1. Activity Reporting.

Activity 503-2014

Backstopping of baselines (household, village and institutional) in 2 new target regions

Status	On going	Milestone	4.2.1 2014 (1)
Start date	2010 Jan	End date	2014 Dec

Description: CCAFS has conducted baseline surveys at the household, village and organizational levels across the three original target regions. In 2014 the goal is to conduct the same surveys (all 3 levels) at selected research sites in the two new target regions. Theme 4.2 will provide technical backstopping to the RPLs in SEA and LAM to accomplish this task.

Status: On going. The SEA and LAM local teams were trained in 2014 for all three levels of the baseline.

In SEA, the teams completed the VBS and OBS data collection at the end of 2014, but the HHBS required more time and data collection is ongoing in the beginning of 2015. VBS reports for Vietnam have been submitted, and Laos and Cambodia are working to submit their VBS reports. The SO for SEA is working with Theme 4.2 to review and approve the VBS reports.

In LAM, the data collection has been completed for all 3 levels and the local teams are working to analysis the results and write the reports. The SO for LAM will work with Theme 4.2 to review and approve all reports.

Theme 4.2 has provided backstopping throughout the entire process. We revised the tools for use in the new regions, and our data management partner, the Statistical Services Center at University of Reading, provided most of the trainings while partners from our EA region provided training on the VBS and OBS in SEA. Theme 4.2 has monitored progress and answered questions from the teams as they arose.

We expect that the baseline efforts for SEA and LAM will be wrapped up in the first quarter of 2015.

Gender Component: The household baseline survey collect information on division of labor, receipt of climate information by sex, etc., and the village study is conducted using separate groups of men and women.

Objectives:

1. Finalize and make available reports from household, village and organisational baseline surveys in all three target regions
2. Publish a journal article synthesizing the results of all baseline surveys
3. Make available a CCAFS report synthesizing the baseline survey results

Deliverables:

Description	Type	Year	Status	Justification
Datasets from household, village and organizational level baseline studies	Data	2014	Partially complete	The deliverable is partially complete, as the datasets have been collected but are still being processed. Once they are in the proper format they will be made publicly available.
Baseline reports for each site at each level	Non-peer reviewed articles	2014	Extended	The data collection took longer than expected, so additional time is necessary to analyze the data and write the reports.
The household baseline survey questionnaire, village baseline implementation manual, and organizational survey questionnaire and interview guidelines were revised for use in the 2 new regions in 2014.	Tools (i.e. search engines, games, etc)	2014	Complete	
The annual report documents the activities undertaken by SSC during the year 2014. It describes the backstopping services provided for the CCAFS baseline activities.	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	

Partners:

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Location(s):

Regions: Latin America (LAM), South East Asia (SEA),

Activity 910-2014

Cross regional comparisons for all 5 target regions initiated

Status	Extended	Milestone	4.2.1 2014 (1)
Start date	2014 Jan	End date	2014 Dec

Description: Once all the baseline data has been collected the sites in the two new target regions, we will conduct cross regional comparisons for all 5 current target regions using the baseline data from all three levels (household, village and organizational).

Status: Extended. The cross regional comparison activity has been extended into 2015 because the baseline data collection for the two new regions was not completed in 2014. The data collection for LAM and SEA is now wrapping up, and once the full dataset is compiled we will begin with the cross-regional comparison of all 5 CCAFS regions.

In the meantime, indicator documents for M&E were produced for all sites in EA, WA, SA; as well as a paper summarising the CCAFS baseline experience from a process perspective. Different initiatives are on the way to analysis CCAFS baseline data for academic papers.

Gender Component: The baseline tools collect some gender-disaggregated data at household and village level, as well as in the organisational level

Objectives:
1. To analyze the data from all 5 target regions and make comparisons in terms of adaptability to climate change, access to climate information services, food security, etc.

Deliverables:

Description	Type	Year	Status	Justification
Working paper and journal article detailing findings and analysis	Peer-reviewed journal articles	2015	Incomplete	
Each household involved in the baseline for the 15 sites in the 3 initial regions was revisited to confirm the GPS coordinates and the name of head of household. Corrections were made where necessary, and changes (e.g., the household moved) were noted.	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	
Working paper 56 is an updated version of the global summary of household baseline results from the 15 sites in the initial 3 regions of East Africa, West Africa, and South Asia. It summarizes key indicators and indices within each region.	Working Paper	2014	Complete	
One VBS report for each South Asia site was finalized in early 2014, completing the full set of baseline reports for the initial 15 sites. The VBS reports document community participatory exercises designed to gather information on a community's natural resources and infrastructure, organizational landscape, and information networks.	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	

Description	Type	Year	Status	Justification
The indicator documents bring together key indicators from all three levels of the baseline: household, village and organizational. There is one document per site, and it helps characterize the site using information gathered during the baseline. The template is structured to allow data from the midline and endline evaluations to also be entered, making it easier to see changes occurring in our selected indicators.	Information outputs	2014	Complete	
How resilient are farming households, communities, men and women to a changing climate in Africa?	Working Paper	2014	Complete	
Back to baselines: measuring change and sharing data	Peer-reviewed journal articles	2014	Complete	

Partners:

1- University of Reading:

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Location(s):

Global

Activity 514-2014

Further development of MarkSim software, development of an interpreter so MarkSim can run with DSSAT crop models

Status	On going	Milestone	4.2.1 2014 (2)
Start date	2010 Oct	End date	2014 Jun

Description: MarkSim® is a third-order markov rainfall generator, first released in 2002, that is able to simulate the observed variance of rainfall in both tropical and temperate regions. It works from a large set of parameters based (in version 1's case) on a calibration dataset of some 10,000 stations worldwide that have in most cases more than 15 years of daily historical rainfall data. Climates were clustered into some 700 types, and some of the parameters of the MarkSim model calculated by regression from the cluster most representative of the climate point to be simulated. Since its release, the tool has been widely used in the agricultural modelling community, and it is now also being used in empirically downscaling the outputs from climate models to produce daily weather data that are characteristic of future climatologies that can then be fed to agricultural models to evaluate possible impacts in the future. Since 2002, another 30,000 stations of historical daily rainfall have been collected, and version 2 of MarkSim will make use of this greatly expanded calibration data set. See previous activity description for more detail on previous phases.

Status: On going. Output 1: Finalise data functions from CMIP5 climate model data and incorporate into MarkSimGCM and MarkSim_Standalone. Using outputs from the CMIP5 data archive, for several climate models and the new RCP scenarios, data analysis and regression fitting, testing, and reprogramming MarkSimGCM and MarkSim_Standalone.

The dll for MarkSimGCM has been completed and tested

It was decided that to incorporate the Climate_Diagram in the same dll would be too complicated as the projected ideas could have lead to data loss between calls and might have compromised the server. The climate_Diagram_data.dll for this project and MarkSim_Standalone have been rewritten to incorporate the new CMIP5_module.

MarkSimGCM is now complete and the application incorporates the new dll for returning the climate data to drive the climate diagram.

Output 2: Finalise the new rainfall model for version 2 of MarkSim. This will involve several activities: completion of historical weather data checking, finalising the correction functions for rainfall censoring, re-running the climate clusters, deriving the new model parameter regressions, rewrite all relevant modules and routines to cope with the new models, and testing these exhaustively

New analysis finished of the functions to compensate the Markov parameters for censoring in the rainfall data and they have been incorporated in MarkSim_module.

The study of errors in the rain data has continued, and the following conditions, which are prevalent in the worldwide data, can be identified:
1. MFZ. Missing values for zero rainfall only.
2. MFR. Missing values for rain days only.
3. ZFM. Zeros for missing values.
4. WKD. Weekday only recording where the weekend total is summed into the next day.
Of the 44,820 stations in the new rainfall dataset 28,506 have been checked, with 3240 found with serious errors. Of the remaining 16,314 to check most are stations in the USA. A systematic error has been identified in a large subset of these, which will require a modification to the checking program.

A further 4000 stations of rainfall data have been obtained from the UK Met Office and will be added to the checking sequence

Ongoing

Output 3: Transfer MarkSim v2 to the existing MarkSimGCM and MarkSim_Standalone tools. Develop new code for each application and test as appropriate.
Pending output 2

Output 4: Develop an interpreter so that MarkSim v 2 can run within the DSSAT crop modelling software. Confer with DSSAT programmers at University of Florida and Washington State University, cut out the code needed, and test as appropriate

  Completed. All materials have been sent to the DSSAT programmer.

Output 5: Downscaling methods comparison. Contribute to an activity to compare and evaluate different downscaling methodologies and help write up the results for publication.

Not Done. The activity meeting was not convened.

New Activity: Soils data for DSSAT from the Harmonized World Soil Database

 The Harmonized World Soil Database is a world soil map at 30 arc-sec compiled from a range of previous soil maps. It contains data for profiles representing the mapping units, but these data are not in a form readily useful to DSSAT. There are, however, a set of about 9600 soil profiles from the WISE soil database that are in DSSAT format.

 Used cluster analysis techniques to create a subset of 188 representative soil profiles from these WISE database profiles and constructed a Fortran module to facilitate their use with DSSAT.

Condensed the HWSD 30 arc-second soils grid to 10 minute and 5 minute grids and produced new key files to maintain the correct proportions of soils per pixel. Added functions to use them in WISE_module. Developed a program to take a template DSSAT Filex file and incorporate all the relevant soils in the experiment.

Developed a new dll for use with MarkSimGCM that will return soils files to the user if required. One file contains the identifiers, classification and proportions of the files present at the mapping point, the other the full DSSAT format profile data for each soil.

A publication has been produced describing the CMIP5 extension of MarkSimGCM and the DSSAT soil extension.

Jones, P.,G. & Thornton P.,K. (2015) Representative soil profiles for the Harmonized World Soil Database at different spatial resolutions for agricultural modelling applications. Agric. Systems (Submitted)

Completed.

Gender Component: Not defined

Objectives:
1. Further develop MarkSim software
2. Develop an interpreter so MarkSim can run with DSSAT crop models
3. Downscaling methods comparison: contribute to an activity to compare and evaluate different downscaling methodologies and help write up the results for publication.

Deliverables:

Description	Type	Year	Status	Justification
Revised MarkSim software	Models (i.e. Agronomic Trials)	2014	Complete	
Code for insertion into DSSAT models	Platforms - Data Portals for disseminat ion	2014	Complete	
Comparison of various downscaling methodologies	Peer-reviewed journal articles	2014	Extended	A meeting on the topic was not convened in 2014 due to lack of funds and time.

Description	Type	Year	Status	Justification
The Harmonized World Soil Database is a world soil map at 30 arc-sec compiled from a range of previous soil maps. It contains data for profiles representing the mapping units, but these data are not in a form readily useful to DSSAT. There are, however, a set of about 9600 soil profiles from the WISE soil database that are in DSSAT format. The paper describes the methods used to return soils files to the user. One file contains the identifiers, classification and proportions of the files present at the mapping point, the other the full DSSAT format profile data for each soil. A publication has been produced describing the CMIP5 extension of MarkSimGCM and the DSSAT soil extension. Jones, P.,G. & Thornton P.,K. (2015) Representative soil profiles for the Harmonized World Soil Database at different spatial resolutions for agricultural modelling applications. Agric. Systems (Submitted)	Data	2014	Complete	

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Location(s):

Global

Activity 912-2014

Revision and pilot implementation of methods and analysis for "seamless" climate forecasts and scenarios for 1-20 year timescales, with a focus on extreme events

Status	On going	Milestone	4.2.1 2014 (2)
Start date	2014 Jan	End date	2015 Jul

Description: University of Cape Town will revise and pilot methods and analysis for "seamless" climate forecasts and scenarios for 1-20 year timescales, with a focus on extreme events.

Status: On going. Work is essentially complete on Work Stream 1, Agricultural decision-making and climate information needs, and Work Stream 2, Climate model evaluation and scenarios development. Reports have been produced, and four articles are in the process of submission to journals. The activity is on track to be completed by mid-2015, including a short synthesis piece on farmer decision making and climate information needs.

Gender Component: Not defined

Objectives:
1. Undertake exploratory research on specific issues associated with near-term climate change to provide early evidence for CCAFS science policy and joint CCAFS - Global Change research proposals
2. Provide preliminary analysis of CMIP5 and CORDEX modeling projections over the CCAFS target regions

Deliverables:

Description	Type	Year	Status	Justification
Summary of activities undertaken and work covered in 2014 as well as work remaining	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	
Added value information of CMIP 5 over CMIP 3	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	
Differences between CMIP3 and CMIP5 ensembles in terms of their application for assessment of impacts with a focus on changes in maize and rice growing areas for the period 2046-2065	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	

Description	Type	Year	Status	Justification
Utility of decadal climate information in both small scale and large scale commercial farming systems in Malawi	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	
Literature review and case study synthesis under work stream 1	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	On going	A few additions are being made to the report for the final draft

Partners:

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Location(s):

   Global

Activity 529-2014

Quantification of regional scenarios using global integrated models

Status	Complete	Milestone	4.2.1 2014 (3)
Start date	2011 Aug	End date	2014 Aug

Description: The development and use of scenarios functions as a platform for the exchange and application of knowledge and experience between CCAFS researchers and policy makers, privator sectors, NGOs and other societal actors. Because scenarios allow for the capturing of uncertainties and systems complexity in a coherent and plausible yet surprising and challenging fashion, scenarios are also a tool for generating shared engagement. The next step in the scenarios process is to explore the implications of these qualitative scenarios through quantigication using GEC and economic models that focus on food security assessment. The quantification of the scenarios will increase their credibility and plausibility and their usefulness as contexts for the testing of policies and strategies. Initially, the scenarios quantification will be done through the close collaboration of two modeling teams--a team working with the IMPACT model developed at IFPRI and a team working with the GLOBIOM model developed at IIASA.

