



RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**



**RPL West Africa
2013 technical report**

1. Activity Reporting

Activity 284-2013 (Milestone 1.1.2 2013 (3).)

Title: Capacity building workshops on the analogue method, cataloguing climatic risk management strategies, understanding social and cultural barriers to adapting through farmer exchange visits between analogue sites.

Status: Partially complete. 35 participants (from Burkina Faso, Ghana, Mali, Niger and Senegal) were trained to use the analogue tool and the farms of the future approach. About 100 participants (farmers and agricultural innovations stakeholders - AIS) hailing from the CCAFS sites visited respective analogue sites in each of the five countries.

Gender component:

Gender was considered in the two main components of this activity: a) 5 women and 10 early career researchers attended the regional training workshop on the analogue, b) about 30 women and 35 youth took part at the exchange visits at analogues sites.

Deliverables:

- Project activity report on the workshop and the implementation of the farms of the future exchange visits at the sites; - Policy brief on the potential of the analogue tool and its farms of the future approach to strengthen adaptation capacity; - 45 participants (district level extension services, national level planning officers and policy-makers) capacitated on the analogue tool and its farms of the future approach

Partners:

SARI; INERA; IER; INRAN; ISRA; INSAH; AGRHYMET

Locations:

West Africa (WA)

Activity 461-2013 (Milestone 1.3.2 2014.)

Title: Planning for a climate-smart future in a cereal-commodity sector in West Africa: A case study on cereals (rice, sorghum, millet) in Senegal

Status: Incomplete. The activity initially planned with Africa Rice in Senegal was not implemented. It has been re-structured and re-formatted to engage with national public and private sector actors to analyze and assess the added value of adopting CSA practices and the cost-benefits of implementing CSA options for the various agricultural sectors by using value chain approach, as well as to document lessons learnt for the scaling up of CSA options within agricultural sectors and approaches for smart investment planning

Gender component:

Gender and social differentiation issues will be considered in the new design of the activity.

Deliverables:

- A report listing possible adaptation options (including farming practices, sub-national and national level policy interventions, or new technologies) as well as short narratives for each of the intervention.; - A report synthesizing results on the cost/benefit analysis of options (quantitative and qualitative approaches)

Partners:

Locations:

West Africa (WA)

Activity 285-2013 (Milestone 2.3.1 2013.)

Title: Capacity strengthening workshop, evaluation of current methodologies, support to national systems for organising teams, development of databases for operational forecasting and initiation of a DSS for forecasting; scaling up climate information & services.

Status: Complete. The approach used in Kaffrine was further tested and implemented in Burkina Faso, Ghana, Mali, Niger and three new regions in Senegal. Several workshops organized in the 5 CCAFS sites to capacitate stakeholders (NARS, NGOs, communication intermediaries, rural radio, farmers organizations, villages leaders, etc.) on interpreting and communicating seasonal forecast. Evaluation workshops were held to assess the effectiveness of the seasonal forecast provided in management decision-making. National met services trained on basic data quality control procedures and on the calibration of daily satellite rainfall estimation algorithms.

Gender component:

Deliverables:

- Activity report; - Number of farmers (including women) trained

Partners:

ANACIM; AGRHYMET; INERA; Agence Nationale de la Météorologie du Mali; CSIR; INRAN; IRI

Locations:

Activity 287-2013 (Milestone 4.1.2 2013.)

Title: PAR testing of sustainable agricultural intensification strategies with communities in the climate smart villages; knowledge learning and exchange among national stakeholders to identify gaps and define research needs.

Status: Partially complete. This is the 2nd year of the activity in Burkina Faso, Ghana and Mali and 1st year in Niger and Senegal. Participatory testing of CSA practices and technologies and capacity strengthening activities are on-going at the sites. An evaluation is underway to draw lessons from the 2 years of implementation in order to guide future investments in 2014.

Gender component:

Gender disaggregated data was collected (access to resources, information, knowledge, technologies; scaling up of options with respect to their potential benefit or adversely affect different social groups, including women) to allow prioritization of adaptation investments that considers potential gender-differentiated impact. At least 15% of women have been involved so far in the different experiments at the PAR sites in the 5 CCAFS pilot countries.

Deliverables:

- Activity report; - Publication

Partners:

ICRAF; ICRISAT; INERA; IER; SARI; INRAN; ISRA; IUCN; Agrhymet Regional Centre

Locations:

West Africa (WA)

Activity 288-2013 (Milestone 3.3.2 2013.)

Title: Analysis of issues, knowledge gaps and research on GHG quantification through networking among regional working group experts and tests on the quantification of GHG for various smallholder agricultural systems and landscapes (Conservation agriculture, crop rotation, agroforestry systems...).

Status: Incomplete. A network of experts on GHG quantification has been established. Further work is underway in the development and validation of GHG methods at farm and landscape levels.

Gender component:**Deliverables:**

- Workshop report; - Publication on the state-of-art on GHG quantification in West Africa

Partners:

ICRAF; ICRISAT; UCAD; UP; University of Ghana; SARI; IER; INERA

Locations:

West Africa (WA)

Activity 290-2013 (Milestone 3.3.2 2013.)

Title: Sustainable agricultural intensification strategies with communities in the climate smart villages

Status: Incomplete. Activity is on-going at the CCAFS PAR sites. An evaluation is underway to draw lessons of the first two years of implementation in order to re-adjust the activities to achieve better impact.

Gender component:

Gender disaggregated is being data collected (access to resources, information, knowledge, technologies; scaling up of options with respect to their potential benefit or adversely affect different social groups, including women,; prioritization of adaptation investments that considers potential gender-differentiated impact; testing and evaluation of options with representative socially and gender-differentiated groups of users using participatory approaches; analysis of enabling and constraining gender-related factors to adaptation, etc.

Deliverables:

- Activity report

Partners:

ICRAF; IUCN; INERA; SARI; IER; ISRA; INRAN

Locations:

West Africa (WA), West Africa (WA)

Activity 289-2013 (Milestone 4.1.4 2013 (1).)

Title: Pursue regional engagement and communication activities to build strategic partnership with multiple stakeholders that include civil society partners, FOs, government agencies.

Status: Partially complete. Several engagement and communication activities have been conducted in 2013: a) strengthening on-going partnerships with both national (e.g. universities, NARS, national sectoral institutions such as CONEDD, CNEDD, AEDD, MoA, national met services) and regional (e.g. AGRHYMET, INSAH, IUCN, ECOWAS, CORAF) organizations, b) training and capacity strengthening of partners on tools, methods, and approaches to better develop appropriate and cost-effective adaptation and mitigation strategies, c) participated in various workshops and conferences at national, regional and international levels to build strategic partnership and share and communicate CCAFS science. This activity will be pursued in 2014.

Gender component:

Deliverables:

- 5 national platforms established in the CCAFS sites; - Activity report; - workshop report

Partners:

CNEDD; AEDD; CONEDD; COMNAC; CSIR

Locations:

Activity 261-2013 (Milestone 4.2.1 2013 (3).)

Title: Collating and documenting regional databases for soils, historical climate, future climate scenarios, agricultural systems, and natural resources to analyze likely effects of specific adaptation and mitigation options of households.

Status: Partially complete. Detailed household data collected in each of the 5 CCAFS sites has gone through a cleaning process. A draft outline of a regional paper addressing the links between food security and climate smart agriculture practices has been developed and preliminary analyses done and shared with national partners (NARS and collaborating institutions). Detailed analysis of regional and national dataset will be conducted in 2014 and publish in scientific journals. Feedback is planned in 2014 to communities at CCAFS sites.

Gender component:

Gender issues are addressed. Gender disaggregated data has been collected that will allow to assess the impacts of climate change and variability and how these impacts differ depending on gender and household composition.

Deliverables:

- Working papers, journal articles, and regular reports on progress; - Climate change scenario reports for each focus region; - Briefing papers for each scenario report and journal article

Partners:

ILRI; INERA; IER; CSIR; INRAN; ISRA; CIFOR; ICRAF

Locations:

West Africa (WA), West Africa (WA), West Africa (WA), West Africa (WA), West Africa (WA)

Activity 535-2013 (Milestone 4.2.2 2013.)

Title: Use of the toolkit to influence and monitor behavioral changes of individuals, women and men groups or communities, organizations and institutions at subnational levels.

Status: Partially complete. Training activities have been conducted and M&E tools tested at several locations of CCAFS sites. The activity will be pursued in 2014. A working paper is under preparation.

Gender component:

Deliverables:

- Activity report

Partners:

IUCN; INERA; INRAN; SARI; IER; ISRA; ICRAF

Locations:

West Africa (WA)

2. Succinct summary of activities and deliverables by Output level

Output: 1.1.2

Summary:

Following the successful exchange visit in 2012 between farmers from the climate-smart village of Doggoh in Ghana and communities from the analogue sites in Southern Burkina Faso (Sissili and Nahouri Provinces), we organized similar exchange visits in the five CCAFS pilot countries in West Africa, using the farm of the future approach (analogue tool to identify climate analogue sites followed by farmers exchange visits to learn and share knowledge on incremental as well as progressive climate change adaptation and mitigation strategies. 35 researchers and developers from Senegal, Niger, Mali, Ghana and Burkina Faso have been trained during a regional workshop to use the analogue tool and the farms of the future approach. Five exchange visits involving about 100 farmers and agricultural extension agents from 13 villages of CCAFS West Africa site blocks were organized to share and communicate socially inclusive adaptation and mitigation strategies at community level. This activity was done in collaboration with the CORAF-funded project on Enhancing the resilience and adaptive capacity to climate change through integrated land, water, and nutrient management in semi-arid West Africa – “ENRACCA-WA and involved sites from the West African Agriculture Productivity Program (WAAPP). Climate smart agriculture practices visited and exchanged upon on included soil and water conservation techniques (zai, half moon, stones lines), assisted natural regeneration of trees, composting and corralling, crop diversification, vegetable production, seeds production, fish ponds. Furthermore, farmers of CCAFS sites were briefed on cereal banks, community-based organizations, adult literacy and skills training. Further to the exchange visits, an analysis of the potential barriers to adoption and uptake of and diversification pathways of climate smart agriculture practices was undertaken during the exchange visit. ICRAF: In WCA, 2 methodological papers for participatory analysis of vulnerability and adaptation to climate change were produced (in French and in English). In Burkina Faso, Mali and Niger, provenance/progeny tests of five tree species established on farms were undertaken. Capacity building was done for 20 partners from NARs, forestry departments and development projects and 250 men and women farmers who were trained in participatory tree domestication.

