Outcome case studies reported in 2016

Each year program participants are asked to report on outcomes – 'use of research by non-research stakeholders who help drive impacts'. This file contains the results of that reporting.

After submission, outcome case studies are evaluated by 1-2 CCAFS core team members and 1-2 external evaluators (experienced research for development specialist, representative of a non research stakeholder group and/or a recent retiree from a donor agency). The case studies are evaluated on three variables: significance (weighted heavily), evidence of the outcome, and coherence of the case study. An overall score is given to each case study, with core team member scores weighted 50% of that of the external evaluators.

The outcomes case studies are eventually classified on a five-point scale: 1 – not an outcome or poor outcome; 2 – not a good outcome; 3 – OK: notable; 4 – Good; 5 – Excellent. Of the case studies the following are regarded as sufficiently developed for reporting (though some will be subject to follow up requests for further information). Project numbers are shown.

EXCELLENT

- P42, P112: 330.000 farmers in Honduras and Colombia use tailored seasonal forecasts + recommendations to adapt to climate variability

GOOD

- P42: Costa Rica adopts digital system for emergency response data collection and decision-making
- P53, P25: Scaling of Climate Smart Villages across 38 districts of Bihar
- P56: CIAT-CCAFS CSA Profiles in Kenya drove national/county plans, informed US$ 250 million World Bank investment
- P87, P34: The CCAFS Climate-Smart Village approach inspired the World Bank funded CSA project in Niger
- P111, P117, P125, P91: Analysis of Paris Agreement pledges informs development planning and UNFCCC negotiations

OK – NOTABLE

- P12, P111, P13: Kenya prepares GCF concept note for low-emission and climate resilient dairy development
- P21: Paddy rice project supports Vietnam's move from INDC to NDC
- P22: Mexican government provides support for scaling out technologies for better N management.
- P42: Information design improves decision making in Food Security Early Warning System (FEWS) in Guatemala
- P43: Tricot crowdsourcing evidence stimulates government seed multiplication efforts in Ethiopia

- P56, P108: State and non-state actors prepare implementation guidelines and concept notes to scale-up CSA in Tanzania
- P58: As a result of CIAT-CCAFS science Farmers Associations across Colombia have institutionalized climate specific management
- P61; P119: Scaling out climate smart agriculture through CSV approach
- P63; P90: Scenario-guided policy revision in Burkina Faso: National Plan for the Rural Sector II
- P63: Scenario-guided policy development in Costa Rica: Policy for Productive Development 2017-2050
- P101: APEC uses CCAFS technical expertise and inspiration to develop a new Pacific wide CSA initiative
- P101, P56: USAID-FTF is orienting its future programming towards encompassing CSA principles using CCAFS tools
- P105, P121: Rwanda integrates participatory delivery of rural rural climate service into agricultural extension system
- P112, P42: Colombian agricultural sector adapts to climate variability with CIAT-CCAFS facilitated data collection, dissemination and science
- P112: Cauca is becoming a climate-smart department
- P118: 8 Central-American countries are committed to CSA to support agriculture in a changing climate
- P118: Index Insurance Research Leads to Regulatory Reviews in Honduras

To be further investigated before making a final rating:

- P106, P117, P121: Strengthening USAID and DfID Investment in Climate Services in East Africa through ICPAC
- P117; P101: Government of Timor Leste sensitized to climate factors through research informed by CCAFS climate data
- P117; P101: Indian Cabinet approves a water-energy nexus program partly informed by data from CCAFS Climate-Portal

Case Studies

ID # 66 - Co-Chairs of international negotiations reflect CCAFS science in negotiating text (emerging outcome)

Project(s): P66

Outcome Statement: The Co-Chairs of an ongoing international negotiation of the multilateral system of access and benefit-sharing under the Plant Treaty introduced content into the text that will be used as the basis of negotiations in 217 based on submissions from CCAFS in 2016

Research Outputs: Reports from the Friends of the Co-Chairs Group on a Termination Clause Comments from the CGIAR regarding the Treaty Secretariats Proposed Technical Amendments to the SMTA

Research Partners: Article 15 Executive, Consortium Office, CLIPNet

Activities: CCAFS scientists participated in the ongoing negotiations since 2015, working closely with representatives of the CO/SMO), the Article 15 group of CGIAR genebank manager and the CGIAR Legal and Intellectual Property Network (CLIPNet). Over that time, they made many technical contributions, including (in earlier years) a research paper on global movements of germplasm and (in 2016) short technical papers on key negotiation issues. In addition to submitting the papers, the CCAFS scientists arranged for meetings with each of the the regional groups during the negotiating session in July 2016 in Geneva to share our views, and followed-up activity with the Plant Treaty Secretariat and Co-Chairs from July to December 2016. Furthermore on CCAFS Scientist was asked to faciliate a Friends of Co-Chairs (FoCC) group of experts to focus on one particlar issue. He wrote and submitted reports to the WG-EFMLS based on the FoCC Group's deliberations.

Non-Research Partneres: Director General of CGIAR Centres who approved 'Comments from the CGIAR' report. Individual experts who served as members of FoCC group facilitated by CCAFS scientist.

Output Users: The outputs have been used by the Treaty Secretariat, the Co-Chairs of the WG-EFMLS, and the delegates from 7 UN regions plus observers that constitute the WG-EFMLS.

Evidence Outcome: The revised negotiating text of the standard material transfer agreement included on the Plant Treaty website, and explanatory notes that will be posted in March 2017. We will interview the Treaty Secretary and the Co-Chairs of the WG-EFMLS when the negotiations are finished and the outcome is (hopefully) fully realized.

Output Used: The outputs were submitted to the WG-EFMLS, Co-Chairs and Treaty Secretariat. CCAFS scientists follow up explaining why the suggesed revisions are critically important for the future functioning of the MLS. They will be cited by the Co-chairs to justify the relevant revised sections of the text.

References Case: none at this stage of emerging outcome

Primary 2019 outcome indicator(s): # of regional/global organisations and processes that inform their equitable institutional investments in climate smart food systems using CCAFS outputs

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

Annexes uploaded:

ID # 67 - Adoption of citizen science methodology shapes new linkages between researchers and farmers for climate adaptation

Project(s): P43

Outcome Statement: Through broad platforms including the Collaborative Programme on Participatory Plant Breeding of Mesoamerica, the McKnight Foundation Collaborative Crop Research Program (CCRP), and the Indian Council of Agricultural Research, more than 20 different organizations have used the tricot citizen science methodology, reaching ~50,000 farmers with seeds of stress-tolerant varieties of common bean, bread wheat, rice, durum wheat, and tepary bean.

Research Outputs: We have produced a large number of materials to support training on the tricot crowdsourcing methodology, including a manual and a series of 7 professionally produced videos. Both were published in English and Spanish. We also made a significant effort to write blog posts and tweet about our work. To provide rigorous documentation of our design choices in developing the tricot methodology and to summarize work that was published as "gray" literature (reports and MSc theses) we wrote a peer-reviewed article for Experimental Agriculture (online). Also, we wrote a couple of more quantitative articles about statistical methods and data quality which are both advanced in the review process (February 2017).

Research Partners: Feedback on the platform has been given by professionals from over 40 organizations who have participated in courses and used the platform. Many of these professionals and their organizations are member of / associated with one of the following platforms: - Collaborative Programme on Participatory Plant Breeding of Mesoamerica - McKnight Foundation Collaborative Crop Research Program (CCRP) - Indian Council of Agricultural Research Another important partner in Central America was CATIE.