Status: Complete. The quantification of scenarios in all CCAFS regions has been completed. The quantified scenarios have been used in short summary formats to successfully inform scenario-guided policy processes throughout all CCAFS regions.A synthesis working paper with core results in all regions has been published. Working papers elaborating further results per region are being finalized and next phase work includes the creation of combined global scenarios from all regional scenario sets.
This activity links to the policy engagement component of the regional scenarios work which is reported under T4.1

Gender Component: The stakeholder-driven scenarios that provide the basis for the quantitative scenarios include assumptions on gender dynamics in all regions.

Objectives:
1. To facilitate the quantification of the CCAFS scenarios through GLOBIOM and IMPACT for the five CCAFS regions, and to analyze and integrate GLOBIOM and IMPACT results.

Deliverables:

Description	Type	Year	Status	Justification
Draft reports containing annotated quantitative outputs in graphs and tables for West Africa, South Asia, Southeast Asia and Latin America	Peer-reviewed journal articles	2014	Cancelled	Other deliverable
Progress report at completion of project	Peer-reviewed journal articles	2014	Cancelled	other deliverable
Challenges to scenario-guided adaptive action on food security under climate change	Peer-reviewed journal articles	2014	Complete	
Exploring future changes in smallholder farming systems by linking socio-economic scenarios with regional and household models.	Peer-reviewed journal articles	2014	Complete	
Theme 'Linking Knowledge with Action' is now leaving space for CCAFS next phase, where the work will be mainstreamed throughout program. Here are highlights, success stories and lessons learned.	Books	2014	Complete	
Scenario use with risk maps for regional priorities by WRI/CCAFS http://ccafs.cgiar.org/blog/intelligent-ideas-scenarios-manage-water-climate-changes-guatemala#.VNuYMfnF-So	Social media outputs (including web sites, blogs, wikis, linkedin group, facebook, yammer, etc.)	2014	Complete	

Description	Type	Year	Status	Justification
Honduran SAG policy development using scenarios http://ccafs.cgiar.org/blog/helping-honduras-build-more-robust-climate-adaptation-strategy-agriculture-sector#.VNuawfnF-So	Social media outputs (including web sites, blogs, wikis, linkedin group, facebook, yammer, etc.)	2014	Complete	
Scenarios used to develop policies in the Andean countries http://ccafs.cgiar.org/blog/future-scenario-development-now-part-cambodias-action-plan-agriculture	Social media outputs (including web sites, blogs, wikis, linkedin group, facebook, yammer, etc.)	2014	Complete	
Cambodia's climate action plan developed using scenarios http://ccafs.cgiar.org/blog/future-scenario-development-now-part-cambodias-action-plan-agriculture	Social media outputs (including web sites, blogs, wikis, linkedin group, facebook, yammer, etc.)	2014	Complete	

Description	Type	Year	Status	Justification
What does the future hold for Bangladesh? Modeling scenarios for better climate policies http://ccafs.cgiar.org/blog/what-does-future-hold-bangladesh-modeling-scenarios-better-climate-policies#.VNuYZ_nF-So	Social media outputs (including web sites, blogs, wikis, linkedin group, facebook, yammer, etc.)	2014	Complete	
Scenarios for the Great Lakes region in East Africa created using land use modelling - appllied to identify policy priorities in Uganda, Rwanda, Burundi http://ccafs.cgiar.org/blog/putting-policies-test-scenarios-food-security-environments-and-adaptation	Social media outputs (including web sites, blogs, wikis, linkedin group, facebook, yammer, etc.)	2014	Complete	
Blog on scenarios paper in Global Environmental Change http://ccafs.cgiar.org/blog/step-right-direction-helping-decision-makers-ensure-food-secure-future#.VNuYkfnF-So	Social media outputs (including web sites, blogs, wikis, linkedin group, facebook, yammer, etc.)	2014	Complete	

Description	Type	Year	Status	Justification
Combining household-level simulation with land use change and socio-economic scenarios in Kenya http://ccafs.cgiar.org/blog/zooming-zooming-out-exploring-kenyas-agricultural-futures-farm-regional-level#.VNuYoPnF-So	Social media outputs (including web sites, blogs, wikis, linkedin group, facebook, yammer, etc.)	2014	Complete	
"Scenarios on food security, environments and adaptation in the Great Lakes region, Uganda" video by Elisabeth van de Grift: https://www.youtube.com/watch?v=VgGlUFz3oFY&list=PLmATng7lKk6Uv5oVJfgDsGWylO6CDCmSV	Video	2014	Complete	
"Andean countries join forces to strengthen policies in the face of future scenarios" video by Elisabeth van de Grift and Jose Luis Urrea: https://www.youtube.com/watch?v=EQkIWRa9zkM&index=2&list=PLmATng7lKk6Uv5oVJfgDsGWylO6CDCmSV	Video	2014	Complete	
Photos Andean scenarios and policy workshop (CCAFS/UNEP WCMC) https://www.flickr.com/photos/cgiarclimate/sets/72157649064402567/	Images	2014	Complete	
Photos Cambodia workshop (CCAFS/UNEP WCMC) https://www.flickr.com/photos/cgiarclimate/sets/72157648838367257/	Images	2014	Complete	

Description	Type	Year	Status	Justification
Photos Uganda scenarios and policy workshop (CCAFS/UNEP WCMC) https://www.flickr.com/photos/cgiarclimate/sets/72157645914926893/	Images	2014	Complete	
Photos Ghana (SIA) workshop (https://www.flickr.com/photos/cgiarclimate/sets/72157644448992491/)	Images	2014	Complete	
Semi-plenary: Resilience in the Anthropocene at Earth System Governance, Norwich, 1-3 July 2014, led by Joost Vervoort http://norwich2014.earthsystemgovernance.org/wp-content/uploads/2014/06/ESG-Conference-Programme_Final2_compressed_Jun20.pdf	Presentations	2014	Complete	
From Story to Science http://www.iiasa.ac.at/web/home/resources/mediacenter/FeatureArticles/w14-science-story.html	Social media outputs (including web sites, blogs, wikis, linkedin group, facebook, yammer, etc.)	2014	Complete	
Panel session "Challenges to scenario-guided governance of food systems under climate change" by Joost vervoort at ESG in Norwich, 1-3 July 2014 http://norwich2014.earthsystemgovernance.org/wp-content/uploads/2014/06/NC14-panels-9.pdf	Presentations	2014	Complete	

Description	Type	Year	Status	Justification
Panel session "Scenario-guided adaptive action on food security under climate change" at Resilience 2014, 4 to 8 July, Montpelier, by Joost Vervoort http://resilience2014.sciencesconf.org/25418	Presentations	2014	Complete	
Using scenarios for collaborative sense-making and action in food systems: opportunities for social entrepreneurs by JoostVervoort http://www.sbs.ox.ac.uk/sites/default/files/Skoll_Centre/Docs/essay-vervoort.pdf	Policy briefs - Briefing paper	2014	Complete	
A sign of things to come? Examining four major climate-related disasters, 2010-2013, and their impacts on food security. A preliminary study for Oxfam's GROW Campaign by Christopher Coghlan, Maliha Muzammil, John Ingram, Joost Vervoort, Friederike Otti and Rachel James http://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/rr-eci-a-sign-of-things-to-come-190914-en.pdf	Policy briefs - Briefing paper	2014	Complete	
"Explorando escenarios socioeconómicos bajo el cambio climático en Centroamérica" By Elisabeth van de Grift https://www.youtube.com/watch?v=cXPGlc1lrww	Video	2014	Complete	

Description	Type	Year	Status	Justification
"Explorando escenarios socioeconómicos bajo el cambio climático en los países Andinos" by Elisabeth van de Grift and Jose Luis Urrea https://www.youtube.com/watch?v=JyzKY2dbR4I	Video	2014	Complete	
Simulating stakeholder-driven food and climate scenarios for policy development in Africa, Asia and Latin America A multi-regional synthesis https://cgspace.cgiar.org/handle/10568/56839	Working Paper	2014	Complete	

Partners:

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Location(s):

Regions: Latin America (LAM), South East Asia (SEA),

Activity 929-2014

Comparing different livestock models to identify strengths, weaknesses and gaps

Status	Complete	Milestone	4.2.1 2014 (3)
Start date	2012 Nov	End date	2014 Jul

Description: CCAFS is collaborating with AGMIP and one area in which CCAFS is seeking to provide support is in ruminant livestock models. This activity focuses on the comparison of existing ruminant livestock models.

Status: Complete. We described the fundamental calculations and concepts of 6 basic nutrition models and 4 complex nutrition models, and compared the predictability of 4 selected nutrition models. For the comparison we gathered 173 data points from 37 published studies of lactating dairy cows from 6 regions of the world. Our analysis indicated that models are made of distinct concepts and assumptions, and further development is needed that can effectively estimate the contribution of ruminants on greenhouse gas. We provided 4 deliverable: 2 presentations, 1 peer-reviewed paper, and 1 booklet.

Gender Component: Not defined

Objectives:
1. Identify and contact key livestock modeling groups in North America, Latin America, Europe and Australia to ascertain interest in being part of the work. The major focus of the work should be on beef and dairy cattle, with a secondary focus on sheep and goats if time and resources allow.
2. Draw up a protocol for the intercomparison work, and identify and obtain suitable data sets describing animal performance on a range of diets that can be used for model evaluation purposes. The models in the analysis should be compared, whenever possible, in relation to the following outputs: animal requirements of energy and protein, the dietary supply of energy and protein, prediction of animal dry matter intake, prediction of animal performance (growth rates and milk production), and emission of nutrients and greenhouse gases.

3. Oversee and facilitate the intercomparison process, with simulations run by the groups responsible for the models, if possible, otherwise running simulations as needed; and collate results from the various modeling groups as appropriate.

4. Along with CCAFS personnel, convene a small meeting, either electronically or face-to-face (the latter with separate funding from CCAFS, if resources are available), to present and discuss the results, and plan the writing up of the work.

5. Lead the writing up of the work for publication in the CCAFS Working Paper series and also as an article to be submitted to an appropriate journal. The report and article should contain an analysis of critical gaps and uncertainties in present-day livestock modeling, together with a discussion of key research priorities for the next few years that could lead to an improvement in livestock impacts modeling in the face of climate change.

Deliverables:

Description	Type	Year	Status	Justification
Convene a small meeting to discuss the results of the intercomarison	Workshop	2014	Complete	
CCAFS Working Paper presenting an analysis of critical gaps and uncertainties in present-day livestock modeling, together with a discussion of key research priorities for the next few years that could lead to an improvement in livestock impacts modeling in the face of climate change	Books	2014	Complete	
Journal article on the above	Peer-reviewed journal articles	2014	Complete	
Presentation at a conference to present the results of the intercomparison	Workshop	2014	Complete	

Partners:

1- Commonwealth Scientific and Industrial Research Organisation (CSIRO):

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Location(s):

Global

Activity 933-2014

Incorporation of new risk modules in household models for theme-based evaluation of adaptation and mitigation studies

Status	On going	Milestone	4.2.1 2014 (3)
Start date	2013 Aug	End date	2014 Dec

Description: CCAFS has invested significant resources in household-level data collection in the last 2 years. The objective of gathering these data was to have high resolution information on livelihood activities and household management strategies for parameterizing household models for ex-ante assessment of adaptation and mitigation practices. One area identified as requiring more development was the incorporation of measures of climatic risk in the existing models, as most sites require the selection of the adaptation and mitigation options to be done under uncertainty. this project contributes to filling this gap, by developing and implementing state of the art risk management techniques in existing household models.

Status: On going. This activity delivered outputs in the form of improved tools and analyses.

Improved tools:
1. Software interfaces in R were created for extracting information automatically from the IMPACTlite databases into the IAT household modelling tool and the APSFARM household model
2. The IAT household model was modified to deal with climatic risk
3. APSIM routines were created for simulating climatic variability with Marksim for multiple households, for several semi-arid crops (millet, sorghum, coupe and groundnut); and livestock
4. The APSFARM household model was modified to run household populations instead of single households and represent model outputs as distributions of outputs (food security and income indicators) to detect differential impacts of climatic variability on different household types.

Analyses performed.
1. We used the CCAFS Burkina Faso dataset as a pilot for parameterising the IAT household modelling tool and the APSFARM tool for studying climatic variability
2. We reviewed the literature on climatic risk and proposed a framework for its evaluation and inclusion in food security and livelihoods studies.
3. We developed methodologies for studying the differential impact of climatic change and variability of households headed by male and female farmers.
4. We built a community of practice for continually develop the frameworks, the tools and the analyses for all the CCAFS sites and other datasets.

Some analyses have been published (see Herrero et al., GEC, 2014; Thornton et al., GCB, 2014) and several others have been submitted. An MSc thesis on the work was also published (Griffith

University). The coming year will see a proliferation of additional analyses on this solid basis.

Gender Component: Gender integration is a key aspect of this work. All methods, tools and analyses include a gender perspective (see, for example, Silvestri S et al., "Exploring gender differences in household food security and implications for climate change adaptation in East Africa." Tropentag 2014 Conference on Bridging the Gap between Increasing Knowledge and Decreasing Resources, Prague, 17-19 September 2014).

Objectives:
1. To incorporate elements of climatic, financial and decision-making risk in household models, for improved ex-ante assessment of adaptation and mitigation options in smallholder systems.