Output: 1.3.2

Summary:

The four scenarios developed in 2012 for West Africa have been revisited this year following a request by stakeholders to extend them to 2050 instead of 2030. This was done during a regional workshop, which gathered representatives of a wide range of stakeholders (research, policy, government institutions, NGOs). Indicators used in the quantification and modeling in 2012 were revisited to account for 2050 horizon. Following the process, a concept note was developed and shared with ECOWAS Director for Agriculture, the aim being to organize a regional policy workshop in 2014 with ECOWAS and to use the scenarios to guide ECOWAS investments in climate smart agriculture. IFPRI: Activity 580-2013 on “Climate change adaptation, mitigation and building economic resilience in West Africa and South Asia” contributed to this output by initiating a systematic

study of the policy process driving the formulation of the national climate adaptation plan of Burkina Faso, and how it will support the agricultural sector. The initial report of the consultant has been produced.

Output: 2.3.1

Summary:

With the support of CCAFS, AGRHYMET Regional Center and ANACIM in Senegal conducted activities aimed at improving the quality of climate information and tailoring it to the needs of West African farmers. This was done through training climatologists of national meteorological services from 16 ECOWAS member states on climate data quality control and on the calibration of daily satellite rainfall estimation algorithms. About 80 experts and practitioners (technical staff from NARES, NGOs, agricultural extension officers) were better skilled on quality data control and to interpret the seasonal forecast. This was co-funded by CCAFS, USAID and DANIDA, with the technical backstopping of experts from the International Research Institute on Climate and Society (IRI), USA. The cleaned climate data were used to derive the downscaled seasonal rainfall forecasts, which were further communicated, discussed and evaluated with the farmers and other agricultural stakeholders from the CCAFS climate-smart villages in Burkina Faso, Ghana, Mali, Niger and Senegal. The different workshops allowed enhance the capacities of national meteorological services in providing quality climate information to users, and share with farmers the interest of climate information for decision-making. About 353 experts and practitioners (technical staff from NARES, NGOs staff, national met services, agricultural extension officers, representatives of farmers organizations, rural radios, etc.) from Burkina Faso, Ghana, Niger, Mali and Senegal (with three new regions – Thies, Diourbel and Louga - in Senegal reached by the approach) were capacitated in interpreting and communicating downscaled seasonal forecast information. About 240 farmers were involved in the evaluation of the seasonal forecast in Burkina Faso, Ghana, Mali and Niger. Towards scaling up climate services for men and women farmers in three regions of Senegal This activity led by ANACIM, aimed to explore opportunities for the up scaling of the seasonal forecast communication approach developed in Kaffrine to reach wider communities in three regions in Senegal: Thies, Diourbel and Louga. This was done through partnering with various partners such the union of rural radio in Senegal (URAC), the millennium development goal, the NGOs federation (FONGS) and ISRA. The work started with the usual training on the seasonal forecast in Kaffrine to 63 representatives of farmers’ organization, 13 extension services, and rural radios. A special workshop was organized in Thies to “training rural radio journalists for better communication of climate information”. Leaders and managers of 15 rural radios within the targeted regions (Kaffrine, Thies, Diourbel and Louga) attended the training. The aim was to enhance the capacity of rural radio journalists to better understand the climate information, ensure the climate bulletin content shared by ANACIM is well understood and communicated to end-users and finally establish a network of communicators to disseminate climate information in real time. A further activity consisted in partnering with the MDGs project in Louga region where ANACIM organized a training workshop on “using probabilistic seasonal forecast as decision tool for farmers in Léona, Louga region” to scale-up the Kaffrine experience in the region. 3 MDGs village coordinators, 11 technicians/facilitators, 7 farmers’ cooperatives, 92 pilots farmers amongst whom 17 women, and women farmers unions, technicians from agriculture, extension, soil, local development, insurance and bank, and rural radio (02) plus other local media, attended this meeting. Similarly in Diourbel, ANACIM partnered with the Federation of Non-

Governmental Organizations in Senegal (FONGS) to scale up the CCAFS seasonal forecast communication approach. A training was organized to benefit 11 local extension services, 50 representatives of farmers' organisations, 3 radio rural journalists and 3 experts on traditional knowledge. Also, as a result of the growing interest to the success of Kaffrine experience, ANACIM has contracted with the EU funded project "High-End cLimate Impacts and eXtremes (HELIX) to implement (upscale) the same activities in other places (Niakhar) in a way to assist farmers to deal with extremes events in the future.

Output: 3.3.2

Summary:

Six projects to develop GHG quantification methods and protocols under different farming systems in West Africa were awarded grant by CCAFS in 2012. Preliminary results of Ghana field experiments are being analysed. The study reported on the CO₂ emissions from two locations (i) heavy clayey soils and (ii) light textured site, both in the southern zone of Ghana and for the following land-use systems: animal kraals, woodlots, original forests, vegetable gardens, cultivated field crop plots and rice paddy fields. A working paper on these results is in preparation. One MSc student from Ghana received training on nitrous oxide training course at the Technical University of Denmark. Results from other projects are being collected and analyzed.

ICRAF: In WCA, the BIODEV project and its Work Package on carbon measurements managed to get Airborne LiDAR image acquisitions and image processing for above-ground bio-carbon stocks prediction in Taita Hills, Kenya + Land health data collection from one sentinel site (240 plots) and soil data processing in Taita Hills + A manual for biomass measurement

IITA: conducted a project on assessment of cocoa and coffee based agricultural systems for carbon sequestration potential to mitigate risk of climate change and enhance food security. A major joint project (1.2M Euro - 3 yrs) with CIAT and partners was launched in 2013. This included launching workshops with NARS partners and the recruitment of 5 PhD students with university partners in Germany (Gottingen and Hannover), Netherlands (WUR), Switzerland (ETH). In addition, a project entitled Cocoa-Eco to develop climate smart cocoa systems in Ghana was funded by SNV in partnership with Ghana's largest cocoa cooperative (Kuapa Kokoo). The projects already delivered update coffee and cocoa suitability maps (with CIAT team) and initiated characterisation work of adaptation and mitigation potential of various coffee and cocoa systems. Another component is the development of the product category rules (PCR) for quantifying the carbon footprint of coffee production. This was led by the SAI platform as part of their "New Green Coffee Carbon Footprint Product Category Rule (CFP-PCR) launched for global coffee industry". The CCAFS-IITA contribution focused on defining the boundaries of the systems (e.g. intercrop vs mono crop coffee), providing SAI platform staff an opportunity to visit the coffee smallholder systems, and direct participation in a SAI platform meetings in Brussels with the industry. They adopted the Cool Farm Tool as their primary tool to quantify carbon footprints. CCAFS-IITA staff have engaged with the developers of the tool to further explore the 'wet processing' component of the carbon footprint.

Output: 4.1.2

Summary:

Participatory action research activities as well as capacity building activities have been pursued at the climate-smart villages in Burkina Faso, Ghana, Mali, Niger and Senegal. In 2013 a regional workshop attended by representative of NARS, NGOs, AGHRYMET, national met services, IUCN, extension services and government departments was organized to share the 2012 results and draw lessons to plan activities for 2013. In Burkina Faso, participatory planning workshops attended by 290 men and 201 women were organized in 6 villages within the CCAFS block to identify activities that need to be pursued. The main activities included land and vegetation rehabilitation, crop diversification, integrated soil fertility management, test of early-maturing varieties of crops, and the capacity building tests. For vegetation rehabilitation and wood energy production, 158 male producers and 274 female producers planted six thousand two hundred seedlings in 2013. Moringa oleifera seedlings were specifically destined to women and planted within or around the compounds. The survival rate of these planted seedlings was higher than 85%. Farmer's field schools approach was used for collective learning on CSA technologies (e.g. water harvesting (zaï), natural assisted regeneration of trees and manure application. Drought tolerant or short cycle crop varieties (KVX396-4-5-2D and KVX61.1 for cowpea and SR42 for sesame) were introduced. More than 100 households engaged in assisted natural regeneration of trees associated with anti-erosive sites (Zaï, half-moons and bunds. A study tour was organized for the benefit of some 30 actors including 20 producers (with 10 women) from 6 villages of the CCAFS area. About 64 participants including 30 farmers of whom 11 were women were exposed to the seasonal weather forecast information provided and the same information was later also broadcasted by local radios. A partnership with the Ecosystems Protecting Infrastructure and Communities (EPIC) project of IUCN helped to extend/scale-up the climate-smart village concept to 4 other villages in 2013. The collaboration with WFP will help support the producers for collective work in a food or cash for work approach. A total 19 participants including 5 women attended a workshop on monitoring behavior changes related to the PAR activities. 4 students (1 MSc and 3 undergraduate) conducted their research work on CCAFS related activities. In Ghana, one-day workshop attended by 103 farmers including 33 women was held in the village of Doggoh. Following the workshop, a total of 1979 tree seedlings (mango, tamarind, cashew, mahogany and aki-apple). 253 households participated in anti-bush fire campaigns, dry season gardening, and training of farmers in composting and promotion of its use. 27 on-farm experiments comprising conservation agriculture, crop diversification, maize-cowpea rotations (11 participants), soil and water management/conservation practices (14 participants), integrated nutrient management (14 participants), growing drought tolerant crop varieties (4 participants), intercropping cowpea with Jatropha (4 participants), improved crop cultivation technique and agroforestry were set. Agronomic and economic data have been collected and statistical analysis is on-going. A farmers' field day attended by Bompari and neighboring village's farmers was organized in the village of Doggoh. Five local committees on gender, agroforestry, integrated soil fertility management; bushfires and overall management were formed. Additionally, community members were trained on integrated soil fertilizer management techniques (146 farmers on compost), soil and water conservation management (234 farmers), farm selection/record keeping and hazard of felling trees (10 women groups on using mud stoves to reduce wood consumption), reducing post-harvest losses (128 farmers including 115 women) and women on soya bean processing (105 women). In Mali, two workshops at district and commune levels were organized to validate the work plan of activities that can help address both adaptation and mitigation of climate change. Farmer's field experiments were set to test best-