Activities: Design of the ClimMob.net platform, tutorials, videos (see under outputs) disseminated via the web. Continuous methodological support to implementing organizations. A large number of courses, reaching more than 154 professionals in the agricultural sector: 1. Course in April 2016, in the PCCMCA 2016 in San José, Costa Rica, reaching x professionals from all over Latin America who are active in the agricultural sector 2. A series of courses to the members of the Collaborative Programme on Participatory Plant Breeding of Mesoamerica and other organizations, reaching 33 organizations and 77 professionals from Nicaragua, Honduras and Guatemala. 3. Course for Bioversity research partners in Ethiopia, April 2016 4. Course for Bioversity research partners in India, May 2016

Non-Research Partneres: Most research partners are also "non-research partners" in the sense that they have extension / technology transfer roles. For example, the KVKs in India, CATIE in Central America, have both research and extension roles. The tricot methodology bridges between research / technology transfer and agricultural extension. Other non-research partners are farmer associations (several cooperatives in Guatemala) and NGOs.

Output Users: Members of the consortia mentioned above include national agricultural research institutes, universities, NGOs and farmer associations.

Evidence Outcome: Feedback about the quality of the ClimMob.net platform - System Usability Scale (SUS) average score of 69, (=”good”) Collaborative Programme on Participatory Plant Breeding of Mesoamerica implements several trials in Central America not financed by Bioversity (report attached, in Spanish) Data on use extracted from the ClimMob.net platform database

Output Used: The tricot methodology is used to scale on-farm testing. This has several benefits:

-more farmers are reached as on-farm testing equals direct dissemination of CSA technologies/practices, -environmental adaptation can be assessed quicker by assessing performance across gradients with environmental data -cost reduction due to simple formats and digital support.

References Case: ClimMob.net platform: experimental design, data collection and analysis (www.climmob.net) Steinke, J. and van Etten, J. 2016. Farmer experimentation for climate adaptation with triadic comparisons of technologies (tricot). A methodological guide. Rome, Bioversity International. http://www.bioversityinternational.org/index.php?id=244&tx_news_pi1%5Bnews%5D=8453&cHash=d1172463f3bc6d14989d52c966fb702b Same item in Spanish: http://www.bioversityinternational.org/index.php?id=244&tx_news_pi1%5Bnews%5D=8476&cHash=52cf32a6c2355cc6138cb3c895a12c8f Tricot methodology and ClimMob. (Series of 7 professionally produced instructional videos in English and Spanish.) https://www.youtube.com/watch?v=Fk3Le-iG8Fc&list=PL-sGSYV1hj3Si7WjXeCuhMscuRlbY4n3n https://www.youtube.com/watch?v=Cx19oK7LmXg&list=PL-sGSYV1hj3TleLxtcDGs_lH8-dCu36w9 van Etten, J., E. Beza, L. Calderer, K van Duijvendijk, C. Fadda, B. Fantahun, Y.G. Kidane, J. van de Gevel, A. Gupta, D.K. Mengistu, D. Kiambi, P. Mathur, L. Mercado, S. Mittra, M. Mollel, J.C. Rosas, J. Steinke, J.G. Suchini, K. Zimmerer. First experiences with a novel farmer citizen science approach: Crowdsourcing participatory variety selection through on-farm triadic comparisons of technologies (tricot). Experimental Agriculture, online. Blog "Central American professionals learn about farmer citizen science for climate adaptation" http://www.bioversityinternational.org/news/detail/central-american-professionals-learn-about-farmer-citizen-science-for-climate-adaptation/ Blog "ClimMob, a software for crowdsourcing climate-smart agriculture" http://www.bioversityinternational.org/news/detail/climmob-a-software-for-crowdsourcing-climate-smart-agriculture/

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools # of public-private actors at national and sub-national levels are using new incentive mechanisms or business models/ markets that explicitly promote climate smart approaches along the value chain, using CCAFS science

Link between outcome story and and the FP Outcome(s): -

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//43/caseStudy/Informe W2B-PR-11-Guatemala-First.pdf

ID # 68 - Tricot crowdsourcing methodology facilitates scaling of farmer-participatory trials in India

Project(s): P43

Outcome Statement: In the period between 2012-2016, 46,641 Indian farmers conducted simple trials on their own fields with three varieties of the following crops: wheat, rice, mustard, pigeonpea, chickpea, green gram, red gram, sesame, and different species of vegetables. Reaching this number of farmers was facilitated by the novel tricot crowdsourcing method. Continuous availability of seeds of preferred varieties is ensured by the establishment of ten Community Seed Banks (with innovative seed conservation methods) benefitting approx. 8,000 farmers across 100 villages.

Research Outputs: Vernooy, R., Sthapit, B., Otieno, G., Shrestha, P. and Gupta, A. The roles of community seed banks in climate change adaption. Development in Agriculture. (Accepted Nov 2016) van Etten, J., Beza, E., Calderer, L., van Duijvendijk, K., Fadda, C., Fantahun, B., Kidane, Y.G., van de Gevel, J., Gupta, A. and Mengistu, D.K., 2016. First experiences with a novel farmer citizen science approach. Experimental Agriculture, early online. Malavika Dadlani, Prem Mathur and Arnab Gupta (2016): Community Seed Banks: A sustainable response to small and marginal farming against climate change hurdles. Agriculture World. Vol II. Issue 1. January 2016. Sharma N , Mathur P N , Gupta A , Dadlani M , van Etten J, Kumar N K K (2017). Seeds for Needs: Revival of Traditional Varieties and Landraces for Climate-Resilient Agriculture. International Conference on Climate Change 2017". Colombo- 16-17 February, 2017

Research Partners: ICAR-NBPGR

Activities: Extensive liaising with the Indian Council of Agricultural Research took place to ensure partnership with KVKs and access to seeds.

Non-Research Partneres: We list the collaborating institutions of the last 3 growing seasons. KVKs are in charge of technology transfer. Deendayal Research Institute (DRI), Chitrakoot: Mr Atul Jain, Mr Abhay Mahajan, Dr Anil Jaiswal DRI-Krishi Vigyan Kendra, Satna: Dr R S Negi DRI- Krishi Vigyan Kendra, Chitrakoot: Dr Narendra Singh DRI-Krishi Vigyan Kendra, Gonda: Dr Upendra Singh and Ramkrishna Tiwari Krishi Vigyan Kendra, Raisen : Dr Swapnil Dubey Sher-e-Kashmir University for Agriculture and Technology-Kashmir: Dr G A Parray

Output Users: - Direct institutional users of the trial outputs are the ten Community Seed Banks who stock identified varieties. - KVKs use the tricot crowdsourcing methodology. - 96% of farmers saved seeds from their experiments to continue growing the varieties they preferred (impact study with n=250).

Evidence Outcome: - Datasets of tricot trials - Studies done by Bioversity (see uploaded report)

Output Used: The Community Seed Banks now hold 492 different varieties and landraces and serve 8,000 farmers at present. KVKs have used the tricot methodology to reach more farmers than usual using other on-farm experimentation approaches. Farmers have increased their use of newer, more stress tolerant, varieties.