Deliverables:

Description	Type	Year	Status	Justification
Improved household models including risk elements developed and implemented in at least two CCAFS sites, with appropriate documentation	Platforms - Data Portals for dissemination	2014	Complete	
Software routines for porting data from the Impactlite surveys into the IAT and APSFARM household models	Data	2014	Complete	
framework and review of key impacts of climatic variability and change on agricultural systems	Peer-reviewed journal articles	2014	Complete	
Methods for linking scenarios and household models	Peer-reviewed journal articles	2014	Complete	
IAT and APSFARM models	Models (i.e. Agronomic Trials)	2014	Complete	
Abstracts and posters for several conferences	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	

Partners:

1- Commonwealth Scientific and Industrial Research Organisation (CSIRO):

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2- International Livestock Research Institute (ILRI):
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Location(s):
Global

Activity 532-2014

Case studies in at least two CCAFS sites on utilising approaches to support smallholder decision making, linking with met services and household modelling

Status	Complete	Milestone	4.2.2 2014 (1)
Start date	2012 Oct	End date	2014 Dec

Description: Farmers in Sub-Sahara Africa, operating in risky and unpredictable environments, have to make decisions with very limited information available to them. Research on farmers'€™ perceptions of climate change and variability indicate that in many communities there are perceptions, particularly regarding amounts and timing of rainfall, that are i) not generally reflected in analysed climatic data and ii) contradictory. Consequently farmers may be making decisions and implementing both short term management practices and longer term strategies that are inappropriate. Analysed historical data (from daily records made over several decades) is increasingly being made available in several countries (through work undertaken by UoR with partner institutions). At the same time a range of participatory approaches (including participatory farm management methods [Dorward et al 2003]) exist that could be adapted and used to communicate with farmers about analysed climate information in ways that enable farmers to make more informed (and therefore improved) short and longer term livelihood, farm and crop decisions. Key to this is understanding what information farmers want and need, being able to provide it in ways that are easy to understand and at the same time enable facilitate meaningful consideration of implications. Forecasts (long, medium and short) can provide further information of value to planning and decision making. Attempts to introduce these to farmers have had mixed success. With the improved understanding from the above there is scope to add some of these to the information that farmers receive in a more integrated and useful way. Preliminary fieldwork in Zimbabwe (June/July 2012) confirmed the need for and potential of research on this topic. Smallholders, working with extension staff successfully used a range of approaches in the initial steps 1-4 (steps summarised later in this document). Work is required to test the full approach at a range of locations with different characteristics (climate, agriculture, socioeconomic), draw lessons and facilitate wider implementation and scaling up. Capacity building amongst service providers, particularly extension services and NGOs that work directly with smallholders forms a necessary and important part of the project.

Status: Complete. The research aims to develop tools and approaches to support smallholder farmers in their planning and decision making. Work in 2014 included continuing to pilot and improve the Participatory Integrated Climate Services Approach (PICSA) and supporting other projects and initiatives looking to use PICSA in the scaling out of climate services. These included the Global Framework for Climate Services in Tanzania and Malawi and planning for a CCAFS Flagship two project in West Africa starting in 2015. A PICSA manual for use by field staff has been developed. The Activity was expanded in 2014 to explore the potential to develop mobile Apps to provide PICSA at greater scale to farmers and intermediary support staff and a review and scoping study was

completed.

The University of Reading is continuing to work with the National Meteorological Services in several countries, including Tanzania, Kenya, and Ghana. These interactions include capacity building of staff in methods of analysis, in developing useful information products for local users, and (in the case of Ghana) in direct involvement in new CCAFS projects in Ghana (including PICSA scaling out) in 2015. GMet has provided station data to CCAFS for the further development of tools such as MarkSim. This work is showing how small but focused activities can lead to important behavioural and organisational changes in some of the NMSs, which in time may bring about substantial changes in investment patterns and attitudes in these important partners of CCAFS.

Gender Component: The tools and approach developed in this activity specifically seek to ensure that 'options by context' are identified by farmers for their individual circumstances. Both gender and household access to resources are included in this consideration. Research into the use of the approach includes a gendered approach. Gender was an important focus in the review and scoping of the potential for the use of mobile Apps for delivery of climate services.

Objectives:
1. To improve awareness and understanding amongst smallholders of climate variability at their location and of whether there are any trends in climate that are currently evident from the information
2. To understand what climate related information farmers want and need for improved decision making (for different types of decisions)
3. To communicate information effectively and in ways that enable learning, interaction and exploration by farmers, and that facilitate short and longer term planning and decision making, and which can be scaled-up

Deliverables:

Description	Type	Year	Status	Justification
Annual report for 2013. (Literature review. Draft guidelines and lessons learnt on supporting extension staff and farmers in use of communication, decision making and planning approaches (available on web). Updated training materials and tools available on web.) By 31 March 2014	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	
Annual report for 2014. (Final version of refined training materials and tools available on web. Journal paper. Guidelines and lessons learnt on supporting extension staff and farmers in use of communication, decision making and planning approaches. Report on dissemination achieved.) By 31 January 2015	Peer-reviewed journal articles	2015	Incomplete	
Training manual for intermediary field staff to implement PICSA with small-scale farmers	Books	2014	Complete	
	Data	2014	Cancelled	

Description	Type	Year	Status	Justification
Smallholder farmer decision making - Draft review of literature and concepts	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	

Partners:

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2- University of Reading:
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Location(s):
Countries: Tanzania,
Benchmark Site: Usambara (Lushoto),

Activity 938-2014

Implementing the social learning strategy, starting to assemble the evidence base of the value of non-traditional approaches to supporting local decision making

Status	Complete	Milestone	4.2.2 2014 (1)
Start date	2011 Dec	End date	2014 Jul

Description: IIED has been a founding partner in the CCSL (Climate Change and Social Learning) Initiative of CCAFS and partners. IIED has partnered closely with IDS to help research, write and prepare key documents and blogs, helped to organise and facilitate a donors meeting, and engaged in related CCAFS meetings to develop social learning ideas and communicate on progress.

In IIED's last five-year strategy a key objective was to be a leading communicator of sustainable development issues. This includes a commitment to understanding what kind of communications methodologies are required for ensuring transformational change, particularly in the research-knowledge interface and between research communities and the many different stakeholders that we work with. The next five-year strategy, covering 2014 to 2019, is likely to be focussed on an overarching institutional objective that strengthens our commitment to prioritising action for change around particular global public goods – climate resilience and methodologies for achieving change will both fit here.

IIED jointly with other partners is helping in the implementation of the CCAFS CCSL strategy as well as in the development of CCSL guidelines in support of that strategy.

Status: Complete. The main task for this phase was the development of the Social Learning M&E Framework for use by projects participating in the CCSL Initiative. The basis for the framework was formulated at the London workshop in June, organized by IIED and attended by core CCSL team members and representatives of 15 different projects/programmes. Over two days, attendants worked together to come up with five key aspects of social learning-oriented approaches that they were happy to monitor. Afterwards, Marissa Van Epp and Ben Garside further developed the M&E Framework, building on workshop discussions and on ongoing discussions with CSIRO regarding social learning monitoring. A narrative, theory of change, and indicators for each of the (refined) areas were developed to complete the framework. The framework was published as CCAFS Working Paper 98, accompanied by a CCAFS blog post. Currently under development is a process guide explaining how to implement the framework as well as the process the CCSL Initiative hopes to follow in terms of collecting and analysing evidence and sharing learning amongst participating projects. Templates for evidence collection are also being developed.

Moreover, Ben Garside initiated peer-assistance for two participating projects from IIED, CIP Potato Park and FAS Bolsa Floresta, which are incorporating the Framework into their M&E systems.

Gender Component: Social inequality and gender considerations are key within the social learning M&E framework. Gender is not a category per se, but has been integrated as a key indicator

throughout the identified categories.

Objectives:

1. Knowledge Management – information management and knowledge sharing. Support to the CCSL knowledge environment by:

   • Producing and formatting all the current "published" documentation for print and online versions where appropriate.

   • Completing the CCSL concept note as developed in the Naivasha plan-and-writeshop.

   • Organising the body of evidence from the previous CCSL initiative work, including cataloguing all case studies and ensuring the terminology is consistent across all outputs.

   • Building the glossary of terms on the CCSL wiki for use in CGIAR institutes and with others outside the system who will be engaged in the Initiative or are interested in social learning.

   • Liaising with the managers of the CCSL online platforms to ensure all published documentation is easily available through the Sandbox and CG Space.

2. Marketing Communications and Advocacy – IIED would help to build a community of interest by developing and implementing a communications strategy to share some key messages about social learning and the programme. This work would include:

   • Developing some opportunities for blogging by ourselves or others.

   • SEO – ensuring CCSL Initiative materials are linked to key websites and relevant online platforms.

   • Hosting at least one webinar on social learning and inviting people from projects identified in the next round of the Initiative to discuss social learning – the guidelines, contextual challenges, and criteria for successful projects.

   • Newsletter updates and initiating social media conversations.

   • Support to fundraising, networking, and following up on leads as required.

   • Active engagement in the growing community behind the CCSL Initiative and active presence on the Yammer and wiki platforms.

3. Project Documentation, Development and Facilitation – depending on resourcing and timing, IIED could build on its work so far to take this project to scale. Support to this process could include:

   • Helping to draft the social learning guidelines and tool kit outlined at the Naivasha plan-and-writeshop.

   • Facilitating/hosting a social learning event to bring together potential partners to develop pairings and identify possible micro pilot projects for incubation funding. This would include both helping to develop the programme and facilitating sessions as well as presenting and managing the organisation of the meeting.

   • Potential for identifying some IIED projects and partners that could join future pilot projects in particular countries and working with those partners to explore the relevance of social learning methodologies.

   This set of activities plays to the strengths of the IIED team and opens up the possibility of integrating the social learning work further into the work of IIED. It is hoped that this project would

be able to align closely with the work of the Climate Change team and their South Asia Climate Resilience Alliance (SACRA) that is anticipated to start at the end of this year.

4. Production of CCAFS/CCSL branded material – previous budget and activities.

Deliverables:

Description	Type	Year	Status	Justification
Knowledge Management: CCSL concept note, organised body of evidence of CCSL, glossary of terms	Peer-reviewed journal articles	2014	Cancelled	
Contributing to building the Community of Practice, engagement and a communications strategy to share key social learning messages	Peer-reviewed journal articles	2015	Incomplete	
Webinar on social learning	Workshop	2014	Complete	
Social learning and sustainable development	Peer-reviewed journal articles	2014	Complete	
Monitoring and Evaluating Social Learning: A Framework for Cross-Initiative Application	Working Paper	2014	Complete	
The happy families of social learning – mapping the complex domains of learning and social change	Policy briefs - Briefing paper	2014	Complete	
Climate change social learning sandbox	Policy briefs - Briefing paper	2014	Complete	
CCAFS Climate Change and Social Learning: Phase 2 concept note	Policy briefs - Briefing paper	2014	Complete	
Innovation in smallholder farming in Africa: recent advances and recommendations: Proceedings of the International Workshop on Agricultural Innovation Systems in Africa (AISA)	Workshop	2014	Complete	

Description	Type	Year	Status	Justification
Development of the Social Learning M&E Framework - progress update Review of Social Learning Impacts for CIP-Potato Park – ANDES agreement for repatriation of native potatoes Case study: Social learning as part of fostering community-driven social programmes and environmental stewardship across the Brazilian Amazon – testing a social learning M&E framework	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	

Partners:

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Location(s):

Global

Activity 520-2014

Implementation of the data management strategy and ensure good performance and continues improvement of CCAFS Data portals.

Status	Complete	Milestone	4.2.1 2014 (3)
Start date	2012 Jan	End date	2016 Dec

Description: Theme 4.2 is collaborating with the consortium office to create a CCAFS-wide data management strategy. This will involve the creation of support tools and data portals to house the data collected by CCAFS baseline studies and other research initiatives of the program.

Status: Complete. It was a busy year of interactions with the scientists, regional program leaders and flagship leaders. There were a number of presentations and expositions of CCAFS' data management support pack to its target audience in several occasions, including the science meeting in Madrid (virtual presentation), in the Open Access meeting led by the Consortium in CIMMYT and during the Knowledge Management COP in CIP, etc. The CCAFS data managment strategy reached to external partners (E.g. Key note speaker for the UK Data Archive "Curating and Managing Research Data for Reuse" this year). A series of development took place in 2014, including the design of a deliverables module built in the Planning and Reporting Platform (P&R Platform) capable to monitor and stream our gold star deliverables to our main channels of dissemination and implementation is envisioned for 2015.

Gender Component: Not defined

Objectives:
1. Interact with scientists within CGIAR and beyond, and support them on issues related to data access and management, including the production of quality data that can be archived and published via CCAFS platforms.
2. Develop a strategy for prioritization of data and deliverables for dissemination.
3. Coordinate CCAFS Data Portals and collaborate with CCAFS staff to organize and publish databases using basic web interfaces and languages, including web-based visualization of spatial data and maps, and the design & implementation of appropriate tools to monitor data/tools usage for M&E purposes.
4. Manage a core team on data management and support CCAFS theme and regional leaders in emerging data-related needs and challenges
5. Position CCAFS as a leader in data management across the CGIAR, and interact closely with the COnsortium Office efforts on data

Deliverables:

Description	Type	Year	Status	Justification
'One-stop Shop' for our data and tools. The idea is to be able to embed an interface in our main platforms (CCAFS website included) and stream the outputs from our planning and reporting platform.	Platforms - Data Portals for dissemination	2015	Cancelled	
Revamp the Planning and Reporting Platform (P&R Platform - planning phase). Develop the CCAFS P&R Platform to be the one system that allows flagship reporting with Results-Based Management, outcome-focused, planning and reporting. P&R will cover project cycle from planning to project reporting, learning, result-based management and programmatic report generation (with some additional synthesizing input at the programmatic level).	Platforms - Data Portals for dissemination	2014	Complete	
Design a deliverables module built in the Planning and Reporting Platform (P&R Platform) capable to monitor and stream our gold star deliverables to our main channels of dissemination (Design ready in 2014 and implemented by 2015).	Platforms - Data Portals for dissemination	2014	On going	The deliverable is still going because it was planned to be designed in 2014 and implemented in 2015.