bet CSA technologies and practices in Tongo and Dougakoungou in the rural commune of Cinzana. These included testing of improved cereals varieties, micro dosing and soil and water conservation contour ridges. Intercropping of *Jatropha curcas* with varying planting spacing was also tested. Farmer's exchange visits were organized with 60 farmers. Training on soil and water conservation techniques was conducted with 50 participants composed of farmers, NGOs and extension agents as well municipality staff. Climate change adaptation and mitigation strategies based on local conventions were broadcasted 4 times by local and national radios. In Niger, a district level work plan validation workshop was organized. A series of field trials on climate smart agriculture technologies and practices using participatory action research approach were implemented in the village of Kampa Zarma. Field trials included testing drought tolerant varieties, crop diversification combined with soil and water conservation techniques (40 farmers), strengthening the capacity of 50 farmers to implement assisted natural tree regeneration. Three MSc students enrolled at Abdou Moumouni University in Niger completed their research work on CCAFS activities. A partnership is being developed with Care International on organizing farmers and developing saving schemes. A farmer field day was organized to share the results with farmers from neighboring villages. More than 150 people participated in this event. A total of 90 pilot farmers have been trained on how to use the climate information for better planning their cropping activities. This training was found to be very relevant by 97% of the population of Kampa-zarma. In Senegal, two workshops were organized with one at national level and the second at village level. A total of 65 persons (25 women) attended the national workshop and 140 (65 women) were present in the village workshop for both Ngouye and Toune Mosquée villages. For agronomic field trials, a total of 16 producers were chosen including 5 women at Ngouye whereas 12 producers including 2 women were selected at Toune Mosquée. A baseline situation was conducted by soil samples in 28 farms on which natural assisted regeneration will be promoted. A dissemination of climate information workshop was organized at Community level by ANACIM. From Ngouye, 50 participants including 15 women and 1 representing the media attended while in Toune Mosquée village, the figures were 52 participants including 25 women and 2 press organs

Output: 4.1.4

Summary:

Following the establishment of national science-policy platforms at each of the CCAFS pilot countries and the roadmap for 2013, various initiatives were implemented by each platform to identify priority needs, and to sensitize, lobby, capacitate, and raise awareness and mobilize stakeholders to effectively engage and catalyze practical changes needed to mainstream adaptation and mitigation strategies into national agriculture development plans. More specifically: In Senegal, the platform organized several meetings among its members to discuss on (1) how to implement activities planned within the 2013 roadmap (2) the use and dissemination of the seasonal forecast information in Senegal (3) institutional mechanisms for knowledge exchange among key actors involved in the development of national climate change adaptation and mitigation strategies (5) capitalize successful experiences for climate change adaptation. The platform also organized a scientific panel discussion during the world food day in Senegal with the topic "Sustainable food systems for achieving food security and nutrition". The platform received a congratulation letter from the Minister of Agriculture in Senegal for their effective contribution. In Niger, the platform achieved the following a) mapping of national level institutions and organizations involved in the development of national climate change adaptation and mitigation strategies, b)

analysis of institutional mechanisms for science-policy dialogues on climate change related issues and c) inventory of projects and success stories on the adaptation of agriculture to climate change in Niger. In Mali, the platform has been made legal through an administrative decision that defines its operational procedures (Décision N° 1 2-008/ MEA-AEDD du 20 novembre 2012). The platform organized 3 interaction meetings among members to discuss and share information on various initiatives such as a) an inventory of projects and success stories on the adaptation of agriculture to climate change in Mali, and b) an analysis of the challenges, constraints and opportunities for an operational dialogue between researchers and policy makers for the adaptation of the agriculture and food security sectors to climate change. In Burkina Faso, the platform worked around three major activities : 1) legalize the platform institutional setting within the existing national institutional frames and makes the platform operational and visible; 2) Produce an inventory of climate change adaptation best practices for agriculture and food security; 3) Awareness raising of policy makers and lobby for the mainstreaming of climate change into national policies and strategies. In Ghana, the Platform secretariat has been established and hosted by CSIR-ARI. It was officially launched on the 30th July 2013 at the Resource and information Centre, Ministry of Food and Agriculture, Accra-Ghana with over 50 actors. Following the official launch, the platform organized its Maiden workshop for key actors to share climate change and food security issues in Ghana; over 50 stakeholders attended this. Further, a one-day field visit was organized on the 8th November 2013 for the Core Team to visit an aquaponic farm in the Central Region of Ghana for purposes of identifying climate smart activities worthy of emulation or adoption by stakeholders. Another one-day workshop was organized on knowledge and information sharing (3rd December 2013). The Platform attracted the flagbearer of the nation's third largest political party. The platform also organized an awareness creation seminar for high-level policy makers and politicians on "the impact of climate change and long-term climate risk solutions to agriculture and food security in Ghana" where 2 government ministers, 7 members of parliament and 19 Chief Directors and Directors took part. During this meeting, the Chair of the Parliamentary Select Committee on the Environment, on behalf of all participating parliamentarians, gave a commitment to support the effective mainstreaming of climate change into agricultural investments initiatives in Ghana, including support for research on climate-smart agriculture to benefit the most vulnerable populations. Platforms delegates from Mali, Ghana and Burkina Faso attended a workshop organized by CCAFS in Warsaw during COP 18 and shared respective experiences and lessons learnt on National Adaptation Plans (NAPs) and agriculture. ICRAF: Only the BIODEV project (Work Package on governance and market institutions was working on this outputs. They did a training of the project staff and national partners both in Burkina Faso and Sierra on tools to be used for the scoping, PRA and interviews.

Output: 4.2.1

Summary:

Within the framework of the ICRISAT-ILRI agreement on IMPACTlite, a database of 1000 (200 households per CCAFS sites) households' livelihood characteristics (e.g. cropping activities, types of crops, crops production, sales, consumption, assets, livestock activities, etc.) collected at CCAFS sites in 2012 has gone through a process of cleaning in 2013. CCAFS WA representatives attended 2 workshops organized by ILRI to identify and formulate research hypotheses relevant to the context of the region and initiated preliminary analyses of the

data available. Initial regional analyses have been undertaken in 2013. A regional workshop in November 2013 gathered together 21 participants (from CCAFS, ILRI partners and national participatory action research teams) to share and validate initial results of the regional data analysis and analyze the likelihood implications (enabling environment re policies, institutions, capacity, market access, access to information, knowledge, etc.) for adopting and uptake of climate smart agriculture practices. A draft regional paper has been outlined and is expected to be submitted for publication in 2014, as well as country working papers on the analysis of IMPACTlite site data. ICRAF: In WCA, the BIODEV project consolidated the workplan of the project for a smooth implementation and monitoring for integrated sustainable development, including biocarbon and small-scale sustainable energy production. An outcomes mapping of partners of the project in the both Burkina Faso and Sierra Leone was also produced. A template for Country profile related to National policies and capacity strengthening was also finalized. ICRISAT: 436-2013: The Tradeoff Analysis model for Multi-Dimensional impact assessment (TOA-MD) has been developed and adapted as an integrated assessment framework for regional analysis of climate change and adaptation impacts. The methodology is now well established and several regional integrated assessments are ongoing in SSA and SA. Several stakeholder and scientific workshops have been held in which participants were introduced to and trained in TOA-MD. Current developments are linking TOA-MD with CCAFS scenario work in the form of Representative Agricultural Pathways (RAPs). TOA-MD will be further used for regional impact assessment in CCAFS sites and study areas from related initiatives like AgMIP. Within AgMIP, a link with the global modeling studies will be made. (also relevant for output 4.2.1.). 15-2013: The potential of the promising technologies for sorghum and groundnuts were evaluated using virtual crop model in DDSAT. The potential of the drought and heat tolerant sorghum and groundnuts promising technologies were assessed under current and future climates. The results were published in peer reviewed journals

Output: 4.2.2

Summary:

This activity led by IUCN, aimed to understand and capture how individual outcomes contribute to broader system-wide changes. More specifically, this activity enabled scientists, extensionists, grant makers, and managers to identify, formulate, verify, and make sense of behavioral changes of their interventions on climate change, agriculture and food security. Throughout the year 2013, the following results have been achieved:-

- 11 researchers skilled (training and on-ground testing) to use participatory tools to improve climate change adaptation planning-
- 49 stakeholders (from Niger, Mali, Burkina Faso and Ghana) trained to use one of the following two participatory M&E tools (Most Significant Change and the Outcome Journal)-
- 4 M&E plans developed and/or validated for the implementation of the outcomes harvesting techniques.-
- In Niger, Burkina Faso, Ghana and Senegal, PAR team tested the MSC tool and the results highlighted the effectiveness of the technique in helping communities' members to tell stories of changes since their involvement in the PAR project. Researchers and their partners learned how M&E on the status of resources could be improved with information related to community and their members' changes in behavior, knowledge, relationship and activities.-
- A total of 119 adaptation outcomes harvesting sessions have been conducted in Burkina Faso, Niger, Ghana and Senegal.