References Case:
http://www.bioversityinternational.org/news/detail/opening-the-doors-to-indias-first-low-energy-genebank/ http://www.iivr.org.in/first-low-energy-seed-gene-bank-inaugurated-icar-iivr-varanasi.html

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and

public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

Link between outcome story and and the FP Outcome(s): The outcome makes a substantial contribution to progress on the number of farmers reached with CSA technologies, which is why the flagship leader encouraged us to submit this as an outcome case study.

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//43/caseStudy/CCAFS REPORT INDIA 2016-17.docx

ID # 69 - Tricot crowdsourcing evidence stimulates government seed multiplication efforts in Ethiopia

Project(s): P43

Outcome Statement: The Bioversity tricot crowdsourcing approach has been used in our "Seeds for Needs" research and has proven that (i) selected landraces yield more and are more stable in marginal, climatically-variable conditions than improved/introduced varieties and (ii) these superior landraces are preferred by the farmers over conventionally-bred varieties. As a result, the federal government and Amhara government of Ethiopia are supporting the Seeds for Needs approach in promoting the use of landraces at regional and national levels financing massive seed multiplication.

Research Outputs: During 2016 two papers were published on the performance of the varieties tested and the molecular characterization showing the potential of Ethiopian durum wheat farmers' varieties. In 2016, F7 seeds of 1200 lines were characterized using molecular and morphological traits. In addition, 3 of these varieties have been proposed for release, which would confirm the superiority of farmers' varieties under marginal conditions. A final decision will be taken in April. In parallel, we completed pre-breeding work crossing 50 farmers' varieties and an improved one using a Nested Association Mapping Approach. Through this we managed to develop over 6,000 Recombinant Inbred Lines (RILs). This is a very innovative, unique breeding program for durum wheat as it has been used only for maize and bread wheat globally. Data analysis is yet to be completed, but the approach will allow to easily use marker assisted breeding for future breeding work in Ethiopia.

Research Partners: Amhara Region Agricultural Research Institute (ARARI), Ethiopian Biodiversity Institute (EBI), Mekelle University (MU), Scuola Superiore S. Anna (SSSUP)

Activities: We organized a field day with the attendance of the Head of Bureau of Agriculture at the end of 2015. The Head was impressed by the enthusiasm of the farmers who were very supportive. We conducted an additional workshop in early June 2016, in which it was agreed that the Bureau will promote these varieties through the NARS, will support seed multiplication and further characterization of the pre-breeding materials. This support has fully materialized. In 2016 we organized a field visit for the DG of the Ethiopian Institute of Agricultural Research who was impressed by the role that farmers' varieties can have in higher, stable yields. He pledged support and after a series of meetings, the Bioversity Seeds for Needs approach was included in the newly released national Biodiversity Strategy and Action Plan (NBSAP) a CSA manual chapter on using genetic diversity to enhance productivity and adapt to climate change.

Non-Research Partneres: National extension system of Ethiopia, various local farmer groups engaged by Bioversity.

Output Users: The federal government and regional Amhara government of Ethiopia have used the empirical evidence to prioritize seed dissemination/multiplication. Ethiopian Biodiversity Institute uses the outputs to inform its national plan (NBSAP). The WB Sustainable Land Management Project will use it to pilot the CSA manual in 20 watersheds starting from 2017.

Evidence Outcome: Letter of agreement between Bureau of Agriculture and ARARI to support Bioversity's activity (attached: NBSAP 2015-2020). The CSA manual cannot yet be shared since it is still in its confidential form, but it received no objection from the World Bank.

Output Used: The output was used as evidence for policy making by the mentioned government institutions and projects. Especially the field visits and the support of large groups of farmers (10,000

farmers reached) was important in convincing relevant policy and decision makers.

References Case: Mengistu D.' Kidane Y', Catellani M', Frascaroli E', Fadda C., Pe'E., Dell 'acqua M., 2016. High-density molecular characterization and association mapping in Ethiopian durum wheat landraces reveals high diversity and potential for wheat breeding. Plant Biotechnology Journal. Pp 1-13. http://dx.doi.org/10.1111/pbi.12538. D.K. Mengistu, Y.G. Kidane, C. Fadda, M.E. Pè, 2016. Genetic diversity in Ethiopian Durum Wheat (Triticum turgidum var durum) inferred from phenotypic variations. Plant Genetic Resources. https://doi.org/10.1017/S1479262116000393

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

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

Annexes uploaded:
https://marlo.cgiar.org/data/ccafs/projects//43/caseStudy/SupportingDocumentEthiopiaOutcome.docx

ID # 76 - Scaling of Climate Smart Villages across 38 districts of Bihar

Project(s): P25, P53

Outcome Statement: With CCAFS informed science backed evidence, knowledge, enhanced capacity and improved climate literacy of key decision makers, the climate smart agriculture practices have been mainstreamed in the Government of Bihar's investment and agricultural development plan targeting climate smart villages (CSVs) to be implemented across all 38 districts helping several hundreds of thousands small holder men and women farmers to improve their food, nutrition and livelihoods while coping with climate risks.

Research Outputs: Evidence on climate smart agriculture practices and Climate-Smart Villages in CCAFS's pilot sites implemented by CIMMYT-BISA and partners. (Report uploaded) https://www.dropbox.com/s/3slu4ngpnvy86zx/CSVs%20in%20Bihar_ML.pdf?dl=0 https://ccafs.cgiar.org/publications/climate-change-adaptation-greenhouse-gas-mitigation-and-economic-profitability#.WKaIJOSB-Uk http://dx.doi.org/10.1016/j.fcr.2014.04.015 http://onlinelibrary.wiley.com/doi/10.1111/sum.12331/pdf http://www.sciencedirect.com/science/article/pii/S0065211315300055 https://ccafs.cgiar.org/publications/economic-benefits-climate-smart-agricultural-practices-smallholder-farmers-indo#.WKaY8uSB-Uk Governance, guidance, LAPA : https://www.dropbox.com/s/x0rufzjc4afd9k6/LAPA-Climate%20Smart%20Villages_28-08-2015.pdf?dl=0 (File Uploaded) Development and assessment of portfolio of CSA interventions in Climate-Smart Villages : http://www.isa-india.in/wp-content/uploads/2016/12/Extended-summaries-book-Vol.-1.pdf#page=26-27 http://www.isa-india.in/wp-content/uploads/2016/12/Extended-summaries-book-Vol.-1.pdf#page=35-36 Increased awareness and capacity of local govt officers and other stakeholders to design and implement Climate-Smart Villages in Bihar. https://www.dropbox.com/s/4wu9rghjxzsx722/CCAFS%20trainings%20database.xlsx?dl=0 Policy decision for scaling climate smart agriculture in Bihar: Based on series of consultations, capacity development and sharing evidence, the Bihar Agricultural Management & Training Institute (BAMETI), Government of Bihar have taken decision to implement climate smart agriculture and CSVs in all 38 districts of Bihar. http://www.cimmyt.org/wp-content/uploads/2017/01/letter-1_bihar-story.pdf. Farmers testimonials and CSAPS videos

Research Partners: Key research partners includes national agricultural research system [Indian Council of Agricultural Research (ICAR), State Agriculture Universities], Borlaug Institute for South Asia (BISA), Bihar Agriculture Management and Training Institute (BAMETI), Government of Bihar, Bayer Crop Science, and CGIAR centers.