Description	Type	Year	Status	Justification
A competition as part of the COP events in Lima, which provides a cash prize to a group of information technologists who create the best climate-smart app during a fixed amount of time. The app should use CCAFS (and other) data sources which are also open data, and convert data into services for a specific audience of relevance to CCAFS Latin America mission. A panel of judges will evaluate the results and score according to the criteria set out in the guidelines. Developers must agree for CCAFS to release the app for free use after the competition.	Workshop	2014	Complete	
Redesign the metadata required in the AgTrials platform and develop the entry forms accordingly.	Platforms - Data Portals for dissemination	2014	Complete	

Partners:

1- CGIAR Consortium Office:

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Location(s):

 Global

Activity 969-2014

Increasing the demand-driven nature of existing decision support portals for national policy makers

Status	On going	Milestone	4.2.1 2014 (3)
Start date	2014 Jan	End date	2014 Dec

Description: There are many existing decision support portals available with climate change data and information, but national policy makers do not always make use of them because either the information is not what they need, they are not aware of them, etc. This activity will work with partners to connect with a group of knowledge brokers who administer the portals and with national level decision makers to try to improve the demand-driven nature of the data presented.

Status: On going. Work on this activity was limited during 2014 because of other commitments. Nevertheless, an impact evaluation was commissioned by Themes 1 and 4 and carried out during the year ("Evaluation of Data and Tools from CGIAR's Research Program on Climate Change, Agriculture, and Food Security"). The write-up of this study has several lessons for CCAFS going forward, in relation to development and maintenance of key data sets and data portals. Perhaps the key lesson is being more explicit about the "impact pathways" by which data and tools can inform national decision makers.

A small survey of national policy- and decision-makers was also undertaken in 2014, to try to gain an understanding of which portals they use for accessing climate change information. The overall purpose was to identify niches for CCAFS in this already crowded arena. The results have been summarised, and will be built on in 2015 to inform CCAFS priorities in this area.

Gender Component: Not defined

Objectives:
1. To understand the data and information needs of national policy makers in CCAFS focus countries
2. To work with climate change portal knowledge brokers to improve the demand-driven nature of existing CC portals

Deliverables:

Description	Type	Year	Status	Justification
Survey of national level policy makers	Data	2014	Complete	Other activities had higher priority during 2014, but we plan to pursue this survey relating to CC data portals, based on the experience of CCAFS and other research and development partners, and document the results.
Documentation of dialogue on how to improve the demand-driven nature of existing CC data portals	Peer-reviewed journal articles	2014	Cancelled	Other activities had higher priority during 2014, but we plan to pull together a document of "lessons learned" relating to CC data portals, based on the experience of CCAFS and other research and development partners.
The report assesses nine CCAFS tools/datasets in terms of who is using them and for what purposes, and explores whether and how the use of CCAFS data and tools has contributed to outcomes, in particular to changes in knowledge, attitude or skills, as well as potential changes in behaviour and practice among different user groups, where possible. The assessment integrates data from a desk review of program documents provided by CIAT and gleaned from other sources, an extensive review of the CCAFS website, landing pages and links, and those for each of the tools (including actual testing/use, where feasible), and perceptions from stakeholder interviews.	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	

Partners:

1- International Development Research Centre (IDRC):

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Location(s):

Global

Activity 1034-2014

The CCAFS Flagship Program 4 Trial on Results-Based Management and M&E planning for Phase 2

Status	Complete	Milestone	4.2.2 2014 (1)
Start date	2014 Jan	End date	2014 Dec

Description: Along with several other CRPs, CCAFS has been piloting a new way of doing business in 2014, revolving around the use of results--based management (RBM). Six projects were selected via a competitive call in 2013 for regional activities under Flagship Program 4, Policies and institutions for climate resilient food systems. The RBM process itself involves a shift away from a logframe approach to an impact pathway approach based on theories of change, in which pathways are defined from research and its outputs and results towards outcomes, i.e., changes in practices of the next--users of research outputs such as policy makers, development organisations, and farmers.

Status: Complete. We have trialled results-based management through the implementation of six trial projects in Flagship Program 4. In addition, a series of regional planning workshops for CCAFS Phase 2 utilised the lessons learnt from the trial implementation to develop impact pathways for CCAFS moving forward. Lessons have been documented by the trial team, as well as by the trial project participants in the regions.

Gender Component: Not defined

Objectives:

1. To pilot a new way of doing business, revolving around the use of results-based management. Six projects were selected via a competitive call in 2013 for regional activities under Flagship Program 4, Policies and institutions for climate resilient food systems. The RBM process itself will involve a shift away from a logframe approach to an impact pathway approach based on theories of change, in which we need to define pathways from research and its outputs and results towards outcomes, i.e., changes in practices of policy makers, development organisations, farmers, etc.

Deliverables:

Description	Type	Year	Status	Justification
Annual progress report on the results-based management trial to the CO	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	
A series of learning notes documenting key lessons	Policy briefs - Briefing paper	2014	Complete	
Workshop reports documenting planning workshops in all five CCAFS regions, as well as with the selected 6 regional projects.	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	
Workshop report for Kick-off Meeting of Results-based Management Trial Projects	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	

Description	Type	Year	Status	Justification
CCAFS Monitoring and Evaluation Strategy	Policy briefs - Briefing paper	2014	Complete	
Guiding principles or "propositions" on Monitoring and Evaluation in CCAFS	Policy briefs - Briefing paper	2014	Complete	
Lessons learned from the Flagship 4 Results-based management Trial	Policy briefs - Briefing paper	2014	Complete	
Lessons and Insights from the CCAFS Results-Based Management Trial. Summary from the CCAFS Flagship 4 RBM trial projects survey	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	
Learning Brief: Lessons and Insights from CCAFS Results-Based Management Trial	Policy briefs - Briefing paper	2014	Complete	
Understanding behavioural change: A guide for analysing factors influencing progress towards outcomes	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	

Description	Type	Year	Status	Justification
Lessons in Theory of Change from the Introductory Training on Theories of Change, Impact Pathways and Monitoring & Evaluation	Policy briefs - Briefing paper	2014	Complete	
Lessons in theory of change: monitoring, learning and evaluating Knowledge to Action	Policy briefs - Briefing paper	2014	Complete	
Lessons in theory of change: CCAFS Southeast Asia Research for Development Workshop	Policy briefs - Briefing paper	2014	Complete	
Lessons in theory of change: experiences from CCAFS	Policy briefs - Briefing paper	2014	Complete	

Partners:

1- International Crops Research Institute for the Semi-Arid Tropics (ICRISAT):
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4- International Food Policy Research Institute (IFPRI):
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Location(s):
Global

Activity 1035-2014

Developing research strategies and approaches around climate change governance and institutions for enhanced development outcomes

Status	Complete	Milestone	4.2.2 2014 (1)
Start date	2014 May	End date	2014 Dec

Description: The 'Policies and institutions for climate-resilient food systems' Flagship (as part of the CCAFS extension phase) aims to address adaptation and food system policies, from national up to global level. It will also address cross-scale linkages for enhanced climate governance and increased equitable investments to support climate smart food systems.

As part of this project we are planning a portfolio of research activities around governance, institutions and engagement at national up to global scale, and across scale - with key experts involved. In 2014, we are planning scoping studies, as well as an expert workshop to help set the research agenda for the coming years.

Status: Complete. In 2014, we commissioned two scoping studies that aimed at taking stock of current climate change governance and institutions research, in order to help CCAFS scope potential research priorities under Flagship Program 4 in 2015 onwards. Moreover, we held an expert meeting with over 25 participants from academia and partner organizations to help identify potential research priorities and partnerships in the coming years.

Gender Component: The aspect of social equity is key in policy formulation and implementation, as well as in considering governance and institutions research in FP4. Agenda setting is considering these elements as critical.

Objectives:
1. The overall aim of this activity is to identify a research agenda for CCAFS on governance, institutions and engagement. We aim to identify well-defined research areas where CCAFS can meaningfully contribute towards a broader global research agenda on governance. Specifically, this will be done through an open call for a desk study to scope climate change governance and institutions research areas, and through an expert meeting on developing research strategies around climate change governance and institutions.

Deliverables:

Description	Type	Year	Status	Justification
Desk study review on climate change governance and institutions research contributing towards development outcomes	Working Paper	2014	Complete	
Workshop documentation on expert meeting	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	
Desk study review on climate change governance and institutions from a political science perspective	Research report (i.e. workshop report, consultant's report, discussion paper, project report, student thesis, etc.)	2014	Complete	

Partners:

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Location(s):
  Global

2. Succinct summary of activities and deliverables by Output level.

Output: 4.2.1

Summary: (1) Regional site and baseline characterisation

During 2014, baseline data collection activities took place at new CCAFS core sites in two regions, Latin America and South-East Asia. Also, village baseline reports for the CCAFS South Asia sites were completed and published. All new region reports will be completed in the first quarter of 2015. The purpose is to allow the construction and measurement of indicators of behavioural change in relation to climate change adaptation, mitigation and risk management that can be measured in repeat visits. The goal is to assess what kinds of changes have occurred and whether these changes are helping households adapt to, and mitigate, climate change. The baselines at household, village and organisational levels are allowing CCAFS to explore gender and other social differences in target populations. The baseline data and related materials were heavily accessed by partners and others not affiliated with CCAFS through Dataverse during the year. A paper on the baselines process was published in a peer-reviewed journal, along with a Working Paper on some of the findings regarding gender. A synthesis paper of the baseline results from the three initial CCAFS regions was updated, while a more comprehensive synthesis paper from all five CCAFS regions will be written during 2015. All initial 15 sites were revisited in 2014 to verify the GPS coordinates of the households involved in the household survey. Results found a few household from each site had relocated, but most were still living in the same location. Several corrections to names were made during the process and verified GPS coordinates were collected using android mobile devices and Open Data Kit. The baseline work continues to involve a wide range of national partners in the regions, as well as several CG Centres (ILRI, ICRAF, IWMI, IRRI and ICRISAT). The backstopping provided by the University of Reading to the baselines process included moving the household survey from paper-based to mobile device interviews, updated survey tools, providing trainings to new teams, as well as supporting the baseline studies in Latin America and South-East Asia. Baseline indicator tables have been assembled for most sites, and Reading has also carried out maintenance and user support for the baseline Dataverse site.

(2) Innovative climate data and products

Activities continued in relation to downscaled climate model data for evaluating the impacts of climate change on agriculture and food systems and for assessing adaptation, mitigation and risk management options. CMIP5 climate model data is now incorporated into the stand-alone version and the Google-Earth-based version of MarkSim, a stochastic weather generator that is being used widely in the agricultural modelling community. MarkSim was also modified to output soils data from FAO's Harmonised World Soil Database, again in DSSAT format ready for applications by users. Oxford University assembled a report on the ability of the new generation of climate models to reproduce current climate in SE Asia, the object being to establish how reliable future climate and crop growth projections might be in the region. In a co-commission with Theme 1, EMBRAPA delivered a similar report for Latin America. These are companion reports to those already published for E Africa,

W Africa and S Asia (all now available on the CCAFS website). This work was complemented by activities at the University of Cape Town; CMIP3 and CMIP5 data (older and newer generations of climate models) were compared for Africa and Asia, the major result being that there are relatively few differences between the two generations of climate model output. On the one hand, this is a disappointing result, as it indicates only slow progress in the development of improved climate models. On the other, it clearly demonstrates that previous impact assessments do not need to be discarded, as the most recent assessments largely agree with the older ones. UCT also compared CORDEX regional climate model outputs with CMIP5 data, and again found little improvement (and rather more complication). UCT also undertook and wrote up case studies in different farming systems in four countries (South Africa, Zimbabwe, Malawi and Tanzania) to understand more about farmers' use of climatic information, to ascertain whether climate information can be relevant to decision making for agriculture and food security on the 1-10 year time scale. During 2015 this work will be synthesised with other ongoing work on climate information and decision making by farmers in other countries.

(3) Databases and assessment toolkits

Work continued on a range of efforts to fill key gaps that are of particular importance to climate change and food security work. Highly innovative work has continued to be done by IIASA during 2014 under the auspices of the Geo-Wiki Platform. One of the key advances has been in the field of serious gaming, which has generated an unprecedented amount of classified imagery that is available for both training and validation of global cropland products. In 2014, the game "Cropland Capture" was played by over 2,700 volunteers, who between them evaluated 165,000 images and provided more than 4.5 million ratings. As a result, a new global percentage cropland map for 2005 is available at 1 km resolution, as is a new global field size map available at 1 km resolution. A paper on the former was published in 2014 and one on the latter is being published in early 2015. Both products used crowdsourced data from Geo-Wiki for training and validation. This information is playing a crucial role in GEOGLAM, the Global Agricultural Monitoring initiative, which is strengthening the international community's capacity to produce and disseminate timely and accurate forecasts of agricultural production at national, regional and global scales.

Work was undertaken on utilising the household data collected at several CCAFS sites in activities led by ILRI (Impact-Lite: all these data are open access) in household modelling and detailed systems characterisation work. A pilot report was published by ILRI and CSIRO that contains evaluations of a range of different technologies at the household level for farms at the CCAFS site in Yatenga province in northern Burkina Faso. New developments in modelling household risk are being developed and applied, to address multiple time periods and dynamic risk issues. These types of analysis of climate-smart practices are also being linked with the regional CCAFS scenarios, which are providing local context for analyses that assess the synergies and trade-offs of different alternatives at a range of scales.

Implementation of the CCAFS data management strategy continued, with backstopping from University of Reading. Considerable progress was made on developing and using an integrated online platform (called the Planning & Reporting system or P&R) for CCAFS project planning and

reporting. Part of the system is to do with identifying key CCAFS data products and streaming them through CCAFS's channels of disseminations.