3. Publications

Publication #1

Type: Journal papers

CCAFS Themes: Theme 1

Citation: Vom Brocke K., Trouche J., Weltzien E., Kondombo-Barro C.P., Sidibé A., Zougmore R., Gozé E., 2013. Helping farmers adapt to climate and cropping system change through increased access to sorghum genetic resources adapted to prevalent sorghum cropping systems in Burkina Faso. *Expl Agric.*: page 1 of 22

Publication #2

Type: Journal papers

CCAFS Themes: Theme 1, Theme 2, Theme 4.1, Theme 4.3

Citation: Bruce Campbell, James Kinyangi, Robert Zougmore, Pramod Aggarwal, et al., 2013. Agriculture and Drought. Perspectives: Legislating change, *Nature outlook* 501, S12–S14 (26 September 2013).

Publication #3

Type: Journal papers

CCAFS Themes: Theme 1, Theme 4.1, Theme 4.3

Citation: H. Neufeldt, M. Jahn, B.M. Campbell, J.R. Beddington, F. DeClerck, A. De Pinto, J. Gullledge, J. Hellin, M. Herrero, A. Jarvis, D. LeZaks, H. Meinke, T. Rosenstock, M. Scholes, R. Scholes, S. Vermeulen, E. Wollenberg, R. Zougmore, 2013. Beyond climate-smart agriculture: toward safe operating spaces for global food systems. *Agriculture & Food Security* 2013, 2:12.

Publication #4

Type: Journal papers

CCAFS Themes: Theme 4.2

Citation: O. Dewitte, A. Jones, O. Spaargaren, H. Breuning-Madsen, M. Brossard, A. Dampha, J. Deckers, T. Gallali, S. Hallett, R. Jones, M. Kilasara, P. Le Roux, E. Michéli, L. Montanarella, L. Thiombiano, E. Van Ranst, M. Yemefack, R. Zougmore, 2013. Harmonisation of the soil map of Africa at the continental scale. *Geoderma* 211–212 (2013) 138–153.

Publication #5

Type: Books

CCAFS Themes: Theme 4.1, Theme 4.2

Citation: Jones, A., Breuning-Madsen, H., Brossard, M., Dampha, A., Deckers, J., Dewitte, O., Gallali, T., Hallett, S., Jones, R., Kilasara, M., Le Roux, P., Micheli, E., Montanarella, L., Spaargaren, O., Thiombiano, L., Van Ranst, E., Yemefack, M., Zougmore R., (eds.), 2013, Soil Atlas of Africa. European Commission, Publications Office of the European Union, Luxembourg. 176 pp.

Publication #6

Type: Books

CCAFS Themes: Theme 1, Theme 2, Theme 3, Theme 4.1, Theme 4.2, Theme 4.3

Citation: Jalloh A., Nelson G.C., Thomas T.S., Zougmore R., Roy-Macauley H., (Eds.), 2013. West African agriculture and climate change: a comprehensive analysis. IFPRI books and research monographs, ISBN 978-0-89629-204-8; , 408p.

Publication #7

Type: Book chapters

CCAFS Themes: Theme 1, Theme 2, Theme 3, Theme 4.1, Theme 4.2, Theme 4.3

Citation: Nutsukpo D.K., Jalloh A., Zougmore R., Nelson G.C., Thomas T.S., 2013. Ghana, pp: 141-172, In: Jalloh A., Nelson G.C., Thomas T.S., Zougmore R., Roy-Macauley H., (Eds.). West African agriculture and climate change: a comprehensive analysis. IFPRI books and research monographs, ISBN 978-0-89629-204-8; 408p.

Publication #8

Type: Book chapters

CCAFS Themes: Theme 1, Theme 2, Theme 3, Theme 4.1, Theme 4.2, Theme 4.3

Citation: Somé L., Jalloh A., Zougmore R., Nelson G.C., Thomas T.S., 2013. Burkina Faso, pp: 79-109, In: Jalloh A., Nelson G.C., Thomas T.S., Zougmore R., Roy-Macauley H., (Eds.). West African agriculture and climate change: a comprehensive analysis. IFPRI books and research monographs, ISBN 978-0-89629-204-8, 408p

Publication #9

Type: Book chapters

CCAFS Themes: Theme 1, Theme 2, Theme 3, Theme 4.1, Theme 4.2, Theme 4.3

Citation: Yayé H., Danguioua A., Jalloh A., Zougmore R., Nelson G.C., Thomas T.S., 2013. Niger, pp: 233-258, In: Jalloh A., Nelson G.C., Thomas T.S., Zougmore R., Roy-Macauley H., (Eds.). West African agriculture and climate change: a comprehensive analysis. IFPRI books and research monographs, ISBN 978-0-89629-204-8, 408p.

Publication #10

Type: Book chapters

CCAFS Themes: Theme 1, Theme 2, Theme 3, Theme 4.1, Theme 4.2, Theme 4.3

Citation: Jalloh A., Faye M.D., Roy-Macauley H., Sérémé P., Zougmore R., Thomas T.S., Nelson G.C., 2013. An overview of West African agriculture and climate change. pp: 1-36, In: Jalloh A., Nelson G.C., Thomas T.S., Zougmore R., Roy-Macauley H., (Eds.). West African agriculture and climate change: a comprehensive analysis. IFPRI books and research monographs, ISBN 978-0-89629-204-8; 408p

Publication #11

Type: Working papers

CCAFS Themes: Theme 1, Theme 3, Theme 4.1

Citation: Cooper, P. J.M., S. Capiello, S. J. Vermeulen, B. M. Campbell, R. Zougmore and J. Kinyangi. 2013. Large-scale implementation of adaptation and mitigation actions in agriculture. CCAFS Working Paper no. 50. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org

Publication #12

Type: Other

CCAFS Themes: Theme 2, Theme 4.1

Citation: Ndiaye O., Moussa A., Seck M., Zougmore R., 2013. Communicating seasonal forecasts to farmers in Kaffrine, Senegal for better agricultural management. Case studies: local solutions-knowledge, pp: 63-66. Dublin international conference on Hunger • Nutrition • Climate Justice, 15-16 Apr. 2013 | A New Dialogue: Putting People at the Heart of Global Development.

Publication #13

Type: Other

CCAFS Themes: Theme 1, Theme 4.1

Citation: Vermeulen Sonja, Abdoulaye Moussa, Osana Bonilla-Findji, Gopal Datt Bhatta and Maren Radeny 2013. Knowledge: its role in hunger, nutrition and climate justice. Paper presented at the Hunger, Nutrition and Climate Justice International Conference. Dublin 15-16 April 2013.

Publication #14

Type: Other

CCAFS Themes: Theme 4.2

Citation: Sijmons K, Kiplimo J, Forch W, Thornton PK, Moussa AS, and Zougmore R. 2013. CCAFS site atlas - Segou/Cinzana. CCAFS site atlas series.

Publication #15

Type: Other

CCAFS Themes: Theme 4.2

Citation: Sijmons K, Kiplimo J, Forch W, Thornton PK, Moussa AS, and Zougmore R. 2013. CCAFS site atlas - Lawra-Jirapa. CCAFS site atlas series.

Publication #16

Type: Other

CCAFS Themes: Theme 4.2

Citation: Sijmons K, Kiplimo J, Forch W, Thornton PK, Moussa AS, and Zougmore R. 2013. CCAFS site atlas - Kollo/Fakara. CCAFS site atlas series.

Publication #17

Type: Other

CCAFS Themes: Theme 4.2

Citation: Sijmons K, Kiplimo J, Forch W, Thornton PK, Moussa AS, and Zougmore R. 2013. CCAFS site atlas - Yatenga/Tougou. CCAFS site atlas series.

Publication #18

Type: Other

CCAFS Themes: Theme 4.2

Citation: Sijmons K, Kiplimo J, Forch W, Thornton PK, Moussa AS, and Zougmore R. 2013. CCAFS site atlas - Kaffrine. CCAFS site atlas series.