Activities: Participatory research to generate science backed evidence on Climate Smart Agricultural Practices (CSAPs) from Climate Smart Village Pilots in Samastipur and Vaishali districts of Bihar Sharing the evidence on CSAPs through presentations in high level meetings and workshops. A stakeholder consultation led by Agriculture Production Commissioner of Bihar was organized for mainstreaming of CSAPs in the "Innovative Agricultural Road-Map" of Bihar. Capacity development of stakeholders through travelling seminars, training workshops and field days for knowledge dissemination about CSAPs involving participation from the government. High level policy leaders (Chief Minister, Agriculture Minister and senior officials of Government of Bihar) visits the CCAFS pilot sites at

Samastipur and Vaishali Districts and had insights of CSAPs and CSVs from the farmers and other stakeholders. http://www.cimmyt.org/participatory-scaling-of-climate-smart-agriculture/ Strategic blending of people, policy and productivity for a sustainable future has been embedded in the work-plan of Govt of Bihar, addressing and scaling climate smart agriculture.

Non-Research Partneres: Department of Agriculture, Bihar Agriculture Management and Training Institute (BAMETI), Government of Bihar, Farmer cooperatives, service providers and private sector (machine manufacturers, seed companies). CIMMYT-BISA linkages with the leading NGOs in the region are planned for targeting the women engaged in agriculture. Capitalizing on their women groups and disseminating CSA knowledge is intended to achieve gender equity in agriculture.

Output Users: Department of Agriculture, Ministry of Agriculture and Ministry of Environment, Government of Bihar for implementation of their policies. Research organizations like ICAR, State Agriculture Universities, Wheat and Rice Agri-food system CRPs, to expand their scope. KVKs, NGOs, CSOs, farmer cooperatives, service providers, women groups for improved knowledge and capacity.

Evidence Outcome: Chief minister of Bihar presented letter to DG CIMMYT on CIMMYT 50 event emphasizing work to address climate change challenges http://www.cimmyt.org/wp-content/uploads/2017/01/Letter-2_Bihar-story.pdf. BAMETI, Govt of Bihar issued letter to CIMMYT-CCAFS, stating plan to implement CSAPs. http://www.cimmyt.org/wp-content/uploads/2017/01/letter-1_bihar-story.pdf. Bihar Krishi Road map and Chief ministers visit to Pilot research sites http://www.cimmyt.org/participatory-scaling-of-climate-smart-agriculture/

Output Used: The Department of Agriculture, Government of Bihar have initiated new schemes and planned investments for scaling CSA and CSVs across the Bihar state. Two project proposals on CSA built on CCFAS informed evidence got funded and are being implemented by Govt of Bihar

References Case:
https://ccafs.cgiar.org/publications/climate-change-adaptation-greenhouse-gas-mitigation-and-economic-profitability#.WKalJOSB-Uk http://dx.doi.org/10.1016/j.fcr.2014.04.015
http://onlinelibrary.wiley.com/doi/10.1111/sum.12331/pdf
http://www.sciencedirect.com/science/article/pii/S0065211315300055
https://ccafs.cgiar.org/publications/economic-benefits-climate-smart-agricultural-practices-smallholder-farmers-indo#.WKaY8uSB-Uk
http://www.isa-india.in/wp-content/uploads/2016/12/Extended-summaries-book-Vol.-1.pdf#page=26-27
http://www.isa-india.in/wp-content/uploads/2016/12/Extended-summaries-book-Vol.-1.pdf#page=35-36

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//25/caseStudy/LAPA-Climate Smart Villages_28-08-2015.pdf

ID # 77 - Colombian agricultural sector adapts to climate variability with CIAT-CCAFS facilitated data collection, dissemination and science

Project(s): P42, P112

Outcome Statement: CIAT-CCAFS agroclimatic prediction science has changed how agricultural sector organizations (e.g. farmer associations: Fedearroz, Fenalce; NARS: Corpoica; private research organizations: Cenicafé), generate and share climate variability adaptation recommendations. Through Technical Agroclimatic Committees (MTA), organizations from different agricultural sectors discuss, share, and integrate knowledge to tackle climate variability in MTA regions (Santander (new 2016), Cordoba, Sucre, Cauca, Magdalena, Eje Cafetero). National and Regional Agroclimatic Bulletins are produced using information generated in the MTAs. The bulletins democratized climate information in the country.

Research Outputs: CIAT-CCAFS developed underpinning science that enabled the widespread and sustained use of site-specific agro-climatic forecasts. Delerce et al. (2016) demonstrated that 30–50% of the rice yield variability can be explained by 3-4 climatic factors that can be managed with site-specific recommendations. Similarly, Esquivel et al. (in prep.) (https://goo.gl/d8weKg and https://goo.gl/2KCPXo) have demonstrated that forecast skill in Colombia is good enough to produce recommendations for various rice and maize regions. The effort included calibration and validation of rice, maize and bean models for Colombian conditions (Barrios, 2016). These findings and tools were co-developed with national stakeholders. CIAT-CCAFS scientists assessed information needs in Santander, Cordoba, Tolima, Valle del Cauca, and Meta (https://cgspace.cgiar.org/rest/bitstreams/73612/retrieve), which has been key for delivering user-tailored services and identifying and inviting MTA participants. For bean producers, agronomic practice manuals were produced, CIAT-CCAFS science to accompany forecasts (https://cgspace.cgiar.org/handle/10568/76299 and https://cgspace.cgiar.org/handle/10568/76613). and Departmental government installed the MTA to accompany farmers https://goo.gl/7WPDZC

Research Partners: La Corporación Colombiana de Investigación Agropecuaria (Corpoica) Universidad de SanGil UNISANGIL IRI – Columbia University Centro de Investigación de la Caña de Azúcar (Cenicaña) Centro de Investigación de Café (Cenicafé)

Activities: CIAT-CCAFS drove the establishment of 6 Technical Agroclimatic Roundtables (MTA), including the most recent one in Santander. There is also a National-level MTA. Through the MTAs, local and national governments, farmers' associations (Fenalce, Fedearroz, FNC, Cenicaña) and other participating institutions (universities, Corpoica) have institutionalized CIAT-CCAFS climate information into their decision making. CIAT-CCAFS science and capacity building on crop modelling and seasonal climate prediction enabled national partners, notably Fedearroz and Fenalce, to analyze local conditions and produce and disseminate seasonal agro-climatic forecasts across maize and rice producing regions. MTA participants continue monthly meetings to share forecasts now produced by their own teams. For example, Fedearroz and Fenalce now have teams of 5 people producing, interpreting and delivering monthly forecasts. During 2016 the national technical agroclimatic committee was realized, generating the monthly bulletins, completing two years of this initiative led by CIAT / CCFAS, MADR, IDEAM and 27 participating institutions.

Non-Research Partneres: Federación Nacional de Cultivadores de Cereales y Leguminosas (Fenalce) Federacion Nacional de Arroceros (FEDEARROZ) Federación Nacional de Cafeteros (FNC) Asociación de Bananeros del Magdalena (ASBAMA) Instituto de Hidrología, Meteorología y Estudios Ambientales

(IDEAM) Ministerio de Agricultura de Colombia

Output Users: Next user –technicians and researcher's farmer associations and gremios use agro-climatic prediction tools End users – Farmers of national federations and gremios. In long term, potentially more than 500000 farmers. Ecosaga – Environmental responsibility commercial association

Evidence Outcome: Outcome Harvesting Report: How Colombian Agriculture Producers in Various Sectors Benefit from National Agroclimatic Bulletins and Technical Agroclimatic Roundtables , by Kemly Camacho. 2016. Evidence of the use of agronomic manuals is attested by the number of page views and downloads (>3,500 views and >1,000 downloads each).