An activity funded by CCAFS under the auspices of AgMIP (Agricultural Model Intercomparison and Improvement Project) compared simulation models of dairy production to understand more about the uncertainties involved in modelling these systems. A paper on the comparison work was published. This complements broader work aimed at quantifying the uncertainties associated with climate models, global economic models, and crop models.

The quantification of scenarios in all CCAFS regions has now been completed by global impact modellers at IFPRI and IIASA. The quantified scenarios have been used in short-summary formats to successfully inform scenario-guided policy processes in all CCAFS regions. A synthesis working paper with core results was published, and working papers elaborating further results in each region are being finalized. The regional scenarios continue to be used as a platform for the exchange and application of knowledge and experience between CCAFS researchers and policy makers, the private sector, NGOs, and other societal actors.

ILRI continued leading work on defining indicators of vulnerability and adaptation in food systems, notably through undertaking a systematic review of local vulnerability to climate change in the search for a conceptually coherent framework that can be used for measurement. The working paper proposes a pragmatic approach that tracks vulnerability (and thus adaptive capacity) using a set of objective and subjective indicators relating to asset or poverty measures at the household level and governance and policy factors at the community and national levels.

Themes 1 and 4 jointly commissioned an impact study on CCAFS data and tools. The resulting report focused on nine CCAFS tools and datasets and determined who is using them and for what purposes, to explore whether CCAFS data and tools have contributed to outcomes. CCAFS's tools and datasets are perceived as being of very good quality and relevant to stakeholders, but to date solid evidence of outcomes for many of these is lacking. Several recommendations were made, including more explicit development of impact pathways for the key tools and datasets that CCAFS develops and curates, raising awareness of the existence and capabilities of CCAFS tools, and enhancing the systems that CCAFS already has in place to be able to track use of data and tools in adequate detail.

Output: 4.2.2

Summary: (1) Climate change and social learning for better development outcomes
Understanding social learning is critical for responding effectively to the challenges of climate change and food security and for contributing more effectively towards the achievement of development outcomes, especially in the context of adaptive management. The Climate Change and Social Learning (CCSL) Initiative, launched in 2012, continued to develop, including a broadening of the base of the CCSL sandbox, an online community of practice, which saw considerable activity during 2014. The CCAFS strategy on social learning and climate change decision-making continues to guide the CCSL work, and it is currently being implemented through partners that include IIED, ILRI, IDS, IDRC,

and Euforic Services. A major focus of the CCSL work during 2014 was the construction of a framework for monitoring and evaluating social learning that can be applied across a wide range of initiatives. The purpose of the work was set out in a paper published in Nature Climate Change by Kristjanson and others, which argued that an evidence base is needed to document the conditions under which SL can help in achieving development outcomes. The framework itself has been published as a working paper, following a workshop with key partners earlier in the year. The M&E framework is being applied in a variety of case studies across a range of different scales by several different partners, including CARIAA and CG centres such as ILRI, CIAT and IITA. The development and application of this M&E framework is described as Case Study 1.   Work continued through the University of Reading on PICSA (Participatory Integrated Climate Services for Agriculture) in Tanzania and Malawi, which actively involves and trains farmers to better use and create locally appropriate climate information. This is an innovative approach to support smallholder decision-making and planning through the use of climate and weather information, and involves the close engagement and capacity strengthening of meteorological and extension services staff, as well as NGOs and smallholder farmers themselves. The activity continues to inform project planning of several key NGO and donor organisations. The lessons from PICSA are contributing to the CCSL initiative and to the evidence base of social learning. PICSA is one of several initiatives that are contributing to a better understanding of farmers' decision-making spaces, and some of these will be synthesised in 2015. The University of Reading is continuing to work with the National Meteorological Services in several countries, including Tanzania, Kenya, and Ghana. These interactions include capacity building of staff in methods of analysis, in developing useful information products for local users, and (in the case of Ghana) in direct involvement in new CCAFS projects in Ghana (including PICSA scaling out) in 2015. GMet has provided station data to CCAFS for the further development of tools such as MarkSim. This work is showing how small but focused activities can lead to important behavioural and organisational changes in some of the NMSs, which in time may bring about substantial changes in investment patterns and attitudes in these important partners of CCAFS.

(2) Institutional learning and governance

Major assistance was provided during the year to the six regional projects under Flagship 4 that constituted a trial of Results-Based Management (RBM). A series of workshops was held to assist project leaders plan activities, develop impact pathways and theories of change, and put in place feasible plans for monitoring progress towards outcome targets. Assistance was also provided to other themes and regions in CCAFS on helping to define a small set of outcome targets for 2019 and 2025 that all projects can work towards. A considerable number of learning briefs and other publications were produced that document the processes undertaken for both the RBM trial projects and for setting in place a relatively "light" M&E system for all projects, flagships and regions in CCAFS. These documents are available through the CCAFS website and through the CCSL and RBM trial wikis. A short report on the one-year RBM trial was submitted to the Consortium Office in December, containing the key lessons learnt in the process so far.

Understanding what roles institutions and governance arrangements play for climate-resilient food systems and how related policies and plans are formulated and implemented is emerging as a key

research area. During 2014, we undertook a stock-take of research niches, published as two working papers, which then fed into a workshop with key players in the area. A research portfolio has been developed to identify the processes, capacities and institutional arrangements needed to facilitate successful contribution of research outputs to development outcomes (such as the sustainable up-scaling of climate smart technologies) and how these conditions can be developed and strengthened at different scales. The work is described in more detail as a case study on inter-centre collaboration and policy engagement (see Case Study 2).

3. Communications.

Media Campaigns:

A sign of things to come? Examining four major climate-related disasters, 2010-2013, and their impacts on food security. A preliminary study for Oxfam's GROW Campaign by Christopher Coghlan, Maliha Muzammil, John Ingram, Joost Vervoort, Friederike Otti and Rachel James http://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/rr-eci-a-sign-of-things-to-come-190914-en.pdf

Blogs:

Want sustainable development? Then it's time to get social, by Patti Kristjanson and Cecilia Schubert. Uploaded: January 8 2014. http://ccafs.cgiar.org/research-highlight/want-sustainable-development-then-it%E2%80%99s-time-get-social. Views: 1,073

Charting the agricultural land of South America, by Navin Ramankutty. Uploaded: January 20 2014. http://ccafs.cgiar.org/blog/charting-agricultural-land-south-america. Views: 1,570 views

Hot out of the oven! Fresh data from CCAFS-Climate, by Caity Peterson and Carlos Navarro. Uploaded: January 27 2014. http://ccafs.cgiar.org/blog/hot-out-oven-fresh-data-ccafs-climate. Views: 1,026 views

New updates to MarkSimGCM weather generator, by Peter Jones. Uploaded: January 27 2014. http://ccafs.cgiar.org/blog/new-updates-marksimgcm-weather-generator. Views: 250

Trade-offs within agricultural systems: analysing what we know and how to move forward, by Kate Langford. Uploaded: February 20 2014. http://ccafs.cgiar.org/blog/trade-offs-within-agricultural-systems-analysing-what-we-know-and-how-move-forward. Views: 183

New paper explores the wild card of decadal variability when simulating future climate scenarios. By Arthur Greene and Cecilia Schubert. Uploaded: February 25 2014. http://ccafs.cgiar.org/blog/new-paper-explores-wild-card-decadal-variability-when-simulating-future-climate-scenarios. Views: 165

Zooming in, zooming out: exploring Kenya's agricultural futures from farm to regional level, by Joost Vervoort (ed. Cecilia Schubert). Uploaded: February 28 2014. http://ccafs.cgiar.org/blog/zooming-zooming-out-exploring-kenyas-agricultural-futures-farm-regional-level. Views: 230

Maasai filmmakers win award for shooting their climate reality, by Cecilia Schubert. Uploaded: March 14 2014. http://ccafs.cgiar.org/blog/maasai-filmmakers-win-award-shooting-their-climate-reality. Views: 440

ImpactLite survey tool improves understanding of on-farm reality, by Dorine Odongo (ed Cecilia Schubert). Uploaded: March 18 2014. http://ccafs.cgiar.org/blog/impactlite-survey-tool-improves-understanding-farm-reality. Views: 313

Paving the way for social learning in the climate change context, by Marissa van Epp (ed. Cecilia Schubert). Uploaded: March 19 2014. http://ccafs.cgiar.org/blog/paving-way-social-learning-climate-change-context. Views: 266

Agriculture and climate research meet the high-tech world in easy-to-use online Data Kit, by Cecilia Schubert and Dave Mills. Uploaded: March 25 2014. http://ccafs.cgiar.org/blog/agriculture-and-climate-research-meet-high-tech-world-online-data-kit. Views: 516

How do we best create long-term impact that matters to smallholder farmers? by Cecilia Schubert. Uploaded: April 7 2014. http://ccafs.cgiar.org/blog/how-do-we-best-create-long-term-impact-matters-smallholder-farmers. Views: 550

Making the case: why social learning is valuable for climate change decision-making, by Cecilia Schubert (ELDIS Climate Blog). Uploaded: April 15 2014. http://community.eldis.org/eldisparis/.59ca98f3/.5bdc07d4. Views: N/A

New tool simulates how climate change will affect our rangelands, by Cecilia Schubert. Uploaded: April 22 2014. http://ccafs.cgiar.org/blog/new-tool-simulates-how-climate-change-will-affect-our-rangelands. Views: 343

Searching for the best climate adaptation options for mixed crop and livestock farmers, by Cecilia Schubert. Uploaded: May 5 2014. http://ccafs.cgiar.org/research-highlight/searching-best-climate-adaptation-options-mixed-crop-and-livestock-farmers. Views: 480

What are the long-term effects from flash floods and heat waves on agriculture? By Cecilia Schubert. Uploaded: June 18 2014. http://ccafs.cgiar.org/research-highlight/what-are-long-term-effects-flash-floods-and-heat-waves-agriculture. Views: 1,203

Grand greenhouse plans keep youths farming for a better future. By Cecilia Schubert. Uploaded: July 9 2014. http://ccafs.cgiar.org/blog/grand-greenhouse-plans-get-youths-farming-better-future. Views: 420

Grandma Peris Owiti and her powerful climate-smart plants. By Cecilia Schubert. Uploaded: July 11 2014. http://ccafs.cgiar.org/blog/grandma-peris-owiti-and-her-powerful-plants. Views: 255

Hybrid seeds and super goats: meet Kenya's future farmers. By Cecilia Schubert. Uploaded: July 16 2014. http://ccafs.cgiar.org/blog/hybrid-seeds-and-super-goats-meet-kenya%E2%80%99s-future-

farmers. Views: 225

Photo-story: Kenya's climate-smart farms through a lens. By Cecilia Schubert. Uploaded: July 18 2014. http://ccafs.cgiar.org/blog/photo-story-kenyas-climate-smart-farms-through-lens. Views: 230

Household level models help choose adaptation options, by Mark van Wijk. Uploaded: July 18 2014. http://ccafs.cgiar.org/blog/household-level-models-help-choose-adaptation-options. Views: 256

Study reveals major gender differences in access to fertile land and agriculture support in Africa, by Cecilia Schubert. Uploaded: September 15 2014. http://ccafs.cgiar.org/blog/study-reveals-major-gender-differences-access-fertile-land-and-agriculture-support-africa. Views: 540

A look at how a changing climate will hit South and Central America, by Cecilia Schubert. Uploaded: September 5 2014. http://ccafs.cgiar.org/research-highlight/look-how-changing-climate-will-hit-south-and-central-america. Views: 710

Can social learning change the way we do research for development? By Cecilia Schubert, Chris Jost, Wiebke Förch and Joost Vervoort. Uploded: September 10 2014. http://dialogues.cgiar.org/blog/changing-the-way-we-do-research-for-development/. Views: N/A

Putting policies to the test: scenarios on food security, environments and adaptation, by Elisabeth van De Grift and Joost Vervoort. October 3 2014. http://ccafs.cgiar.org/blog/putting-policies-test-scenarios-food-security-environments-and-adaptation. Views: 235

Using social learning approaches to restore depleted water catchment in Uganda, by Alex Zizinga and Cecilia Schubert. Uploaded: October 16 2014. http://ccafs.cgiar.org/blog/using-social-learning-approaches-restore-depleted-water-catchment-uganda. Views: 142

How Uganda's insecure land tenure system is affecting climate adaptation work, by Juliet Katusiime and Cecilia Schubert. Uploaded: October 17 2014. http://ccafs.cgiar.org/blog/how-ugandas-insecure-land-tenure-system-affecting-climate-adaptation-work. Views: 285

What role do institutions and governance structures play for climate-resilient food systems? Cecilia Schubert and Carl Jackson. Uploaded: October 9 2014. http://ccafs.cgiar.org/blog/what-role-do-institutions-and-governance-structures-play-climate-resilient-food-systems. Views: 310

Agriculture for development: challenges under climate change and way forward by Cecilia Schubert. October 9 2014. http://ccafs.cgiar.org/blog/agriculture-development-challenges-under-climate-change-and-way-forward. Views: 430

How can sustainable intensification make farming climate-smart? By Jerome Bossuet. Uploaded:

October 16 2014. http://ccafs.cgiar.org/blog/how-can-sustainable-intensification-make-farming-climate-smart. Views: 460

Intelligent ideas: scenarios to manage water as climate changes in Guatemala. By Moushumi Chaudhury. Uploaded: October 27 2014. http://ccafs.cgiar.org/blog/intelligent-ideas-scenarios-manage-water-climate-changes-guatemala. Views: 200

Back to baselines: sharing lessons learned from measuring change by Cecilia Schubert. Uploaded: November 26 2014. http://ccafs.cgiar.org/blog/back-baselines-sharing-lessons-learned-measuring-change. Views: 176

What does the future hold for Bangladesh? Modeling scenarios for better climate policies. By Cecilia Schubert. Uploaded: December 11 2014. http://ccafs.cgiar.org/blog/what-does-future-hold-bangladesh-modeling-scenarios-better-climate-policies. Views: 273