4. Communications

Media campaigns:

- http://www.jeuneafrique.com/Article_ARTJAWEB20140115122446_agriculture-ecologie-tribune-changement-climatiquechangement-climatique-l-afrique-de-l-ouest-s-adapte-mais-les-negociations-stagnent.html
- <http://www.theafricareport.com/North-Africa/as-climate-change-bites-the-dust-west-africa-seeks-solutions.html>
- <http://www.egfar.org/fr/news/imported/regional-workshop-mainstream-climate-change-west-africa-agricultural-productivity-prog>
- <http://economie.jeuneafrique.com/tribune/402-tribune-agroindustrie/18480-pour-que-lafrique-puisse-nourrir-lafrique.html>
- <http://sciences2d.org/2013/09/09/robert-zougmore-coordonnateur-regional-du-programme-ccafs-afrique-de-louest-se-limiter-aux-grands-barrages-pour-stocker-leau-nest-plus-un-choix-judicieux/>
- <http://www.bbc.co.uk/worldservice/audioconsole/?stream=focusonafrika1700>
- <http://www.theafricareport.com/North-Africa/as-climate-change-bites-the-dust-west-africa-seeks-solutions.html>
- <http://www.kasaghana.org/188/Newsroom.html?item=628>
- http://www.seneweb.com/news/Agriculture/changement-climatique-agriculture-et-securite-alimentaire-les-acteurs-connus-et-les-experiences-capitalisees_n_113403.html
- <http://www.ghananewsagency.org/science/minister-says-climate-change-is-major-cause-of-poverty-70132>
- <http://uracsenegal.org/wf-menu-profiles/vie-de-l-urac/formation>

Blogs:

- http://ccafs.cgiar.org/blog/climate-change-heats-west-africa-seeks-solutions#.UukiD_afVq8
- <http://ccafs.cgiar.org/blog/%E2%80%9Cfarms-future-arrives-west-africa#.UtpBAGRdXt8>
- <http://ccafs.cgiar.org/blog/what-needed-respond-changing-west-african-climate#.UukizfafVq8>
- <http://ccafs.cgiar.org/blog/top-secac-toolbox-analyze-and-perform-monitoring-and-evaluation#.UtpAXmRdXt8>
- <http://ccafs.cgiar.org/blog/battling-food-insecurity-one-shared-plate#.Uvy9ufafVq8>
- http://ccafs.cgiar.org/blog/climate-smart-agriculture-integrated-decision-making-ghana#.Uv9qN_afVq8
- <http://ccafs.cgiar.org/blog/battling-food-insecurity-one-shared-plate#.Uv9qmvaVq8>

Websites:

- http://www.careclimatechange.org/files/West_Africa_CBA_Learning_Conference_Report_Final.pdf
- http://ccafs.cgiar.org/es/events/11/dec/2012/west-africa-farmers-regional-days#.UvuTJ_afVq8
- <http://www.flickr.com/photos/cgiarclimate/10883486936/http://mofa.gov.gh/site/?p=13298>
- <http://www.landscapes.org/climate-talks-fail-farmers-west-africa-turns-towards-trees-land->

[rehabilitation-adaptation/#.Uv9GYPafVq8](#)

Social media campaigns:

None

Newsletters:

A CCAFS WA newsletter is under development

Events:

West Africa Learning Event on Community Based Adaptation - coorganized by CARE International Adaptation Learning Program (ALP), CCAFS WA and ENDA Energie-Environnement-Development (ENDA Energie) in Cotonou (Benin), from September 3-6th 2013

Regional training workshop on “Using the climate analogue tool and the Farms of the Future approach to enhancing adaptive capacity to climate change effects in West Africa” by CCAFS in partnership with INSAH, Niamey, Niger, October 3-5th 2013

CCAFS side event at the 6e FARA AASW and General Assembly (Accra, Ghana)Regional scenario quantification workshop (Ouagadougou, Burkina Faso)

Regional IMPACTlite writeshop (Ouagadougou, Burkina Faso)

South-South farmers exchange visit in Kaffrine (co-organized with ANACIM and CCAFS Theme 1)

Regional Workshop to Mainstream Climate Change in the West Africa Agricultural Productivity Programme

Videos and other multimedia:

None

Other communications and outreach:

Coverage of several national and regional workshops.

5. Case studies

Case Study #1

Title: Seasonal climate forecast is now reaching the Millennium Development Goals villages in Senegal

Author: Ousmane Ndiaye, Robert Zougmore, Abdoulaye S. Moussa

Type: Successful communications, Innovative non-research partnerships, Capacity enhancement

Project description:

Small-scale farmers need reliable, timely and use-friendly weather information to guide in formulating and implementing agriculture management decision-making at farm level towards adapting to climate variability. In 2011 and 2012, CCAFS West Africa in partnership with ANACIM successfully designed, developed, tested, implemented and evaluated an approach to communicate downscale seasonal forecast tailored to the needs of smallholder farmers in West Africa. The approach is being scaled up in new regions in Senegal following the same approach.

Introduction / objectives:

The main objective of the project was to scale up the seasonal forecast communication approach developed in Kaffrine in new regions in Senegal.

Project results:

- 63 representatives of farmers organizations, 13 extension services and a rural radio in Kaffrine trained on communicating seasonal forecast
- 3 new regions (Thies, Diourbel and Louga) reached by the seasonal forecast communication approach
- 3 new partnerships developed with the Millennium Development Goals (MDG), the Union of Radios rurales du Senegal (URAC) and HELIX project (interested to see the approach scaled up in Niakhar).
- 15 rural radios leaders and managers within the regions of Kaffrine, Thies, Diourbel and Louga trained on a) better understanding of climate information (notably the weather bulletin produced) and b) communicate timely and in a user-friendly format the information to their rural audiences
- 113 participants (7 representatives of farmers cooperatives, 3 MDG millennium villages project coordinators, 92 pilot farmers and 11 extension technicians/facilitators) in Louga and 66 participants (11 representatives of extension services, 50 farmers, 3 representatives of rural radio, and 3 experts on indigenous knowledge) in Diourbel regions trained on using climate information for decision-making. At the evaluation, farmers recommended to focus the information on the onset, length of the rainy season, force and frequency of wind, dry spell occurrence.

Partners:

ANACIM, ISRA, Millennium Development Goals, HELIX project, URAC (Union of Rural Radios of Senegal), FONGs (Non-governmental organizations federation of Senegal), Credit Mutuel du Senegal

Links/sources for further information:

<http://uracsenegal.org/wf-menu-profiles/vie-de-l-urac/formation>

Case Study #2

Title: Monitoring and evaluation for harvesting adaptation outcomes in West Africa

Author: Jacques Somda, Robert Zougmore, Abdoulaye S. Moussa

Type: Successful communications, Capacity enhancement, Participatory action research

Project description:

West African countries are lagging in the areas of monitoring and evaluation, due to some extent, to the lack of adequate skills from local to national levels. Consequently, many adaptation initiatives undertaken since then could not be profitable to the future initiative in terms of lessons learned from approaches and achievements. The CCAFS programme is expected to generate a variety of behavioral changes through the provision of its outputs that will contribute to improved agriculture, natural resources and food security

Introduction / objectives:

The purpose of the project is to understand how individual outcomes contribute to broader system-wide changes. Specifically, the project's objective was to capacitate and enable scientists, grant makers, and managers to identify, formulate, verify, and make sense of behavioral changes of their interventions on climate change, agriculture and food security.

Project results:

- 11 researchers from Senegal skilled to use participatory planning, monitoring and evaluation tools for climate change adaptation in the community of Ngouye, one of the CCAFS site for the participatory action research led by ICRAF/ISRA
- 49 researchers and practitioners from Burkina Faso, Ghana, Niger and Senegal capacitated to use the Most Significant Change and the Outcome Journal techniques.
- 4 M&E plans developed and validated (by the PAR teams in Burkina Faso, Ghana, Niger and Senegal) for the implementation of the outcomes harvesting techniques
- In Niger, Burkina Faso, Ghana and Senegal, the PAR/ICRAF teams tested the techniques of the Most Significant Change in communities (Tibtenga in Burkina, Bankadey and Kampa-Zpppparma in Niger, Doggoh in Ghana and Ngouye in Senegal) and the results highlighted its effectiveness in helping communities' members tell stories of changes. Researchers and their partners learned how M&E on the status of resources can be improved with information related to community and their members' changes in behavior, knowledge, relationship and activities
- Adaptation outcomes have been harvested in Burkina Faso (33 stories of change), Niger (20 stories of change),

Ghana (53 stories of change) and Senegal (33 stories of change). Further in Burkina Faso, two most significant changes (one per gender) have been selected (September 2013) and substantiated (November 2013) in Burkina Faso.

- Challenge: need to carefully plan and involve all actors for monitoring and evaluation of outcomes challenges, defined as changes in the participatory action research boundary partners in the selected CCAFS sites.

Partners:

INERA, ICRAF, AGRHYMET, Extension services

Links/sources for further information:

Case Study #3

Title: National platform as effective tools to get policy and decision makers on the side of climate change

Author: Robert Zougmore, Abdoulaye S. Moussa

Type: Innovative non-research partnerships, Policy engagement

Project description:

In 2012, CCAFS established a science-policy platform in partnership with the Council for Scientific and Industrial Research/Animal Research Institute (CSIR/ARI). The platform elaborated its 2013 roadmap with a series of activities to be implemented in 2013.

Introduction / objectives:

The overall objective of the project was to sensitize, lobby, capacitate, and raise awareness and mobilize stakeholders to effectively engage and catalyze changes needed to mainstream adaptation and mitigation strategies into national agriculture development plans

Project results:

- Official launch of the platform with over 50 actors
- 1 maiden workshop for key actors to share climate change and food security issues in Ghana attended by over 50 stakeholders
- One-day field visit organized on the 8th November 2013 for the Core Team to visit an aquaponic farm in the Central Region of Ghana for purposes of identifying climate smart activities worthy of emulation or adoption by stakeholders
- One-day workshop organized on knowledge and information sharing. The Platform attracted the flagbearer of the nation’s third largest political party.
- One seminar on awareness creation for high-level policy makers and politicians on “the impact of climate

change and long-term climate risk solutions to agriculture and food security in Ghana” attended by 2 government ministers, 7 parliamentarians and 19 Chief Directors and Directors.

- Commitment to support the effective mainstreaming of climate change into agricultural investments initiatives in Ghana, including support for research on climate-smart agriculture to benefit the most vulnerable populations by the Chair of the Parliamentary Select Committee on the Environment, on behalf of all participating parliamentarians.

Partners:

CSIR/ARI, CSIR/SARI, University of Ghana (Legon), Ministry of Agriculture (MOFA), Ghana National Association of Farmers and Fishermen, Global farmers Wives Association, Environment Protection Agency (EPA), Climate Change Network.