Output Used: Research outputs were used to build capacity in farmers' organizations as well as in IDEAM. Regional MTAs operate sustainably to analyze the national bulletin and localized climate forecasts and agronomic recommendations. Within the MTAs, outputs from CIAT-CCAFS research are shared and relationships between regional actors (farmer associations/public/private institutions) are facilitated.

References Case: Blundo Canto, G; Giraldo, D; Alvarez-Toro, P; Perez, L; Gartner, C. 2016. Local, reliable and timely agro-climatic information: a requirement of Colombian farmers. CCAFS Info Note. Available at: https://ccafs.cgiar.org/fr/node/52420#.WKhbBDKZNo4 Delerce, S., Dorado, H., Grillon, A., Rebolledo, M.C., Prager, S.D., Patiño, V.H., Garcés Varón, G., Jiménez, D., 2016. Assessing Weather-Yield Relationships in Rice at Local Scale Using Data Mining Approaches. PLoS One 11, e0161620. Esquivel, A; Ramirez-Villegas, J; Llanos, L; Agudelo, D; and Fernandes, K; Rojas, A; and Ruiz, F. in prep. Predictability of Colombian rainfall assessed by canonical correlation analysis. Jara C; Giraldo D. 2016. Manejo agronómico de fríjol. Cartilla 1. CIAT. Cali, Colombia. 8 p. Available at: https://cgspace.cgiar.org/handle/10568/76299 Jara C, Cotes CA. 2016. Manejo agronómico de fríjol. Cartilla 2. Cali, Colombia: CIAT. Available at: https://cgspace.cgiar.org/handle/10568/76613 CCAFS. 2015. Mesas Tecnicas Agroclimaticas. Available at: https://ccafs.cgiar.org/es/mesas-tecnicas-agroclimaticas#.WKXWAm8rJhE Barrios, C. 2016. Zonificación agroclimática para el arroz de riego en Colombia. MSc Thesis.

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions)

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

Annexes uploaded:

ID # 81 - Cauca is becoming a climate-smart department

Project(s): P112

Outcome Statement: Subnational authorities of Cauca in Colombia are addressing mechanisms for scaling up activities happening in Cauca Climate-smart Village (CSV) in the entire department. Departmental authorities, such as the Environmental Authority of Cauca (CRC), are investing funds to scale out climate-smart practices evaluated in Cauca CSV aiming to potentially reach 375.000 farmers. Evidence used to support this initiative is a result of several research projects jointly developed with the community led by CCAFS RPL and local partners in the CSV.

Research Outputs: Challenges of CSV-communities in Cauca-department such as increasing reduction of productivity in commercial-crops and low-diversification of staple-crops threatening food security (80% of basic food for consumption was bought in urban area) were being exacerbated with erratic rainfall behavior and longer drought periods [output-1]. Local participatory adaptation planning at farm-level demonstrated to be a effective mechanisms to involve family to actively address climate challenges while improving livelihood [output-5]. CSA practices demonstrated benefits in terms of permanent staples-crops (eg. beans&vegetables) production, harvesting and efficient-use of water and GHG reduction while saving income and identifying market opportunities [output-6,7,8]. Communities are aging and youth is each time more reluctant to work in agriculture while women have an increasing role in community agriculture [output-2]. Local to national policies in agriculture and climate change often do not include properly gender perspective, specially due to lack of knowledge and instruments on how to do it [output-3,4].

Research Partners: •CIAT is the CGIAR center more actively involved in Cauca CSV, it produced and co-produced several of the research outputs [2,3,4,6,7] including improved varieties evaluation, GHG modelling, CSA calculator to identify benefits in CSA-pillars, cost-benefit analysis of CSA options, market assessment, among-others. In addition, the centre has contributed to strengthen CCAFS engagement at national-level. •University-of-Cauca supported experimental processes with improved beans. •Comfacauca-University is using youth-related-research in CSV approach to strengthen its education-curriculum. •EcoHabitats is the local strategic partner that supports CCAFS in the implementation of the CSV approach by including social&innovation perspective. It was in charge of implementing CCAFS baseline studies, supporting and enabling work between CCAFS researchers and communities to produce research outputs. In addition, Ecohabitats led the engagement with local and departmental partners in Cauca and other regions of the country, such as Mahates in the Atlantic coast where the approach has been adopted by local partners.

Activities: Several fieldtrips to the climate-smart village (CSV), attended by local and subnational authorities, such as the CRC, Secretariat-of-Education of Cauca, Secretariat-for-Women-Affairs of Popayán (SMP), National-Presidential-Agency for Post-Conflict. These visits allowed them to know first-hand the CSV-approach and research projects impact on farmers' livelihoods. Generation of evidence and its systematization of results disseminated to key stakeholders through several technical meetings. Agreements signed to strengthen and scale-up the CSV-approach: agreement with CRC to develop environmental school projects and climate-smart practices; agreement with Comfacauca University to develop research for development activities in rural areas, including strengthen capacities of youth on leadership and territorial ownership. CRC and Family Compensation Fund of Cauca (Comfacauca) funded the above agreement. Several science-policy meetings/workshops were done with Secretariats of Women-Afairs, Agriculture and Education, civil-society and other

stakeholders to include climate-change and gender in sub-national-policies. Local-authorities also granted resources to implement climate-smart practices in the CSV.

Non-Research Partneres: Municipal Council of Popayán and Municipal Agricultural Technical Assistance Unit of Popayán (UMATA) acknowledged the importance of the CSV approach through the allocation of funds to implement CSA activities in Cauca CSV. Ecohabitats NGO is using evidence generated as input for scaling up and out the CSV approach and CSA options.

Output Users: Environmental Authority of Cauca (CRC) Secretariat for Women Affairs of Popayán (SMP)

Evidence Outcome: Annex 1: Meeting minutes on work plan development for inclusion of climate change in gender and agriculture policies. Annex 2: Joint action plan between Ecohabitats, COMFACAUCA and UNICOMFACAUCA Annex 3: Cooperation agreement between UNICOMFACAUCA and Ecohabitats Annex 4: Collaboration agreement between CIAT and CRC Annex 5:Communication from UMATA to Ecohabitats

Output Used: CRC used [output 1] to recognize the scope of Cauca rural-population challenges, specially youth [output-2], regarding climate&food-security and used [outputs 6,7] to know and estimate benefits of implementing CSA at a-larger-scale and prioritize activities in its annual-strategic-institutional plan. SMP used [outputs 3,4] as reference to position gender in climate-change&agriculture policies.