Positioning genetic resources for food and agriculture in the climate change agenda by Linda Collette. Uploaded: December 12 2014. http://ccafs.cgiar.org/blog/positioning-genetic-resources-food-and-agriculture-climate-change-agenda. Views: 160

Helping Honduras build a more robust climate adaptation strategy for the agriculture sector by Cecilia Schubert. Uploaded: December 15 2014. http://ccafs.cgiar.org/blog/helping-honduras-build-more-robust-climate-adaptation-strategy-agriculture-sector. Views: 160

Andean countries join forces to strengthen policies in the face of future scenarios by Elisabeth van De Grift and Joost Vervoort. Uploaded: December 19 2014. http://ccafs.cgiar.org/blog/andean-countries-join-forces-strengthen-policies-face-future-scenarios. Views: released late December

New capacity to produce and communicate climate information services built in Tanzania by Graham Clarkson, Peter Dorward, Harneet Kaur, Arame Tall. Uploaded: December 23 2014. http://ccafs.cgiar.org/blog/new-capacity-produce-and-communicate-climate-information-services-built-tanzania. Views: Released late December

How to best support farmers with useful climate information services by Cecilia Schubert. Uploaded 8 January 2015. http://ccafs.cgiar.org/blog/how-best-support-farmers-useful-climate-information-services. Views: Released early Jan 2015

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http://ccafs-fp4-rbm-m-e-trial.wikispaces.com/

http://ccsl.wikispaces.com/

http://ccafs-fp4-rbm-m-e-trial.wikispaces.com/GI-Workshop-Brussels-Sep2014

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- Social media campaign around: Want sustainable development? Then it's time to get social, by Patti Kristjanson and Cecilia Schubert. Uploaded: January 8 2014. http://ccafs.cgiar.org/research-highlight/want-sustainable-development-then-it%E2%80%99s-time-get-social

- Social media campaign around: Influencing change: What matters for farmers' ability to adapt to climate change? Cecilia Schubert. Uploaded on February 18 2014. http://ccafs.cgiar.org/research-highlight/influencing-change-what-matters-farmers-ability-adapt-climate-change

- Social media campaign around: What are the long-term effects from flash floods and heat waves on agriculture? By Cecilia Schubert. Uploaded: June 18 2014. http://ccafs.cgiar.org/research-highlight/what-are-long-term-effects-flash-floods-and-heat-waves-agriculture

- Social media campaign around: A look at how a changing climate will hit South and Central America, by Cecilia Schubert. Uploaded: September 5 2014. http://ccafs.cgiar.org/research-highlight/look-how-changing-climate-will-hit-south-and-central-america

- Social media campaign around: Agriculture for development: challenges under climate change and way forward by Cecilia Schubert. October 9 2014. http://ccafs.cgiar.org/blog/agriculture-development-challenges-under-climate-change-and-way-forward

- Social media campaign around PICSA project: How to best support farmers with useful climate information services by Cecilia Schubert. Uploaded 8 January 2015. http://ccafs.cgiar.org/blog/how-best-support-farmers-useful-climate-information-services

Newsletters:

IIASA newsletter - From Story To Science, on scenarios quantification, by Amanda Palazzo: http://www.iiasa.ac.at/web/home/resources/mediacenter/FeatureArticles/w14-science-story.html

Events:

Workshop on Evidence Gathering for the Climate Change and Social Learning community. http://ccafs.cgiar.org/workshop-evidence-gathering-climate-change-and-social-learning-community

Governance Workshop: Brussels Workshop on Governance and Institutions Across Scales in Climate Resilient Food Systems. http://ccafs-fp4-rbm-m-e-trial.wikispaces.com/GI-Workshop-Brussels-Sep2014

Scenario-guided planning for Climate Smart Agriculture workshop. http://ccafs.cgiar.org/scenario-guided-planning-climate-smart-agriculture-workshop

Introductory Training on Theories of Change, Impact Pathways and Monitoring and Evaluation. http://ccafs.cgiar.org/introductory-training-theories-change-impact-pathways-and-monitoring-and-evaluation

Workshop on scenario-guided policy analysis for development, food security and environment in South East Asia. http://ccafs.cgiar.org/workshop-scenario-guided-policy-analysis-development-food-security-and-environment-south-east-asia

Workshop: Context specific scenario-guided policy analysis for development, food security and environment in the Andean region. http://ccafs.cgiar.org/workshop-context-specific-scenario-guided-policy-analysis-development-food-security-and-environment

Community Based Adaptation and Resilience in East and Southern Africa's Drylands (supported): http://ccafs.cgiar.org/community-based-adaptation-and-resilience-east-and-southern-africa%E2%80%99s-drylands

Regional Planning Workshops for Flagships, Partners and CCAFS Regions: http://ccafs-ip-toc-cd.wikispaces.com/Regional+Planning+Workshop+Series -
East Africa (EA) regional planning workshop 2014, Nov, 17-19.
West Africa (WA) regional planning workshop 2014, Nov, 12-14
South East Asia (SEA) regional planning workshop 2014, Oct, 20-22
South Asia (SA) regional planning workshop 2014, Oct, 15-17
Latin America (LAM) regional planning workshop 2014, Sept, 16-19
12-14 Nov 2014 UNEP WCMC/CCAFS workshop on scenario-guided policy analysis in Colombia, Bolivia, Ecuador, Peru (Lima, Peru)
20-22 Oct 2014 – UNEP WCMC/CCAFS workshop on scenario-guided policy analysis in Cambodia, Laos, Vietnam (Phnom Penh, Cambodia)
24-25 Sept 2014 – World Resources Institute/CCAFS workshop on scenario-guided priority setting in the Trifinio region (Honduras, El Salvador, Guatemala) (Esquipales, Guatemala
22-23 Sept 2014 – CCAFS workshop with the Honduran Secretariat for Agriculture and Livestock to help design the GRAC and ACC plan through scenarios (Choluteca, Honduras)
12-14 Aug 2014 – CCAFS/ICCCAD workshop with the Bangladesh General Economics Division of the Planning Commission to help formulate the 7th 5 year socio-economic development plan (Dhaka, Bangladesh)
24-26 Jun 2014 – UNEP WCMC/CCAFS workshop on scenario-guided policy analysis in Uganda, Rwanda, Burundi (Entebbe, Uganda)
8-10 May 2014 – FAO/CCAFS workshop for investment proposals in Vietnam (Hanoi, Vietnam)
14-17 April 2014 – CCAFS workshop on scenario-guided multi-level policy proposals in Ghana (Accra, Ghana)
2-4 April 2014 ASEAN workshop on Water, Food and Energy: using scenarios to set ASEAN priorities (Phnom Penh, Cambodia)
Semi-plenary: Resilience in the Anthropocene at Earth System Governance, Norwich, 1-3 July 2014, led by Joost Vervoort http://norwich2014.earthsystemgovernance.org/wp-content/uploads/2014/06/ESG-Conference-Programme_Final2_compressed_Jun20.pdf

Panel session "Challenges to scenario-guided governance of food systems under climate change" by Joost vervoort at ESG in Norwich, 1-3 July 2014 http://norwich2014.earthsystemgovernance.org/wp-content/uploads/2014/06/NC14-panels-9.pdf

Panel session Scenario-guided adaptive action on food security under climate change" at Resilience 2014, 4 to 8 July, Montpelier, by Joost Vervoort
http://resilience2014.sciencesconf.org/25418

Videos and other Multimedia:
Video: Andean countries join forces to strengthen policies in the face of future scenarios. Uploaded: Jan 2015 but is a 2014 output. https://www.youtube.com/watch?v=EQkIWRa9zkM. Views: 55

Video: Scenarios on food security, environments and adaptation in the Great Lakes region, Uganda. Uploaded September 18 2014. https://www.youtube.com/watch?v=VgGlUFz3oFY Views: 138

Video: Explorando escenarios socioeconómicos bajo el cambio climático en Centroamérica. Uploaded May 27 2014. https://www.youtube.com/watch?v=cXPGlc1lrww Views: 232

Video: Fitomejoramiento de semillas de fríjol en Honduras. Uploaded: May 26 2014. https://www.youtube.com/watch?v=i2P4Z3-z9PM Views: 419

Video: Explorando escenarios socioeconómicos bajo el cambio climático en los países Andinos. Uploaded: May 26 2014. https://www.youtube.com/watch?v=JyzKY2dbR4I Views: 280

- Photos: Social learning evidence gathering workshop June. https://www.flickr.com/photos/cgiarclimate/sets/72157645219457054/ Views: 340
- Photos: Workshop on Governance & Institutions Across Scales in Climate Resilient Food Systems. https://www.flickr.com/photos/cgiarclimate/sets/72157647214840350/ Views: 164
- Photos: Visit to Ikowa village in Tanzania (PICSA project): https://www.flickr.com/photos/cgiarclimate/sets/72157646599215973/ Views: 90
- Photos: Visit to Makoja village in Tanzania (PICSA project): https://www.flickr.com/photos/cgiarclimate/sets/72157648520671998/ Views: 855
- Photos: Visit to villages outside of Dodoma, Tanzania (PICSA project): https://www.flickr.com/photos/cgiarclimate/sets/72157648521283830/ Views: 261
- Photos: Multi-Level Integrated Adaptation Governance Workshop - Accra, Ghana. Scenario-activities. https://www.flickr.com/photos/cgiarclimate/sets/72157644448992491/ Views: 130
- Photos: Visit to the Lower Kamula Youth Group and their greenhouse in Kenya (visit to EA CSV). https://www.flickr.com/photos/cgiarclimate/sets/72157644891522514/ Views: 352
- Photos: Visit to climate smart farm sites in Western Kenya. (visit to EA CSV). https://www.flickr.com/photos/cgiarclimate/sets/72157644838868136/ Views: 442
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4. Case studies.

Case Study #1

Title: Building an evidence base for social learning: an M&E framework for cross-initiative application

Author: CCSL team

Type: Successful communications; Inter-center collaboration; Innovative non-research partnerships;

Project Description:

Climate change adaptation and mitigation will depend on individuals', communities' and agencies' willingness to collectively address issues that cannot be addressed by any one individual or household. Successful development outcomes depend on coordinated actions from decision makers at different levels: local, national, regional and global. The challenge is less to determine a single solution and more to chart a course navigating many perspectives, and to co-create new knowledge drawing on the many voices and 'knowledges' of different stakeholders.

CCAFS has been working with IDS, IIED, ILRI, CSIRO and IDRC to see how social learning-oriented approaches might offer strategies for co-creating knowledge in this context. There have been plenty of projects and initiatives that have failed to maximize impact and transformational change by relying on a top down, single loop, linear approach and not following through with more participatory forms of exchange. There is a growing body of work demonstrating how social learning has worked in other contexts—CCAFS aims to collate evidence on the effectiveness of social learning in agricultural research and development work.

While social learning approaches are increasingly being used in development research, there is still a lack of robust evidence on the best methods for bringing about social learning, and in what contexts it contributes to achieving development targets. The Climate Change and Social Learning (CCSL) Initiative was established in 2012 and aims to better understand and tap the potential of social learning for research on climate change, agriculture and food security.

Introduction / objectives:

CCSL is partnering with other projects to gather evidence on how social learning approaches to research contribute to development outcomes. The aim is to systematically collect evidence, analyse results and share learning on when and how organisations may want to adopt this approach in the context of adaptation and food security.

Project Results:

A 2-day workshop in June 2014, convened by IIED, brought together 15 projects interested in or already using a social learning-oriented approach to begin developing an M&E framework for cross-initiative application. The framework, which contains a theory of change and 30 key indicators spread across 4 monitoring areas, was published in January 2015 as CCAFS Working Paper 98. The four projects above have committed to either retrospectively review or monitor going forward their activities, outputs and outcomes through the lens of social learning, using the framework. CCSL has also started to provide peer assistance for these projects, via on-site workshop attendance as well as

virtual support.

• Bolsa Floresta is undertaking a review of its activities as part of a pre-existing process developed with IADB. This should result in specific learning and actions based on that learning for the next phase of work.

• The Potato Park has built the CCSL M&E Framework into a workshop-based review of learning and participatory processes designed to engage Andean farmers and policymakers.

• The Research for Development Alliance is incorporating the CCSL M&E Framework into the next phase of projects. There is also potential to jointly develop new proposals for funding from donors with CSIRO.

• The CCSL Initiative has also leveraged support from IDRC and DFID through CARIAA. One or more CARIAA consortia will incorporate the CCSL M&E Framework into their overall M&E systems, which are currently under development.

Partners:

As noted above, the CCSL Initiative has four primary implementing partners in its current phase: The International Institute for Environment and Development (IIED) in the UK, the Commonwealth Scientific and Industrial Research Organization (CSIRO) in Australia, the International Development Research Center (IDRC) in Canada, and the International Livestock Research Institute (ILRI) in Kenya. The Initiative has also enlisted other projects to take part in M&E of social learning in order to build the evidence base: Bolsa Floresta, and Potato Park (details below). Additional partners for this phase are currently being recruited. Additionally, a "Sandbox" consisting of a wiki page and Yammer online social network is being used as a learning platform and a home for the growing social learning community of practice that the project has built. Specific opportunities for engagement with CCSL and sharing learning have been advertised via the Yammer.

CCSL projects for evidence base building:

1. IIED-Fundação Amazonas Sustentável Bolsa Floresta in Brazil aims to reward and improve quality of life for traditional people for the maintenance of environmental services provided by tropical forests and reducing deforestation.

2. IIED-International Potato Center Potato Park consists of five communities in Peru working with scientists on characterizing and monitoring potato diversity.

3. Research Development Alliance between CSIRO and Australia's Department for Foreign Affairs and Trade aims to better respond to the relationship between poverty and environment

4. The CARIAA Adaptation at Scale in Semi-Arid Regions and Himalayan Adaptation, Water and Resilience consortia are participating in CCSL.