Links/sources for further information:

http://ccafs.cgiar.org/blog/climate-smart-agriculture-integrated-decision-making-ghana#.Uv9qN_afVq8

<http://www.kasaghana.org/188/Newsroom.html?item=628>

<http://www.ghananewsagency.org/science/minister-says-climate-change-is-major-cause-of-poverty-70132>

6. Outcomes

Outcomes #1

Title:

15 rural radios scaled-up the 2013 seasonal rainfall forecast to their audience farmers in 4 administrative regions of Senegal

What is the outcome of the research (i.e. use of research results by non-research partners)?

The downscaled seasonal rainfall forecast information and the communication approach developed by CCAFS and ANACIM was used by the Union des Radios Associatives et Communautaires du Sénégal (URAC), a union of 70 community-based radios in Senegal aiming to promote the economic development through synergies and knowledge sharing among community-members. The union covers the whole 14 administrative regions in Senegal (about 10 millions inhabitants) and communicates in all local languages.

What outputs produced in the three preceding years resulted in this outcome?

With the support of CCAFS, the national meteorological agency is now able to develop downscaled seasonal rainfall forecast using the cleaned climatic data from the targeted location (e.g. Kaffrine region). This forecast information includes the total rainfall, the onset and end of the rainy season plus a decadal update across the rainy season. The communication approach of the above-mentioned climate information to farmers has been tested successfully since 2011 and consists in insuring that the multi-disciplinary team of agricultural extension agents in charge of accompanying communities is able to translate the forecast information into agro-meteorological advisories that integrate the traditional knowledge of communities while also being tailored to their needs. By creating this inclusive and participatory mechanism of farm-management decision making, the trust built among stakeholders is increased and creates motivation for the use and application of the climate services.

What partners helped in producing the outcome?

The Kaffrine prefect who leads the multi-disciplinary team for Kaffrine, including the community radio of Kaffrine, promoted the successful implementation of the seasonal forecast communication approach among his fellow district-level authorities and this brought great interest by the Kaffrine neighboring regions who contacted ANACIM to request a widespread dissemination of the climate information through rural and community radios. And therefore, the decision to work primarily with the URAC to reach several regions

Who used the output?

Farmers from the 14 administrative regions covered by URAC listened to special radio programs on the downscaled seasonal forecast of their region and the following decadal updates across the rainy season. The interactive character of the radio program allowed listeners to revert to the radio with their feedback (information, views, request of clarification...). Assuming that 70% of the Senegalese are living in rural areas, we estimate that the audience from the 14 regions approximates that and at least 50% of that population used the

information, making an estimate of 3 millions users

How was the output used?

The agro-meteorological advisories were used by farmers for farm-management decision making across the rainy season while the climate information was also used to prevent from disasters created by climate extremes in both rural and urban areas.

What is the evidence for this outcome? Specifically, what kind of study was conducted to show the connection between the research and the outcome? Who conducted it? Please provide a reference or source.

A month after the training it was asked to URAC to make a survey amongst its network and find out what was the impact. Eventhough there are not quantified numbers but they did send a report (see letter) of acknowledgment and did make a brief evaluation of the training

Outcomes #2

Title:

ROPPA, the West African Farmers' Organization Network is now considering climate-smart agriculture as a major pathway to achieving family farms' food security in West Africa

What is the outcome of the research (i.e. use of research results by non-research partners)?

Thanks to our partnership with the West African Farmers' Organization Network (ROPPA), CCAFS research work on climate-smart agriculture is of interest to ROPPA and its 12 member-countries in order to fine-tune its pathways for achieving family farms' food security in West Africa

What outputs produced in the three preceding years resulted in this outcome?

CCAFS West Africa program is partnering since 2012 with ROPPA, the West Africa farmers organization network in order to promote the use of CSA within the family farm development. In this framework, CCAFS and ROPPA co-organized in 2012 a regional farmer forum on "Food sovereignty in the context of Climate Change: Regional policymakers responses" where CCAFS and its partners presented various promising options (technologies, approaches, practices, Tools, etc.) that can be used by farmers across the sub-region to implement CSA. This includes (1) the use of climate-smart village model by communities for the sound adaptation and mitigation of the agricultural sector to climate change, (2) the adequate mechanisms to communicate and use climate information and services tailored to the needs of farmers, (3) the farm-of-the-future approach to strengthen the capacity of communities to adapt to climate change, (4) the role of national science-policy dialogues platforms in the mainstreaming of climate change into national development strategies and plans. Since then, and based on the recommendations from the 250 participants, ROPPA expressed interest to revise its strategic plan for agricultural development in a way to mainstream climate change more effectively. CCAFS has been approached by ROPPA to be a major partner to lead the implementation of this initiative.

What partners helped in producing the outcome?

AGRHYMET contributed to the development of the communication approach for the climate forecast as well as the inclusion in its regional mechanism for information dissemination. CARE-International Niger promoted the use of the national science-policy dialogue platform as a springboard to insure informed decision making that also capitalize community-based successes (bottom-up). CORAF, ECOWAS Agriculture department and ROPPA have been impressed by the CCAFS-led products and thus have been since the farmers' forum, promoting the widespread sharing of these products across the region.

Who used the output?

The 250 ROPPA-members who attended the forum committed to share what they learnt during the meeting with their respective organizations, including sister farmer networks such as RBM (West African pastoralists network) and APESS (Organization for the livestock promotion in the Sahel). We estimate that through their networking, several thousands of farmers will have received the CSA-related information produced by CCAFS and that they are ready to integrate these into their farm-management.

How was the output used?

ROPPA network and farmers are now sensitized about existing potential CSA-related products produced by CCAFS and are ready to integrate these into their farm-management.

What is the evidence for this outcome? Specifically, what kind of study was conducted to show the connection between the research and the outcome? Who conducted it? Please provide a reference or source.

- The farmers' regional forum recommendations- The letter of ROPPA Executive Secretary requesting CCAFS collaboration

7. Outcome indicators

Outcome indicator #1

Outcome indicator:

One to five flagship technical and/or institutional approaches identified and developed with farmers, key development and funding agencies (national and international), civil society organizations and private sector in three regions, which would directly enhance the adaptive capacity of the farming systems to the climate change conditions

Achievements:

- 35 stakeholders from Burkina Faso, Ghana, Mali, Niger and Senegal in West Africa capacitated to use the analogue tool and the farms of the future approach to identify sound incremental adaptation strategies and options to cope with climate variability and change. - National science-policy dialogue platforms setup in the five pilot countries and able to analyze priority needs for effective national climate-smart investment

Evidence:

<http://ccafs.cgiar.org/blog/%E2%80%9Cfarms-future-arrives-west-africa#.UtPBAGRdXt8>http://www.seneweb.com/news/Agriculture/changement-climatique-agriculture-et-securite-alimentaire-les-acteurs-connus-et-les-experiences-capitalisees_n_113403.html<http://www.ghananewsagency.org/science/minister-says-climate-change-is-major-cause-of-poverty-70132><http://ccafs.cgiar.org/blog/climate-smart-agriculture-integrated-decision-making-ghana#.Uvy9nfafVq8><http://ccafs.cgiar.org/blog/serious-business-nap-ing#.Uvy-pfafVq8><http://www.ccafs.cgiar.org/research-highlight/new-report-highlights-lessons-national-adaptation-planning#.UofnLs7I7IU>).

Outcome indicator #2

Outcome indicator:

Breeding strategies of regional and national crop breeding institutions in three target regions are coordinated, informed by CCAFS-led crop modeling approaches that are developed and evaluated for biotic and abiotic constraints for the period 2020 to 2050

Achievements:

Sorghum (*Sorghum bicolor* (L.) Moench) is the major staple crop of West Africa where farmers continue to cultivate photoperiod-sensitive guinea landraces as part of a strategy to minimize risk and ensure yield stability. With rainfall patterns having decreased over the past decades, and in the search for new varietal options that

can respond to this changing context, researchers decided to give farmers access to ex-situ national collections along with the opportunity to evaluate recent improved varieties. After on-farm testing via multi-locational trials, including varietal selection trials, crop management and multi-locational trials, results showed that farmers' selection criteria were focused on adaptation to agro-climatic conditions as well as specific grain qualities for processing and consumption. The work also shows that wide dissemination of experimental seed at a national scale, was largely achieved through collaboration with a strong farmer organisation in conjunction with farmer training programs focused on on-farm seed production and the commercialisation of this seed.

Evidence:

Vom Brocke K., Trouche J., Weltzien E., Kondombo-Barro C.P., Sidibé A., Zougmore R., Gozé E., 2013. Helping farmers adapt to climate and cropping system change through increased access to sorghum genetic resources adapted to prevalent sorghum cropping systems in Burkina Faso. *Experimental Agriculture*: page 1 of 22. doi:10.1017/S0014479713000616

Outcome indicator #3

Outcome indicator:

Integrated adaptation strategies for agricultural and food systems inserted into policy and institutional frameworks at regional, national or sub-national level in 2 target regions. Policy makers and key stakeholders use CCAFS research outputs - guidelines, tools and methods- to support the development of NAPAS, sector specific adaptation plans, or germplasm benefit sharing policies.

Achievements:

The systemic Integrated Adaptation (SIA) approach has been tested in Ghana and aimed to produce site-specific contextual insights as well as draw out scalable and replicable features which can guide regional, national and international policy, planning and decision-making processes. This was linked with the need for the Ghana science-policy dialogue platform to be aware of community-level needs and successes for national level decision-making (bottom up approach). Preliminary results suggest pursuing this initiative in 2014 in a more integrated manner with all levels (from community to sub-national to national) and with all key stakeholders (Farmers organizations and village leaders, district authorities, national decision and policy advisors...). The ultimate expected outcome is a systemic framework for integrated adaptation planning.