References Case: [1]. Paz et al. 2014. CCAFS Household Baseline report: Cauca, Colombia http://hdl.handle.net/10568/77728 [2]. Twyman et al. 2016. Gender survey report Cauca, Colombia http://hdl.handle.net/10568/75541 [3]. CIAT. 2016. How the gender focus make an impact in rural development projects in Colombia and how rural development projects make an impact on gender issues? http://hdl.handle.net/10568/75781 [4]. Tafur et al. Advances in the inclusion of interests and needs of rural women in agricultural public policies and climate change: the case of Colombia http://hdl.handle.net/10568/67364 [5]. Ortega et al. 2014. Manual on adaptation planning at local level https://ccafs.cgiar.org/sites/default/files/projects/attachments/manual-para-formulación-planes-prediales-adaptación-variabilidad-climatica.pdf [6]. CCAFS. 2016. Research activities and results on CSA options evaluation in Cauca CSV https://ccafs.cgiar.org/csv-cauca-colombia [7]. CCAFS, CIAT. 2016. Cost-benefit analysis on Cauca CSV CSA options evaluated - preliminary results - CSA prioritization framework. https://ccafs.cgiar.org/news/cost-benefit-analysis-latin-american-climate-smart-villages [8]. CCAFS, CIAT. 2016. Market assessment for small-holder farmers - preliminary results. https://ccafs.cgiar.org/csv-cauca-colombia#markets

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//112/caseStudy/P112 OCE 81 Outcome evidence.pdf

ID # 82 - 330.000 farmers in Honduras and Colombia use tailored seasonal forecasts+recommendations to adapt to climate variability

Project(s): P112, P42

Outcome Statement: MoAs of Honduras and Colombia are reaching-up to 330.000 farmers through 9 Local Technical Agro-climatic Committees (LTACs). LTACs provide recommendations generated through local-scientific knowledge-exchange using agro-climatic information to support decision-making. The initiative started as a project led by CCAFS in Colombia and based on the successful experience it was adopted by MoA in Honduras. Representatives from government, civil society, local-authorities, meteorological-services and farmers attend these committees to discuss climate-forecasts to decide which climate-smart practices should be undertaken.

Research Outputs: Main research results are related to downscaled agro-climate information which is disseminated widely among farmers and local institutions in an understandable language [output-1], and LTCAs methodology [output-2] developed by CCAFS, that provides concepts and methods to enable dialogue between scientists, local-actors and farmers through a knowledge platform using agro-climatic information and recommending CSA-options. Other research outputs used to achieve the outcome include: Results on the identification of key actors along CIS components (generation/translation/transference/use) [output-3]; Results on high climate vulnerability mainly related to low-adaptive capacity and lack of information inputs for decision-making processes in Honduras [output-4]. Colombia used this output to decide on leading a south-south learning-process with Honduras; Results on Honduran agricultural sector diagnostic on priorities regarding risk management in which agro-climatic information was a prioritized [output-5]; and Results on multilevel-stakeholder-analysis in Honduras [output-6] which showed the MoA as the key actor to lead agro-climate information efforts to reduce risks.

Research Partners: International Center for Tropical Agriculture (CIAT) leads the generation of agro-climate information and brings expertise on crop management to support the Secretariat of Agriculture and Livestock of Honduras (SAG) and the Colombian Ministry of Agriculture and Rural Development (MADR). CIAT also supports capacity building of Colombian producer associations. CIAT's research partners include IRI regarding climate research. Colombian and Honduran NARS (Corpoica and DICTA) are also an active part of the process, Corpoica coordinates some LTACs and DICTA technically supports InfoAgro (SAG's information area) on CSA recommendations.

Activities: Process started in 2013 when CCAFS facilitated an exchange-experience between Senegal–Colombia–Honduras. A delegation from Colombia-Honduras visited Senegal to learn how climate-information was helping farmers to adapt to climate-variability. In 2014, a Senegal-Honduras delegation visited Colombia to continue the learning-process. Then, CCAFS and MADR initiated in Colombia the LTAC-project in 2015. Afterwards, Colombia included in its-NDCs the establishment of 15-LTACs as a measure to promote food-security, enhance-adaptation and reduce GHG-emissions. In 2015, a Honduran delegation visited Colombia to learn about the LTAC initiative, months later the Minister of Agriculture and Livestock-SAG of Honduras visited CIAT to sign a collaboration-agreement. Agreement implementation began early-2016 with a sub-national strategy which CCAFS helped to develop. Also, a training program on climate-prediction and crop-modelling led by CIAT-CCAFS was carried-out targeting Honduran-technicians. CCAFS hired a researcher to work closely with SAG in Tegucigalpa-Honduras. Result: SAG established the LTACs Honduran-network. In 2016, SAG established six LTACs.

Non-Research Partneres: • Ministry of Agriculture and Rural Development (MADR) of Colombia • FEDEARROZ and FENALCE (rice and cereals producer associations) • Secretariat of Agriculture and Livestock (SAG) of Honduras • Permanent Commission of Contingencies in Honduras (COPECO) benefited from training program on climate prediction and crop modelling led by CIAT targeted to government personnel in Honduras. • U.S. Department of Agriculture (USDA) and Inter-American Institute for Cooperation in Agriculture (IICA) have financially supported SAG in the implementation of the LTACs strategy.

Output Users: MADR of Colombia, SAG of Honduras. Colombian and Honduran NARS. COPECO. FEDEARROZ and FENALCE which were trained on agro-climate information generation, and now use the information and lead some of the LTACs. Colombian and Honduran representatives of public and private institutions, local government, academia, civil society, farmers' associations and farmers.

Evidence Outcome: Letter of acknowledgment to CCAFS-support in Honduras. A)External-evaluation on Local-Technical Agro-climatic-Committees in Colombia-[reference#7] B)Colombian-INDCs(pag.6). 2015 in which 15-LTACs are prioritized to achieve adaptation-national-goals-[reference#12] C)National-Strategy for Adaptation to Climate-Change in Honduran Agri-food-sector (in which the government prioritizes agro-climatic services). English-summary attached-(Annex1-pag.1). D)Honduran government official-communications-[reference#8]. Annex1-english-summary attached. E)Case study Senegal-Colombia south-south exchange-[reference#13]

Output Used: MADR leads LTACs in Colombia based on [output-2] with local-coordination by FEDEARROZ, FENALCE and Corpoica, which also disseminate [output-1] widely in their networks aiming for losses reduction on crop production. Using [output-3] both MADR and local-coordinators know about effective mechanisms to provide information to farmers and channels to disseminate it.

References Case: Note: Given that most of the content is in Spanish, please see-the annex for reference. [1]Local agro-climatic bulletins https://ccafs.cgiar.org/es/boletin-agroclimatico-regional [2]Paper"Bridging the Gap between Climate Science and Farmers in Colombia" (submitted: Climate-Risk-Management-Journal in annex 2-attached) [3]Blundo et-al.(2016).Mapeo de Actores y Necesidades Información-Agroclimática en Maíz y Frijol en sitios piloto-Colombia. https://ccafs.cgiar.org/es/publications/mapeo-de-actores-y-necesidades-de-informaci%C3%B3n-agroclim%C3%A1tica-en-los-cultivos-de-ma%C3%ADz-y#.WKhV5m997IU [4]Bouroncle et-al.(2015).La agricultura de Honduras y el cambio climático: ¿Dónde están las prioridades para la adaptación http://hdl.handle.net/10568/45943. [5]Vasquez et al.2014.Estatus de la gestión de riesgos climáticos en el sector agroalimentario y su importancia para la seguridad alimentaria y nutricional en Honduras. http://hdl.handle.net/10568/35120. [6]Castro et-al.2015.Mapeo de la influencia de los actores sociales de diferente nivel para Centroamérica: cambio-climático y agricultura. http://hdl.handle.net/10568/70215. [7]External evaluation on Local Technical Agro-climatic Committees https://ccafs.cgiar.org/sites/default/files/projects/attachments/LTAC_case_in_Colombia_2016.pdf [8]VIDEOS: Honduran-President-speech https://youtu.be/HHDsP92xDXU?t=6m38s and SAG officer-interview https://youtu.be/8rmcWMXZc2o [9]Revista-Productor-Agropecuario.2016.¿Cómo-lograr-pronósticos-agroclimáticos-útiles? http://revistaproagro.com/lograr-pronosticos-agroclimaticos-utiles/ [10]SAG LTACS-Website: https://ccafs.cgiar.org/local-technical-agroclimatic-committees-honduras-sag-honduras [11]CCAFS.2016.Agroclimatic-information: a commitment-to-innovate and increase-food-security https://ccafs.cgiar.org/blog/agroclimatic-information-commitment-innovate-and-increase-food-security [12]Colombian-INDCs

http://www4.unfccc.int/submissions/INDC/Published%20Documents/Colombia/1/Colombia%20iNDC%20Unofficial%20translation%20Eng.pdf [13]UNEP, Case-study "Innovative climate approaches for smallholder farmers" Senegal-Colombia south-south exchange http://www.unep.org/south-south-cooperation/case/casefiles.aspx?csno=141