Links / sources for further information:

- The CCSL Sandbox, consisting of the CCSL Initiative wiki page (http://ccsl.wikispaces.com/) and CCSL Yammer group (https://www.yammer.com/ccsl/)
- The CCSL Framework & Toolkit (http://ccsl.wikispaces.com/CCSL+Framework+%26+Toolkit)
- Case Study Database on CGSpace (https://cgspace.cgiar.org/handle/10568/36024)
- Access to all CCSL publications, including learning briefs and working papers (https://cgspace.cgiar.org/handle/10568/3530/browse?value=SOCIAL+LEARNING&type=ccafsubject)

- IIED-Fundação Amazonas Sustentável Bolsa Floresta in Brazil http://fas-amazonas.org/programa-bolsa-floresta/?lang=en
- IIED-International Potato Center Potato Park http://www.iied.org/return-potatoes-cip-andean-farmers-proves-critical-for-climate-adaptation
- Research Development Alliance http://www.csiro.au/Outcomes/Climate/Reducing-GHG/CSIRO-DFAT-Research-for-Development-Alliance.aspx
- CARIAA http://www.idrc.ca/EN/Programs/Agriculture_and_the_Environment/CARIAA/Pages/default.aspx

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- Blog: Which factors are key for successful social learning, by Cecilia Schubert. From CCSL workshop in June. Uploaded: 2 July 2014. http://ccafs.cgiar.org/blog/which-factors-are-key-successful-social-learning Views: 285
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- Blog: Paving the way for social learning in the climate change context, by Marissa van Epp (ed. Cecilia Schubert). Uploaded: 19 March 2014. http://ccafs.cgiar.org/blog/paving-way-social-learning-climate-change-context Views: 266
cross-posted to IIED site: Paving the way for social learning in the climate change context. http://www.iied.org/paving-way-for-social-learning-climate-change-context Views: 216
- Blog: Want sustainable development? Then it's time to get social, by Cecilia Schubert and Patti Kristjanson. Uploaded: January 8, 2014. http://ccafs.cgiar.org/research-highlight/want-sustainable-development-then-it%E2%80%99s-time-get-social Views: 1,073

Case Study #2

Title: Developing research priorities for climate change governance and institutions in Flagship 4

Author: Theme 4.2

Type: Inter-center collaboration; Policy engagement;

Project Description:

Understanding what roles institutions and governance arrangements play for climate-resilient food systems and how related policies and plans are formulated and implemented has emerged as a key research field for the CCAFS Flagship Program "Policies and Institutions for Climate-Resilient Food Systems." In fact, how governance and institutions, from national to global, govern food systems in the context of climate change has been under-explored within agricultural research for development.

This project seeks to analyse and synthesise the conditions of supportive enabling environments and governance mechanisms to make recommendations for processes, capacities and institutional arrangements needed to facilitate successful contribution of research outputs to development outcomes, e.g. the sustainable up-scaling of climate smart technologies and how these conditions can be developed and strengthened at different scales. Firstly, the results will feed into science-policy dialogues and stakeholder platforms and inform national planning processes in selected CCAFS target countries to influence national institutions towards creating more effective enabling environments for up-scaling. Secondly, we will identify effective mechanisms and institutional arrangements to successfully engage the private sector as a key actor for up-scaling climate smart technologies. Thirdly, we will seek to influence institutional investment of international organisations and the private sector into up-scaling by providing evidence as to when, where and under what conditions up-scaling is likely to be successful and sustainable.

We are contextualising institutions and governance broadly, to include any structures, mechanisms, formal or informal rules that govern social interactions and individual behaviour in 'institutions'; and formal and informal processes and mechanisms contributing to frameworks, rules and actions that produce, maintain and regulate a particular system in 'governance'.

Introduction / objectives:

The aim was to develop a research portfolio around governance and institutions from national to global and across scales moving into 2015. In particular:
- Identifying global governance research topics, tools and approaches in the context of climate change for the next five years;
- Developing research areas where CCAFS can meaningfully contribute toward a broader global research agenda on governance and institutions, while building on its strengths;
- Identifying potential development outcomes that might be expected in medium term; contributing to the CCAFS impact pathway;
- Developing new partnerships with key institutions engaged in this agenda.

Project Results:

The project to date has produced two working papers. The first describes political factors that are likely to be important in shaping the governance of climate change adaptation and food systems, drawing on concepts and methods of comparative politics. The second reports on a systematic review approach to identifying key trends in adaptation governance at the supranational level.

A workshop brought together researchers from different disciplines to develop research strategies around climate change governance and institutions for the next five years. The workshop's aim was to explore what role CCAFS and the development research community can play in creating a better understanding of the linkages between governance, institutions and climate-resilient food systems. Opportunities identified:
- The role of non-traditional actors, including private sector, think tanks, social movements, and military, in food system governance.
- How power is exercised at climate negotiations and elsewhere, by different actors through discourses and framings.
- Moving beyond incremental adaptation towards transformation, and finding the required governance and institutional shifts.
- Effective governance mechanisms, indicators and cross-scale linkages for climate resilient food systems.

The workshop formed interest groups that explored the research questions, processes, methods, and partnerships that CCAFS could use to tackle the mentioned research areas. Key partners developed concept notes on above topics that will receive seed funding over the coming months. Centre-led projects are analysing the science-policy-practice interface in climate change adaptation in East and West Africa (ILRI), providing global policy support for biologically diverse, climate resilient agriculture (Bioversity), and macro-scale governance and institutions analyses through three country case studies (IFPRI).

Partners:
IISD
LSE
IDS
IFPRI
U Indiana
U Pretoria
Bioversity
ILRI
U Osnabrueck

Links / sources for further information:
Bizikova L, Echeverría D, Hammill A. 2014. Systematic review approach to identifying key trends in adaptation governance at the supranational level. CCAFS Working Paper no. 93. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

Purdon M 2014. The Comparative Turn in Climate Change Adaptation and Food Security Governance Research. CCAFS Working Paper no. 92. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). https://cgspace.cgiar.org/handle/10568/51751 Uploaded: 1 December 2014. Downloads: 636

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- Presentation: What's CCAFS? And why governance? by Sonja Vermeulen. http://www.slideshare.net/cgiarclimate/whats-ccafs-and-why-governance Uploaded: 9 Sept. 2014. Views:
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Blog: What role do institutions and governance structures play for climate-resilient food systems?, by Cecilia Schubert and Carl Jackson. Uploaded: 9 October 2014. http://ccafs.cgiar.org/blog/what-role-do-institutions-and-governance-structures-play-climate-resilient-food-systems Views: 310
Blog: Comparative politics role in studying climate adaptation and food system governance, by Mark Purdon around his Working Paper. Uploaded: 3 February 2015. http://ccafs.cgiar.org/blog/comparative-politics-role-studying-climate-adaptation-and-food-system-governance Views: 152

Case Study #3

Title: Moving a National Meteorological Service to centre stage
Author: Statistical Services Centre, Reading
Type: Innovative non-research partnerships; Capacity enhancement;

Project Description:

This project piloted a multi-partner integrated approach of capacity building, mentoring, and networking to improve the capacity of National Meteorological Services to participate and contribute to efforts to tackle information challenges brought about by climate change.

National Meteorological Services (NMSs) are present in every country and have so far played a minor role to multi-partner efforts to understand and contribute to challenges that climate change brings. NMSs are charged with the task of monitoring weather data and provide services of short/medium term weather forecasts. They are the guardians of the historical climatic records in each country. Their role in providing services that help tackle the uncertainty and risks associated with climate change is uncontroversial but the challenge of getting them involved beyond their traditional role is not negligible. This case study has explored how to enable NMSs to be better and more effective partners for CCAFS activities. It shows how it is possible to involve MNSs more fully, add value to the information they collect, and provide new and useful information services to farmers. This is a step forward in which everyone would benefit.

Introduction / objectives:

NMSs were regarded as unresponsive partners outside their "comfort zone", interested mainly in selling historical climatic records. While common it's not totally true and can be changed if their ability to provide information improves. This project addressed: development of NMSs capacity to manage/process their historical data and for the provision of more informative seasonal forecasts. This enables them to support intermediaries who work directly with farmers. The second component emphasises a decentralised approach through which staff at individual/district stations develop skills to partner with those local agents who work directly with farmers. This requires training of staff at these stations.

Project Results:

In 2013, six staff from Ghana took the e-learning course called e-SIAC (Statistics in Applied Climatology) funded by WMO. Through CCAFS support Roger Stern followed the e-learning course with face-to-face training. Mentoring lead to continued collaboration between GMet and AIMS Ghana. Outputs included supplying developers of MARKSIM with daily data on rainfall, max and min temperatures and sunshine hours for all 22 synoptic stations in Ghana. It included initial work on merging station data with satellite estimates of rainfall for part of Northern Ghana. This work and training produced "reference reports" for each station analysed that will now be displayed in respective stations. These reports made use of a new suite of R programs to empower NMSs to engage more in activities for which the analysis of their historical data is needed.

In November 2014, PICSA (Participatory Integrated Climate Services for Agriculture) was challenged

to scale out its activities in FP2. This will focus on Northern Ghana, given the progress by GMet and AIMS Ghana, plus the fact that 15 more staff from GMet were being trained in the next e-SIAC course. A fundamental step is complete checking of data from all 71 stations. This is not just checking of the data in the database but also checks of paper archive and stations themselves, where there are currently gaps in the record. In addition IRI has USAID funds to install its ENACTS system in Ghana. ENACTS combines station data with the satellite estimates of rainfall and temperatures. The results depend partly on quality of station data, and checks that are being made will result in best possible data, at least for the North.

With TMA (Tanzania Meteorolocal Agency) emphasis was on training of staff through e-learning, with funds provided by WMO. Over 100 people have completed the training. With PICSA work staff were engaged in the process of generating and interpreting climate information products, from historical data, with intermediaries. That pilot is expanding into five districts in 2015, through GFCS (Global Framework for Climate Services). There is potential for this type of engagement to become common practice if TMA and other organisations manage to maintain the energy generated by the CCAFS case.

The support described in this case study has enabled respective NMSs to expand their original "comfort zone" of short term/seasonal forecasts. This is a change in institutional culture which NMSs largely welcome, but which needs support from organisations. The MNSs are now better able to manage and take advantage of their historical data and dialogue more effectively with local users of information. This change requires contribution of partners at international, regional, national and subnational level. It is an area where some work has been done and progress achieved, but much remains to be

Partners:
Statistical Services Centre (SSC), Reading University, http://www.reading.ac.uk/ssc (r.d.stern@reading.ac.uk)
Ghana Meteorological Service (Gmet) http://www.meteo.gov.gh
African Institute for Mathematical Sciences (AIMS) Ghana, http://www.aims.edu.gh
Participatory Integrated Climate Services for Agriculture (PICSA) (p.t.dorward@reading.ac.uk)
CCAFS: Theme 4 Policies and Institutions,
CCAFS Regional Office, West Africa,
World Meteorological Organisation (WMO), https://www.wmo.int/pages/index_en.html
Enhancing National Climate Time Series (ENACTS), IRI, http://iri.columbia.edu

Links / sources for further information:
Video-presentation: An overview of Climate Services and the PICSA approach by University of Reading team. http://ow.ly/IX8js

Blog: New capacity to produce and communicate climate information services built in Tanzania, by Graham Clarkson, Peter Dorward, Harneet Kaur, Arame Tall. Uploaded: 23 December 2014.

http://ccafs.cgiar.org/blog/new-capacity-produce-and-communicate-climate-information-services-built-tanzania Views: 70

Blog: How to best support farmers with useful climate information services, by Cecilia Schubert (originally published on AlertNet): http://ccafs.cgiar.org/blog/how-best-support-farmers-useful-climate-information-services Uploaded: January 2 2015. Views: 506 (AlertNet link: http://www.trust.org/item/20150102190320-1ngkv/)

Blog: Photo-story: Farmers in Tanzania use climate information to cope with variability, by Cecilia Schubert. Uploaded: 13 January 2015. http://ccafs.cgiar.org/blog/photo-story-farmers-tanzania-use-climate-information-cope-variability Views: 435

Blog: Farmer-responsive climate services built in Tanzania and Malawi, by Jeanne Coulibaly, Joash Mango, Arame Tall, Harneet Kaur. Uploaded: January 14, 2015. http://ccafs.cgiar.org/blog/farmer-responsive-climate-services-built-tanzania-and-malawi Views: 193

5. Outcomes.

Outcome #1:

Scenarios for policy development: the Cambodian Climate Change Priorities Action Plan for Agriculture

What is the outcome of the research (i.e. use of research results by non-research partners)?
The Cambodian Climate Change Priorities Action Plan for Agriculture (147 mln USD) has been developed in an intensive collaboration with CCAFS over 9 months. Linked funds are from EU/UNDP/ASEAN/IFAD/UNEP/GEF The stakeholder-generated and quantified CCAFS Southeast Asia scenarios were used for priority-setting for Cambodia in the face of climate change. The CCPAP features a strong focus on climate-smart agriculture. Capacity building for scenario/model-guided planning is in its integrative activities. This is an example of CCAFS scenario-guided policy development in all regions.