Evidence:

http://ccafs.cgiar.org/ghanas-climate-change-adaptation-landscape-discussed-various-angles#.Uvy_k_afVq8

Outcome indicator #4

Outcome indicator:

One to five flagship risk management interventions evaluated and demonstrated by farmers and agencies at benchmark locations in three regions

Achievements:

Climate information services are now reaching men and women farmers in four administrative regions of Senegal:

- 15 leaders and managers of rural radios within the 4 administrative regions (Kaffrine, Thies, Diourbel and Louga) have been trained to communicate climate information to their communities.
- We partner with the Millennium village project (MVP) to bring climate service in the Louga region located in the northern part of Senegal.
- We also scaled up climate information services in Diourbel through partnering with the farmers NGOs FONGS (Federation of Non-Governmental Organizations in Senegal).
- And as a result of the growing interest to the success of Kaffrine experience, ANACIM has contracted with the EU funded project “High-End cLimate Impacts and eXtremes (HELIX) to implement (upscale) the same activities in other places (Niakhar) in a way to assist farmers to deal with extremes events in the future.

Evidence:

Various documents related to the above-mentioned initiatives (letters, press release, contract...)

Outcome indicator #5

Outcome indicator:

Three food crisis response, post-crisis recovery, and food trade and delivery strategies tested and evaluated with partner crisis response organizations at benchmark locations in three regions

Achievements:

One draft strategy on climate risk management in the food system developed. Next step is to validate the strategy and construct partnership initiatives with key stakeholders in the region.

Evidence:

Draft report available

Outcome indicator #6

Outcome indicator:

National meteorological services and regional climate centers trained and equipped to produce downscaled seasonal forecast products for rural communities in two countries in each of three regions

Achievements:

Through the partnership with AGRHYMET and in collaboration with national met services, about 353 stakeholders (technical staff from NARES, NGOs staff, national met services, agricultural extension officers, representatives of farmers organizations, rural radios, etc.) from Burkina Faso, Ghana, Niger, Mali and Senegal were capacitated in interpreting and disseminating downscaled seasonal forecast information. The downscaled seasonal forecast produced by each of the in-country stakeholders team was then communicated to farmers at CCAFS sites. More than 200 farmers from CCAFS sites in Burkina, Ghana and Mali evaluated the seasonal forecast communicated to them in 2013. Representatives of national met services from 16 CILSS/ECOWAS member states, and AGRHYMET staff trained to provide improved climate services (topic included basic data quality control procedures, calibration of daily satellite rainfall estimation algorithms)

Evidence:

Draft reports of the activity <http://uracsenegal.org/wf-menu-profiles/vie-de-l-urac/formation>

Outcome indicator #7

Outcome indicator:

Agriculture mainstreamed into the global climate change policies, and major international food security initiatives fully incorporate climate change concerns

Achievements:

CCAFS RPL West Africa actively contributed to global level events and shared regional perspectives and initiatives:- Supported representatives of CCAFS national platforms members from Mali, Ghana and Burkina Faso to actively participate to the CCAFS workshop on lessons sharing on NAPs development- Attended as panelist to the CCAFS side event on NAPs and agriculture during the COP19,• Attended as panelist and made a presentation on West African Agriculture and climate change at the technical session on the Good, the Bad and the Ugly, organized by IFPRI during the Global Landscapes • Backstopped Ghana delegate for his attendance as panelist to the CCAFS major event during the Global Landscapes Forum

Evidence:

<http://www.ccafs.cgiar.org/events/16/nov/2013/global-landscapes-forum#.UoINWs7I7IU>

<http://www.ccafs.cgiar.org/blog/what-potential-impact-climate-change-africas-farmers#.UoINwc7I7IU>

<http://ccafs.cgiar.org/blog/serious-business-nap-ing#.UoIMvs7I7IV>

<http://www.ccafs.cgiar.org/research-highlight/new-report-highlights-lessons-national-adaptation-planning#.UofnLs7I7IU>

http://ccafs.cgiar.org/blog/combined-solutions-strengthen-adaptation#.Uv9Qq_afVq8

Outcome indicator #8

Outcome indicator:

Global database and set of tools for climate-smart agriculture established and used by key international and regional agencies

Achievements:

- A database of 600 households' livelihood characteristics (e.g. cropping activities, types of crops, crops production, sales, consumption, assets, livestock activities, etc.) is under preparation and will be available soon. The data base can be used for household livelihood analysis and modeling the impacts of adaptation and mitigation options, and also for targeting adaptation options.- CCAFS partners in West Africa trained on various prioritization tools for climate-smart agriculture: (1) Prioritization of climate smart agriculture technologies at local scale: Methodology and assessment; (2) Prioritizing adaptation options in agriculture through exploratory land use analysis; (3) Vulnerability assessment process for prioritization; (4) Climate analogue for prioritization.

Evidence:

<http://ccafs.cgiar.org/institutions-and-policies-scaling-climate-smart-agriculture#.Uv3uYfafVq8>

Outcome indicator #9

Outcome indicator:

New knowledge on how alternative policy and program options impact agriculture and food security under climate change incorporated into strategy development by at least 3 national agencies, and 3 key international and regional agencies

Achievements:

The book "West African Agriculture and Climate Change: A Comprehensive Analysis" has been launched during an official ceremony in Niger attended by three Ministers (Livestock, Environment, Agriculture) and each country coordinator of the West African Agriculture Productivity Program (WAAPP) who received officially a copy of the book. The ceremony was followed by a press conference where IFPRI and CCAFS West Africa were key players in

responding to the questions of the journalists (press, national TV, regional TV, etc.). The book is a first of three books in IFPRI's climate change in Africa series, examines the food security threats facing 11 of the countries that make up West Africa — Benin, Burkina Faso, Côte d'Ivoire, Ghana, Guinea, Liberia, Niger, Nigeria, Senegal, Sierra Leone, and Togo — and explores how climate change will increase the efforts needed to achieve sustainable food security throughout the region

Evidence:

<http://ccafs.cgiar.org/blog/new-report-reveals-how-climate-change-will-hit-west-africa><http://www.coraf.org/en/component/content/article/186.html>

8. Leveraged funds

Leveraged fund #1

Title:

IFAD ASAP proposal for Niger

Partner name: Programme Agriculture Familiale dans les régions de Tahoua, Maradi et Zinder (PAFTMZ)

Budget: \$13000000

Theme: T1

Leveraged fund #2

Title:

Enhancing the resilience and adaptive capacity to climate change through integrated land, water, and nutrient management in semi-arid West Africa – “ENRACCA-WA”

Partner name: Institut of Sahel (INSAH)

Budget: \$731247

Theme: T1

Leveraged fund #3

Title:

Towards more inclusive, cooperative and participative climate change interventions in Kenya, Ghana and Burkina Faso

Partner name: International Development Studies, Dept. Human Geography & Planning, Faculty of Geosciences, Utrecht University

Budget: \$835000

Theme: T4

9. Synthesis report

Provide a synthesis of research activities at CCAFS sites

In 2013, the community-level participatory action research activities initiated in previous years were continued in the climate-smart villages in collaboration with key regional institutions (ICRAF, IUCN, AGRHYMET, ILRI) and national agricultural research services (INRAN, ISRA, IER, INERA and CSIR/SARI). This consisted in demonstrations with communities in order to test, adapt, improve and monitor strategic innovations supporting climate-smart agriculture. Examples of priority production interventions with expected adaptation and mitigation synergies are integrated soil nutrient management, agroforestry, sustainable biofuel and fuel wood production systems, rehabilitation of degraded lands, and water conservation and management. Conservation agriculture is promoted within these cropping systems through reduced tillage (e.g.: zaï technique), crop rotation and soil cover with assisted trees regeneration and plantation in fields in order to increase carbon sequestration and to improve soil health. Climate risk management strategies are tested based on the use of downscaled seasonal climate forecast information to make adaptation choices (e.g.: types of crops and varieties, crop diversification systems, fertilizer application, weeding). The design and communication of the climate services to inform farm management decision-making in countries is coordinated through AGRHYMET in collaboration with the national meteorological services. The participatory M&E planning of adaptation (& mitigation) options within the climate-smart villages led by IUCN consisted in: (1) training a multi-disciplinary team of researchers, university scientists, extension officers, NGOs officers, etc., on the application of the various tools included in the M&E toolkit; (2) implementing the various tools on each site with men and women farmers for the identification of major climate risks, constraints, opportunities and resources, the mapping of the vulnerability of various groups, the definition & development of the partnership needed to achieve the common vision defined by the group, the participatory identification of technological options for on-farm testing and demonstration; (3) putting in place a system (tool) to monitor the adaptive capacity and to capture the behavioral change of people and organizations involved in the PAR process and to iteratively feed the lessons learnt into the process among all stakeholders. A working paper synthesizing preliminary lessons learnt in Burkina is in preparation. This year, the piloting of the farm-of-the future approach in the five countries in partnership with the West African Productivity Program funded by the World Bank and the Institut du Sahel (INSAH) allowed drawing lessons for the appropriate mechanisms to scale out this approach but also helped identify adaptation learning opportunities that can feedback the farmer action research tests in the climate-smart villages. An assessment of GHG emissions from different land use systems was performed in Benin, Burkina, Mali, Senegal and Ghana. In the later country for instance, the study reported on the CO₂ emissions from two locations (i) heavy clayey soils and (ii) light textured site, both in the southern zone of Ghana and for the following landuse systems: animal kraals, woodlots, original forests, vegetable gardens, cultivated field crop plots and rice paddy fields. A working paper on these results is in preparation. The household level detailed analysis (IMPACTlite) was conducted with our NARS partners involved in the data collection surveys, to examine, understand and formulate recommendations on relationships between climate variability and change, adaptation and/or mitigation strategies and food security, livelihoods and well-being of households. In partnership with IFAD and CIRAD, we conducted at the Lawra-Jirapa CCAFS site of Ghana, a meta-analysis of the potential for conservation agriculture (CA) adoption using the QAToCA, a simple tool that aims to enable regional experts, research teams and/or managers of development projects with a focus on CA to assess the ‘relative likelihood of CA adoption’. The tool consists of a list of questions with answer statements and scores that together determine the potential for CA adoption in a given project region. Questions deal with characteristics of CA as an object of adoption, the capacity of the promoting organization(s), attributes of the dissemination strategy; institutional frame conditions at village and regional level, market conditions at the village and regional levels, and the community’s perception towards CA. It is reported that the potential for CA adoption is perceived as relatively high, including a relatively positive influence of local market