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions)

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//112/caseStudy/P112 OCE 82 Outcome evidence_f.pdf

ID # 83 - 8 Central-American countries are committed to CSA to support agriculture in a changing climate

Project(s): P118

Outcome Statement: The Central American Agricultural Council (CAC) is strongly promoting CSA within regional policies and agreements based on CCAFS analyses and technical support in relation to the implementation of CSA in the region. Through several announcements at ministerial and technical level, CAC has acknowledged CCAFS key role in strengthening agricultural policies in the region, including supporting CAC in the development of the CSA Strategy for Central America and Dominican Republic, in order to potentially benefit near 8 million farmers by 2030.

Research Outputs: Climate vulnerability analysis of Central-American countries showed that most agricultural areas will have to make changes regarding landscape structure and production systems [output-1]. In addition, policies, institutions and approaches will also have to adapt to new challenges with climate-change since holistic perspectives will have to include synergies and trade-offs between CSA-pillars, involving sectorial collaboration and inter-institutional efforts alignment [output-2]. In order to address the above challenges, future scenarios methodology proved to be efficient to guide policy-formulators to consider not only future climate but future socioeconomic contexts that can make current policies not valid [output-3]. Moreover, challenges on how to address gender and tools for it will need to be considered [output-5], as well as key stakeholders that can support further policy implementation considering their strengths and roles across scales. Potentialities of countries in implementing CSA in Central-American countries showed that agricultural sector can benefit of CSA-portfolios that maximize co-benefits [output-4].

Research Partners: • CIAT produced and co-produced several of the research outputs mentioned above (1, 4, 5), in addition the centre has contributed to strengthen CCAFS engagement in the region. • CATIE produced and co-produced several of the research outputs mentioned above (1, 4), in addition it is a strategic partner in the region supporting engagement with key regional stakeholders. As well as CCAFS, ECLAC and FAO, CATIE is part of the Inter-Agency Technical Support Group of the Central American Agricultural Council (CAC). • UCI is the coordinator for Latin America of CCAFS Future Scenarios program, therefore all outputs associated to future scenarios have been led or co-led with this research partner.

Activities: Several science-policy meetings, including workshops, were conducted at regional level, attended by technical representatives as well as senior advisors of Ministries of Agriculture of Central America and Dominican Republic. Crucial engagement strategy with the Executive Secretariat of CAC was key in order for CCAFS-CIAT to be nominated as part of the Inter-Agency Technical Support Group of CAC. This group influenced CAC's determination in promoting CSA in its policies evidenced in its formal announcement to embrace CSA as a regional body. A formal agenda of collaboration between CCAFS and CAC made possible for CAC to empower and increase its knowledge on the CSA approach and benefits and was key to appropriate CSA as the way to go for Central American countries in addressing climate challenges in the agricultural sector of the region which represents approx. 20% of regional GDP.

Non-Research Partneres: Both ECLAC (Economic Commission for Latin American and the-Caribbean) and FAO are part of the Inter-Agency Technical-Support Group of CAC, their role has been crucial in supporting CSA approach and collaborative work has been done regarding capacity building to technical staff and decision makers (eg. Capacity building platform on climate change and agri-food

sector led by FAO). Executive Secretariat of the Central American Agricultural Council is leading the policy formulation process regarding climate change, agriculture, risk management and food security.

Output Users: Executive Secretariat of the Central American Agricultural Council (SE-CAC) Regional Technical Committee (CTR), conformed by senior ministerial advisors Technical group of climate change and risk management (GT-CC&GR) gathers ministries staff from 8 countries.

Evidence Outcome: Letter of acknowledgment to CCAFS-support in Central-America (Spanish/English). a-b. Ministerial-Council-extraordinary & ordinary-meetings (Belize, Nicaragua, El Salvador). "CAC acknowledges CCAFS support and formally asks for research-inputs to support climate-change-adaptation in agriculture" c. VIII-GT-CC&GR-meeting, (Panama). "Regional CSA-strategy formulation proposal is approved in compliance of CTR-agreements". d. Regional-Declaration-on-CSA, COP21-Paris. e. Summary-of-agreements-related to CSA

Output Used: CAC has used research outputs to support with technical-sessions in relevant topics in discussions in ministerial and technical meetings. In adittion, SE-CAC is leading the formulation of the CSA-strategy for Central-America and Dominican-Republic based on the regional research-outputs. The CSA-strategy was approved by Central-American ministers of agriculture.

References Case: 1. Bouroncle C, et al. 2015. La agricultura de Costa Rica y el cambio climático: ¿Dónde están las prioridades para la adaptación? Copenhagen, Denmark: CCAFS. https://ccafs.cgiar.org/publications/archive?keys=D%C3%B3nde+est%C3%A1n+las+prioridades+para+la+adaptaci%C3%B3n&field_type_tid=All&field_themes_tid=All&field_regions_tid=All&language=All 2. Flores, E., et al.. (2014). Estado del Arte en Cambio Climático, Agricultura y Seguridad Alimentaria de República Dominicana Costa Rica, Honduras, El Salvador, Guatemala and Panamá. https://ccafs.cgiar.org/publications/archive?keys=cac&field_type_tid=All&field_themes_tid=5&field_regions_tid=13&language=es&field_year_ref_tid%5B%5D=16973 3. UCI; CCAFS. 2013. Report on building socioeconomic scenarios for Central America. Copenhagen, Denmark: CCAFS. https://cgspace.cgiar.org/rest/bitstreams/31973/retrieve 4. World Bank; CIAT; CATIE. 2014. Climate-Smart Agriculture Country Profiles for Latin America Series. Washington, D.C.: The World Bank Group (Costa Rica, Nicaragua and El Salvador). Link: https://ccafs.cgiar.org/es/node/46993#.WJ92ym997IU 5. Tafur M, et al.. 2015. Guía para la integración del enfoque de género en políticas agropecuarias y de cambio climático en América Latina. Copenhagen, Denmark: CCAFS. https://cgspace.cgiar.org/rest/bitstreams/58762/retrieve 6. Libertad Castro, et al. Mapeo de la influencia de los actores sociales de diferente nivel para Centroamérica: cambio climático y agricultura. CCAFS-2014. https://cgspace.cgiar.org/rest/bitstreams/65460/retrieve

Primary 2019 outcome indicator(s): # of regional/global organisations and processes that inform their equitable institutional investments in climate smart food systems using CCAFS outputs

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//118/caseStudy/P118 OCE 83 Outcome evidence_f_2.pdf

ID # 87 - Gender and Social Inclusion in CCAFS

Project(s): P125

Outcome Statement: GSI worked partners towards supporting gender research and policy engagement across CCAFS to ensure that reporting on gender and social inclusion was done. GSI also worked with African Working Group on Gender and Climate Change (AWGGCC) to ensure GSI results were included in the COP22 gender decision. Within the INDCs, 64 Non-Annex I countries made a reference to women or gender.