What outputs produced in the three preceding years resulted in this outcome?
Socio-economic/climate scenarios for SEA with stakeholders, starting with a CCAFS/FAO/UNEP WCMC workshop. Report: http://www.fao.org/fsnforum/sites/default/files/files/99_EPIC/Scenarios%20workshop%20report%20II_FSN%20(2).pdf; a blog/video: http://ccafs.cgiar.org/blog/decision-makers-debate-climate-threats-southeast-asia#.VNUSJ53F-So

Scenarios quantified using the GLOBIOM (IIASA) and IMPACT (IFPRI) models. A working paper synthesizing model results: https://cgspace.cgiar.org/handle/10568/56839

CCAFS regional scenarios coordinator was invited to use scenarios to help develop the CCPAP. A meeting with 100 national experts to review it; a 3 hour presentation on CCAFS scenarios, model quantification, excerpts here: https://www.dropbox.com/sh/gzx7vbx74qq3a6s/AACsIVzL_ma_w8haLN_jQ8uaa?dl=0

An English summary of the finalized CCPAP: http://ccafs.cgiar.org/sites/default/files/files/CCPAP%202014-18-1.docx Blog story on finalized plan: http://ccafs.cgiar.org/blog/future-scenario-development-now-part-cambodias-action-plan-agriculture#.VNUQjZ3F-So

Second workshop report:: https://www.dropbox.com/s/nxqv73hof05anea/SEA%20Workshop%202014%20Report%20Final.pdf?dl=0; Video: [REF]

Methods paper: (4 citations; 4500 downloads): Vervoort, J. M., P. K. Thornton, P. Kristjanson, W. Förch, P. J. Ericksen, K. Kok, J. S. I. Ingram, M. Herrero, A. Palazzo, A. E. S. Helfgott, A. Wilkinson,

P. Havlík, D. Mason-D'Croz, and C. Jost. 2014. Challenges to scenario-guided adaptive action on food security under climate change. Global Environmental Change. http://www.sciencedirect.com/science/article/pii/S0959378014000387

What partners helped in producing the outcome?

United Nations Environment Program – World Conservation Monitoring Centre: co-leading the regional scenarios process and providing funding and scenario quantification (land-use and ecosystems services maps based on IMPACT and GLOBIOM results) for a workshop in late 2014 where, among other processes, the implementation of the finalized CCPAP was discussed with Cambodian partners.

United Nations Food and Agriculture Organization – Economic and Policy Innovations for Climate-Smart Agriculture: co-leaders and co-funders of the initial scenario development process for Southeast Asia.

International Institute for Applied Systems Analysis: Responsible for quantification of the SEA scenarios using the GLOBIOM model, together with IFPRI's IMPACT model. IIASA helped produce timely results needed for key steps in the CCPAP review process.

Who used the output?

The Cambodian Ministry of Agriculture, Forestry and Fisheries (MAFF) has been the immediate next user of this process. Through the implementation of the CCPAP, sub-national government and communities who will benefit from prospective CSA practices will be output users.

How was the output used?

The CCAFS SEA scenarios were used to set priorities in the CCPAP, and scenario development and quantification were included in the cross-cutting activities in the CCPAP. Dr. Rathana Peou (CCAF SEA scenarios) supported the design of the budget through investment proposal excercises.

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?

English summary of CCPAP: http://ccafs.cgiar.org/sites/default/files/files/CCPAP%202014-18-1.docx

Interview with MAFF State Secretary Ty Sokhun - expresses enthusiasm for scenario method; gratitude to Rathana Peou for developing CCPAP: https://www.youtube.com/watch?v=QSwGTfyi4gI

This outcome is part of a CCAFS research case study report: https://www.dropbox.com/s/ldeumebx8hrdrj6/Case%20study%20CCAFS%20scenario-guided%20policy%20research%202014.docx?dl=0

A blog book: https://cgspace.cgiar.org/bitstream/handle/10568/52262/Blog%20Book%20K2A%20.

Minister of Commerce thanks and recognition (CONFIDENTIAL!): https://www.dropbox.com/s/uerlfwthnmkao23/CONFIDENTIAL%20MoC%20letter%20of%20support%

20and%20recognition.docx?dl=0

7. Outcome indicators.

Outcome Indicator:

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

Achievements:

Databases and tools for climate smart agriculture continued to be developed and utilised. The CCAFS-Climate portal is delivering downscaled climate change datasets to users, both scientists and non-scientists, all over the world. It is having significant impact by putting high-resolution climate change information into the hands of non-climate scientists and next users, which represent 19% of all CCAFS-Climate users (NGOs, non-research international/national organizations, donors and governmental institutions). The portal now has a broad, multidisciplinary and global user base that employs the data to support impact and adaptation analyses. AgTrials and the baseline data stored on Dataverse continue to be widely used by a range of regional and international organisations. Several climate-smart agriculture prioritization tools have been developed and are being used (CIAT, CIFOR, IWMI, ILRI) that facilitate the identification of CSA investment portfolios. These tools are being used in Latin America, West Africa, East Africa and South Asia.   Work on IIASA's Geo-Wiki platform resulted in new global percentage cropland and field-size maps, which are being widely used by international organisations and initiatives. With Theme 4.1, CARE and ICRAF, some 61 different partners in 19 countries co-developed and are using the Gender and Social Inclusion Toolbox. Several national, regional and international partners are using the Toolbox to help guide their programming.

Evidence:

CCAFS data and tools were evaluated by external consultants, jointly commissioned by Theme 1 and Theme 4 ("Evaluation of Data and Tools from CGIAR's Research Program on Climate Change, Agriculture, and Food Security", TANGO International, Inc., 2015. The report is on the CCAFS website.) And see:

http://www.ccafs-climate.org/ (and Google Analytics)

http://www.agtrials.org/

http://thedata.harvard.edu/dvn/dv/ CCAFS baseline (and analytics)

http://geo-wiki.org

8. Leveraged funds.

Leveraged funds #1
Title:
Investigation of the potential and opportunities for scaling up climate services for small scale farmers in Africa
Partner Name: University of Reading
Budget: $150,000.00
Theme :4

Leveraged funds #2
Title:
LiveGAPS: Understanding livestock yield gaps for poverty allevataition, food security and the environment
Partner Name: CSIRO
Budget: $1,000,000.00
Theme :4

Leveraged funds #3
Title:
Household and value chain modelling tools
Partner Name: CSIRO
Budget: $600,000.00
Theme :4

Leveraged funds #4
Title:
UNEP WCMC funding for 2013/2014 scenario work in three CCAFS regions
Partner Name: University of Oxford
Budget: $315,000.00
Theme :4

Leveraged funds #5
Title:
FAO EPIC program funding for scenarios in SEA and Southern Africa
Partner Name: University of Oxford
Budget: $220,000.00
Theme :4

Leveraged funds #6
Title:
OXFAM GB funding for scenarios case study report

Partner Name: University of Oxford
Budget: $30,000.00
Theme :4

Leveraged funds #7

Title:

FP7 TRANSMANGO
Partner Name: University of Oxford
Budget: $50,000.00
Theme :4

Leveraged funds #8

Title:

Australian Department of Foreign Affairs and Trade Office of Development Effectiveness funded to repeat the evaluation method we used across the DFAT-CSIRO Alliance projects
Partner Name: CSIRO
Budget: $90,000.00
Theme :4

Leveraged funds #9

Title:

Australia Indonesia Centre Foresighting
Partner Name: CSIRO
Budget: $175,000.00
Theme :4

Leveraged funds #10

Title:

WMO funded 2 runs of the e-SIAC e-learning training. That's the training that included the PICSA approach
Partner Name: University of Reading
Budget: $65,000.00
Theme :4

Leveraged funds #11

Title:

UK Met Office funded a series of activities leading to the development of the CLIMSOFT 3.2 climatic data management software
Partner Name: University of Reading
Budget: $50,000.00
Theme :4

Leveraged funds #12

Title:

Contributions to the Climate Change and Social Learning Initiative in kind

Partner Name: IDRC

Budget: $20,000.00

Theme :4

9. Publications.

Publication #1:

Assessment of India's Integrated Agro-meteorological Advisory Service program from a farmer perspective

Citation:

Venkatasubramanian, K., A. Tall, J. Hansen, P. K. Aggarwal 2014. Assessment of India's Integrated Agro-meteorological Advisory Service program from a farmer perspective. CCAFS Working Paper no. 54. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org

Identifier	CCAFS Themes	Type	Access
http://ccafs.cgiar.org/es/node/38288#.VN2fNSzMDdM	Not defined	Non-peer reviewed articles	

Publication #2:

Making the most of climate impacts ensembles

Citation:

Challinor A, Martre P, Asseng S, Thornton P, Ewert F. 2014. Making the most of climate impacts ensembles. Nature Climate Change 4: 77–80.

Identifier	CCAFS Themes	Type	Access
http://dx.doi.org/10.1038/nclimate2117	Theme 4.2,	Peer-reviewed journal articles	Limited

Publication #3:

Climate change mitigation through livestock system transitions

Citation:

Havlík, P., Valin, H., Herrero, M., Obersteiner, M., Schmid, E., Rufino, M.C., Mosnier, A., Thornton, P.K., Böttcher, H., Conant, R.T., Frank, S., Fritz, S., Fuss, S., Kraxner, F. and Notenbaert, A. 2014. Climate change mitigation through livestock system transitions. PNAS 111(10): 3709 - 3714

Identifier	CCAFS Themes	Type	Access
http://dx.doi.org/10.1073/pnas.1308044111	Theme 4.2,	Peer-reviewed journal articles	Gold

Publication #4:

Climate change adaptation in mixed crop?livestock systems in developing countries

Citation:

Thornton P, Herrero M. 2014. Climate change adaptation in mixed crop?livestock systems in developing countries. Global Food Security

Identifier	CCAFS Themes	Type	Access
doi:10.1016/j.gfs.2014.02.002	Theme 4.2,	Peer-reviewed journal articles	Limited

Publication #5:

Climate variability and vulnerability to climate change: a review

Citation:

Thornton P, Ericksen PJ, Herrero M, Challinor AJ. 2014. Climate variability and vulnerability to climate change: a review. Global Change Biology

Identifier	CCAFS Themes	Type	Access
http://dx.doi.org/10.1111/gcb.12581	Theme 4.2,	Peer-reviewed journal articles	Gold

Publication #6:

Climate change and livestock in developing countries: possibilities for adaptation

Citation:

Harding P (eds). Agriculture for Development 22. Midlothian, United Kingdom: Tropical Agriculture Association

Identifier	CCAFS Themes	Type	Access
https://cgspace.cgiar.org/handle/10568/45937	Theme 4.2,	Non-peer reviewed articles	

Publication #7:

Sustainable intensification: What is its role in climate smart agriculture?

Citation:

Campbell BM, Thornton P, Zougmoré R, van Asten P, Lipper L. 2014. Sustainable intensification: What is its role in climate smart agriculture? Current Opinion in Environmental Sustainability 8:39-43

Identifier	CCAFS Themes	Type	Access
http://dx.doi.org/10.1016/j.cosust.2014.07.002	Theme 4.2,	Peer-reviewed journal articles	Gold

Publication #8:

Climate-smart agriculture for food security

Citation:

Lipper, Leslie; Thornton, Philip; Campbell, Bruce M.; Baedeker, Tobias; Braimoh, Ademola; Bwalya, Martin; Caron, Patrick; Cattaneo, Andrea; Garrity, Dennis; Henry, Kevin; Hottle, Ryan; Jackson, Louise; Jarvis, Andrew; Kossam, Fred; Mann, Wendy; McCarthy, Nancy; Meybeck, Alexandre; Neufeldt, Henry; Remington, Tom; Sen, Pham Thi; Sessa, Reuben; Shula, Reynolds; Tibu, Austin; Torquebiau, Emmanuel F.. 2014. Climate-smart agriculture for food security. Nature Climate Change 4: 1068-1072.

Identifier	CCAFS Themes	Type	Access
doi:10.1038/nclimate2437	Theme 4.2,	Peer-reviewed journal articles	

Publication #9:

Mapping the Global Distribution of Livestock

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
10.1371/journal.pone.0096084	Theme 4.2,	Peer-reviewed journal articles	Gold

Publication #10:

Food Security and Food Production Systems in: Climate Change 2014: Impacts, Adaptation, and Vulnerability.(IPCC Chapter 7)

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
http://www.ipcc.ch/report/ar5/wg2/	Theme 4.2,	Other	

Publication #11:

Gaming Collecting data via gaming to produce improved land cover products

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
10.1371/journal.pone.0096084	Theme 4.2,	Other	

Publication #12:

Vulnerability maps for Cambodia, Laos and Vietnam

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
	Theme 4.2,	Other	

Publication #13:

Impacts of climate change on length of growing period

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
http://dx.doi.org/10.2499/9780896298460_24	Theme 4.2,	Other	

Publication #14:

Rainfall and Rainfall Variability

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
	Theme 4.2,	Other	

Publication #15:

This publication has not a title defined.

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
	Theme 4.2,	Other	

Publication #16:

This publication has not a title defined.

Identifier	CCAFS Themes	Type	Access
http://www.agra.org/silo/files/agra-africa-agriculture-status-report-2014.pdf	Theme 4.2,	Other	

Publication #17:

This publication has not a title defined.

Identifier	CCAFS Themes	Type	Access
http://hdl.handle.net/10568/51614	Theme 4.2,	Other	

Publication #18:

Climate change in Central and South America: Recent trends, future projections, and impacts on regional agriculture

Identifier	CCAFS Themes	Type	Access
http://hdl.handle.net/10568/41912	Theme 4.2,	Other	

Publication #19:

How resilient are farming households, communities, men and women to a changing climate in Africa?

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
	Theme 4.2,	Other	

Publication #20:

Observations and reanalyses data: comparison and trends in Southeast Asia

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
	Theme 4.2,	Other	

Publication #21:

Strengthening Soil Databases for Climate Change and Food Security Modeling Applications

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
	Theme 4.2,	Other	

Publication #22:

A systematic review of local vulnerability to climate change: in search of transparency, coherence and comparability

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
	Theme 4.2,	Other	

Publication #23:

Healthy diets, healthy planet: exploring the diet and environment nexus for multiple benefits.

Citation:

The citation is not defined yet.

Identifier	CCAFS Themes	Type	Access
	Theme 4.2,	Other	