conditions. One of the main bottlenecks is the conflict in the use of cereal residues for mulching and cattle feeding; free grazing is a general practice at both sites. In both regions in Northern Ghana, agro-dealers seem to be functional: herbicides (glyphosate) are readily available at affordable prices through imports from China. Knapsack sprayers can be rented. Planting is done by making a hole using a hoe; the systems at both sites are manual-based cropping systems. Political and institutional frame conditions at regional level are seen as exerting the most negative influence on the adoption potential of CA. There are government programs, such as the purchase and promotion of ploughs and tractors (for rent) that might hamper the introduction or diminish wider dissemination of CA. In contrast to Kenya, Zimbabwe and Zambia, Ghana has not explicitly incorporated CA in its strategic plans for the development of the agricultural sector.

Provide a synthesis of cross-center activities

Cross-centers activities in 2013 included a) the on-going participatory action research to develop up-scalable climate-smart village models for which, ICRAF Sahel node and ICRISAT Bamako are insuring the regional coordination. b) ILRI, ICRISAT, ICRAF and CIFOR, working together on IMPACTlite to analyze the likelihoods impacts of climate change on the livelihoods of farmers and the responses and strategies developed by farmers, and also to research hypothesizes and formulate recommendations on relationships between climate variability and change, adaptation and/or mitigation strategies and food security, livelihoods and well-being; c) ILRI, ICRAF and ICRISAT working with the scenario expert team from the University of Oxford to develop and test the socio-economic scenarios in West Africa; d) ICRISAT and CIAT built a south-south collaboration between WA and LAM regions around the mechanisms for a sound provision of climate information services and this was concreted through a visit of LAM representatives to Kaffrine site in Senegal.

Provide a synthesis of regional engagement and communications activities

In 2013, engagement activities included: The collaboration was pursued with key regional institutions involved in the implementation of research such as AGRHYMET (for the regional coordination of the design and communication of climate information services to guide farm management decision and reduce climate risk. To that end, AGRHYMET partnered with national met services, research institutions, public extension services and NGOs in Ghana, Burkina Faso, Mali, Niger and Senegal to develop the probabilistic forecast and to communicate the information to communities at CCAFS sites.); INSAH (for the scaling up of the farms of the future approach in West Africa in support of the CORAF/WECARD funded project 'ENRACCA'), IUCN (for understanding how individual outcomes contribute to broader system-wide changes, and NARS (for research on GHG quantification, community-based participatory action research to develop climate smart village model, scaling up the farms of the future, IMPACTlite) and meteorological services (for interpreting and communicating seasonal forecast, and development of a proposal under CCRD/USAID on enhancing coordinated institutional frameworks for the provision, communication and utilization of climate information services to support risk management by smallholder farmers in West Africa. The partnership with CORAF was also pursued through the WA scenario development, the AfricaAdapt project (regional platform), the production and widespread dissemination of the book on "West African agriculture and climate change" as well as the organization/contribution to sides' events (e.g.: FARA science week, Global landscapes). ROPPA is now strongly engaged with CCAFS re the inclusion of climate-smart agriculture in its operational strategy as well as in the mainstreaming of climate change into national agricultural investment plans under CORAF and CAADP. ECOWAS agriculture department has now engaged with CCAFS to explore how the CCAFS scenarios for West Africa can contribute to inform/guide ECOWAP, the West African Policy framework for the agriculture sector. The regional program is fully engaged with ECOWAS within a task-force to actively contribute to the organization of the forum of regional and national stakeholders for the alliance of climate-smart agriculture promotion in West Africa. The collaboration with

WASCAL has been strengthened through involving CCAFS RPL as Board member of WASCAL Graduate Research Programme (GRP) on climate change and agriculture. As well as lecturer of the same GRP for two courses: (1) Concept of Resilience in Agricultural Production Systems (Livestock and cropping systems) and (2) Energetics of production systems (energy flows). An exchange visit between WASCAL high management and CCAFS team attending the FARA science week in Accra has been organized to explore key areas on common interest for our partnership. A draft MoU has been developed for final signature. Scientists from NARS and from CGIAR centers (ICRAF, ICRISAT) are now supervising 7 MSc and PhD students working in the CCAFS sites (e.g.: Cizana in Mali, Lawra-Jirapa in Ghana). In the framework of the science-policy dialogue platforms, we strengthened our partnership 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). These platforms have 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. Other promising engagements in the region include: 1) a partnership developed with CARE international through which a West Africa Learning Event was organized to share and reflect on their experiences, successes, challenges, opportunities, etc. related to community-based adaptation to climate change. CCAFS WA sponsored partners to showcase their experiences. This regional meeting brought together 72 participants from a diverse range of 36 NGOs and research partners and 14 governments organizations (see communiqué at http://www.careclimatechange.org/files/West_Africa_CBA_Learning_Event_Communique.pdf); 2) the co-development of the BRACED proposal for West Africa with Catholic Relief Service; 3) Our partnership with FARA was also concretized through our participation to the FARA 6th Africa Agriculture Science Week in Ghana with a side event on, 'Climate Smart Villages in Africa - opportunities for farmers and communities' which brought many stakeholders (researchers, development practitioners, policy-makers, farmers organizations, universities) to share and discuss the model of climate smart villages being implemented by CCAFS in East and West Africa. CCAFS West Africa partners presented findings of on-going projects (e.g. Climate Services: Empowering Farmers to confront climate risks at village-level by ANACIM, Participatory development of adaptation & mitigation technologies and practices in East and West Africa by ICRAF-Sahel node). Communication activities included the coverage of major events organized by partners or co-organized with CCAFS. Examples of such events include: 1. The regional planning meeting for the participatory action research at site in West Africa (Transformations, Internal newsletter of ICRAF vol 6 Issue 7 of 19 April 2013) 2. The official launch of the CCAFS/IFPRI book on "African agriculture and climate change" organized by CORAF <http://www.egfar.org/fr/news/imported/regional-workshop-mainstream-climate-change-west-africa-agricultural-productivity-prog3> 3. The FARA agric science week in Accra where (please insert blog on the SCV side event...) 4. The CBA learning event in Benin <http://ccafs.cgiar.org/blog/what-needed-respond-changing-west-african-climate#.Uv9B5vafVq95>. The Ghana climate change, agriculture and food security platform official launch http://ccafs.cgiar.org/blog/climate-smart-agriculture-integrated-decision-making-ghana#.Uv9C1_afVq8 6. The analogue training workshop in Niamey <http://ccafs.cgiar.org/blog/%E2%80%9Cfarms-future-arrives-west-africa#.UtPBAGRdXt8> 7. The side event in Warsaw on NAPs and agriculture http://www.jeuneafrique.com/Article_ARTJAWEB20140115122446_agriculture-ecologie-tribune-changement-climatiquechangement-climatique-l-afrique-de-l-ouest-s-adapte-mais-les-negociations-stagnent.html; <http://www.theafricareport.com/North-Africa/as-climate-change-bites-the-dust-west-africa-seeks-solutions.html> 8. The side event in Warsaw at the global landscapes forum on the Good, the Bad and the ugly <http://www.landscapes.org/climate-talks-fail-farmers-west-africa-turns-towards-trees-land-rehabilitation-adaptation/#.Uv9GYPafVq8> Communication products were also released during major events including 1) the opinion piece in Jeune Afrique on the Volta river water http://www.jeuneafrique.com/Article_ARTJAWEB20140115122446_agriculture-ecologie-tribune-changement-climatiquechangement-climatique-l-afrique-de-l-ouest-s-adapte-mais-les-negociations-stagnent.html ; 2) The opinion piece on the UNFCCC negotiations during COP19 in Warsaw; 3) contribution to the flyer on climate-

smart villages concept.

Provide a synthesis of activities related to decision support systems and tools

In 2013, activities related to decision support systems and tools included the quantification of the West Africa scenarios (4 scenarios were developed through consultative workshops), the testing on and capacitating of stakeholders on the use of the TOP-SECAC (a toolkit for planning, monitoring and evaluating of climate change adaptive capacities) developed by IUCN. CCAFS WA sponsored 3 participants to attend a training workshop in Colombo on 'Institutions and policies for scaling up climate-smart agriculture: the prioritization tools for climate-smart agriculture. CCAFS WA contributed also to the meta-analysis of NAPs (CCAFS Report No. 10) and sponsored 3 representatives of the national platforms whom shared their experiences and knowledge on the development of national adaptation plans (e.g. Ghana's Akropong approach which stressed the need to involve multiple stakeholders at all stages of the process, to ensure that the interests of all sectors were represented in designing adaptation plans http://ccafs.cgiar.org/blog/combined-solutions-strengthen-adaptation#.Uv9Qq_afVq8). CCAFS WA organized a regional workshop to train experts on the analogue tool and its farms of the future approach (35 experts from Burkina Faso, Ghana, Mali, Niger and Senegal), co-organized a regional learning event with CARE to share CCAFS science (e.g. seasonal forecast, farms of the future, linking science to policy dialogue, etc.).