriculture technologies and practices (agro-advisories) through mobile phone and ESOKO platform by farmers in Northern Ghana. Some country value chain projects, are interested to mainstream the promising CSA technologies and practices into some of their agricultural sectors (e.g. Bissap, sorghum for PAFA project in Senegal; cowpea and sesame for PROFIL project in Burkina Faso).

Start date: Jan 2015 **End date:** Dec 2017

Activity leader: ICRISAT - International Crops Research Institute for the Semi-Arid Tropics Partey, Samuel <S.Partey@cgiar.org>
Status: On-going

Overall activity or progress made during this cycle: In Sénégal, ANACIM has: (1) Inventoried farmers' specific climate information needs and indigenous knowledge on bioclimate indicators; (2) Co-produced climate services (including traditional and modern indicators) that respond to farmers' priority information needs for farm management decision making; (3) Trained and capacitated user communities and selected farmers to understand and apply climate forecast information; (4) Trained boundary organizations, extension services, partner professional communicators to understand and communicate probabilistic forecast information; and (5) Mainstreamed CSA approach in all sites consolidated through partnership with the C-CASA platform; In Ghana, CCAFS in partnership with Esoko has been improving farmers' access to, and use of downscaled seasonal forecast and agro-advisories through mobile phones. An impact study has successfully been carried out. Similarly, PROFIL and PAFA, (two value chain projects in Senegal and Burkina Faso), also disseminated seasonal forecast information and climates-smart agricultural options to farmers from various agricultural sectors and ROPPA national platforms.

Deliverables in this activity:

- D1439: Disseminating climate information and services through IT platform in Ghana

A245 - Using ROPPA platforms to pilot proven CSA options

Description: As a follow up to CCAFS technical backstopping on CSA during the farmers' University of the West Africa Farmers Network (ROPPA, http://www.roppa.info/spip.php?article196), this organisation is interested to strengthen its national platforms capacity for a better understanding and use of climate-smart agriculture technologies and practices. Through this activity, pilot tests on CSA options will be implemented with some of the 13 ROPPA national platforms in West Africa. The aim is to foster the mainstreaming of CSA into ROPPA strategic planning and to promote the widespread use of CSA within ROPPA farmers across West Africa. ROPPA will coordinate the piloting of successful CSA options that could increase the family farm sovereignty.

Start date: Jan 2015 **End date:** Dec 2016

Activity leader: ICRISAT - International Crops Research Institute for the Semi-Arid Tropics Partey, Samuel <S.Partey@cgiar.org>
Status: Complete

Overall activity or progress made during this cycle: CSA is mainstreamed into ROPPA strategic planning. There is currently widespread use of CSA within ROPPA farmers across West Africa.

Deliverables in this activity:

- D1101: Workshop
- D1101: Workshop

A246 - Backstopping national science policy platforms to mainstreaming climate change into agricultural development plans and policies

Description: In West Africa, CCAFS supported the setup of national science-policy dialogue platforms in each of the five pilot countries. Nowadays, these platforms are shown capacity to reach national high level policy and decision makers and therefore can become truly springboards to use CCAFS science to inform national decision making. This activity aim to provide scientific and technical backstopping to allow the platforms move ahead with the development of climate change action plans for agriculture. The CCAFS engagement with countries focal institutions in charge of facilitating the functioning of these platforms (CNEDD-Niger, CONEDD-Burkina Faso, DAMER-Senegal, AEDD-Mali, CSIR-ARI-Ghana) will be strengthened through regular involvement of partners to CCAFS-led major events.

Start date: Jan 2015 **End date:** Dec 2016

Activity leader: ICRISAT - International Crops Research Institute for the Semi-Arid Tropics Partey, Samuel <S.Partey@cgiar.org>
Status: Complete

Overall activity or progress made during this cycle: A national CSA action plan has been developed for Ghana

Deliverables in this activity:

- D862: National Climate-Smart Agriculture and Food Security Action Plan (2016 - 2020)
- D862: National Climate-Smart Agriculture and Food Security Action Plan (2016 - 2020)

7. Leverages

No leverages added