Research Outputs: Nelson, S & Huyer, S. 2016. A Gender-responsive Approach to Climate-Smart Agriculture. Practice Brief Huyer, S. 2016 gender and international climate policy: An analysis of progress in gender equality at COP21. Infonote Huyer, S. 2016. Closing the Gender Gap in Agriculture. GTD 20(2) 105–116 Cramer et al. 2016. Connecting Women, Connecting Men: GTD 20(2) 169–199 Gumucio et al. CCAFS WP 159. McKinley J et al. 2016. Gender Differences in Climate Change Perception and Adaptation Strategies: The Case of Three Provinces in Vietnam's Mekong River Delta, CCAFS Report Bryan et al. 2016. Integrating Gender into Climate Change Adaptation Programs: A Research and Capacity Needs Assessment for SSA. CCAFS WP163. Huyer et al. 2016 CCAFS GSI Strategy. CCAFS WP 171. Kristjanson et al. (2016) Addressing gender in agricultural research for development in the face of a changing climate: Where are we and where should we be going? submitted to IJAS

Research Partners: CARE International Women in Sciences and Technology (WISAT) IRRI CIMMYT UNIQUE forestry and land use GmbH

Activities: Side event at COP 22 in Marrakech in partnership with CARE and IFAD Participated in International Day of Rural Women through CGIAR Q&A Twitter Chat & published research highlight titled "CCAFS highlight shows technology helps women in celebration of the International Day of Rural Women'. Workshop for CCAFS staff from FPs and Regions and partners on Implementing Gender and CSA workshop Workshop for AWGGCC and AGN members to draft the Lima Work Programme on Gender Submission to UNFCCC. 2-day Gender Training and Sensitizing Workshop for Kenya's County Government policy makers Published several blogs/briefs including "Gender and international climate policy An analysis of progress in gender equality at COP21'; Training materials on 'Caja de herramientas para género e inclusión Investigación participativa en cambio climático y agricultura".

Non-Research Partneres: African working Group in Gender and Climate Change (AWGGCC) African Group of Negotiators (AGN) produced a UNFCCC SBI submission National governments in EA and WA FIDA - Kenya National Gender and Equality Commission - Kenya Africa Women Empowerment - Nigeria

Output Users: African working Group in Gender and Climate Change (AWGGCC) African Group of Negotiators (AGN) National Governments in East and West Africa Researchers at CCAFS and other CGIARS center and CRPs

Evidence Outcome: Gender decision (-/CP.22) was reached during COP22 in Marrakech. 64 of the INDCs mention gender. Several journal papers were published that used sex disaggregated data indicators.

Output Used: 1. Outputs were used by parties and observers at national and continental level to the UNFCCC, and informed their perspectives on how gender and social inclusion 2. Training and capacity building of policy makers

References Case: AGN and Kenya SBI submission on Lima Work Program on gender to the UNFCCC Nyasimi et al. Africa advancing and augmenting the UNFCCC Lima Work Programme on Gender Huyer, S. and Nyasimi. 2016. GAP Update: Gender and Climate Change.

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools # of low emissions plans developed that have significant mitigation potential for 2025, i.e. will contribute to at least 5% GHG reduction or reach at least 10,000 farmers, including at least 10% women. # of regional/global organisations and processes that inform their equitable institutional investments in climate smart food systems using CCAFS outputs

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

Annexes uploaded:

ID # 88 - Technical assistance to design an Environmental Information System for Cote d'Ivoire

Project(s): P207

Outcome Statement: Designing a functional and efficient EIS for CDI will greatly improve the country's ability to monitor key environmental and climate data and thereby lead to evidence-based decision-making.

Research Outputs: During the implementation process a number of relevant documents were prepared that serve as blueprints for implementing the EIS

Research Partners: ENDA

Activities: Several technical workshops were carried out with national stakeholders to achieve buy-in and develop the blueprint for an EIS that is both effective and owned.

Non-Research Partneres: Ministry of the Environment and Sustainable Development of Cote d'Ivoire

Output Users: National stakeholders in agencies; ministries

Evidence Outcome: Implementation is ongoing, but the summary document showcasing the work has a foreword by the minister of the environment and the director of the CTCN, indicating the political will behind the work.

Output Used: The output is being used to set up a national EIS

References Case: Chenevoy A, Neufeldt H, Diby L, Ahmad M, Gaye A, Ba L, Fall S, Laure A, Spensley J, Kumassi PK, 2016. Strengthening decision-making to address climate change through the design of an environmental information system for Côte d'Ivoire. Climate Technology Centre and Network, Copenhagen

Primary 2019 outcome indicator(s): Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions)

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//207/caseStudy/CTCN publication - french 6[3].pdf

ID # 90 - Climate information services reach Northern Ghana farmers through a market-led ICT approach

Project(s): P90

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

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

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

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

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

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

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

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

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

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions)

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

Annexes uploaded:

ID # 91 - Mexican government provides support for scaling out technologies for better N management.

Project(s): P22

Outcome Statement: Informed by a robust evidence base on the utility of optical sensor-based technology, the Mexican government is support the training of extension staff and farmers to scale the use of optical sensor N technologies and best practices in several regions of Mexico resulting in consistent savings in N fertiliser use without any yield penalty. With USDA funding, we will explore how this work can help inform NDC in 2017.

Research Outputs: Millar, N., Kahmark, K., Urrea, A., Robertson, P. and Ortiz-Monasterio, I. (2017) Nitrous oxide response to nitrogen fertilizer in irrigated spring wheat in the Yaqui Valley, Mexico. Agriculture, Ecosystems and Environment. (In Press). Ortiz-Monasterio, I., U. Schulthess, B. Govaerts and C. Dobler . "From GreenSeeker to GreenSat." Modernización Sustentable de la Agricultura Tradicional MasAgro (CIMMYT) presentation. Available at: http://www.slideshare.net/CIMMYT/from-greenseeker-to-greensat.Accessed on May 3, 2015. Written inputs to the Membership of the Mexican group lead by the Colegio de Postgraduados (COLPOS) that is looking to develop emissions factors for wheat and maize across different locations in Mexico. Series of workshop and training reports in Spanish.

Research Partners: Dr Phil Roberston, Kellogg Biological Station, Michigan State University Department of Plant, Soil and Microbial Sciences, Michigan State University. Colegio de Postgraduados en Ciencias Agricolas. Texcoco

Activities: CIMMYT and partners have adapted the GreenSeeker for use under Mexican conditions thereby allowing farmers in the three major wheat producing regions of Mexico (Southern Sonora, Mexicali Valley and El Bajio), which together cover 75% of the 666,000 hectares of wheat production in Mexico) to reduce N2O emissions by at least 25%, while maintaining grain yield. In the State of Guanajuato, the state government has supported a network of farm advisers to scale out the optical sensor This technology has been successfully transferred to farmers under different government programs. In addition, we have successfully transferred this technology to farmers growing barley and maize showing similar reductions in N2O emissions.

Non-Research Partneres: Key partners include farmers organisations, extension staff and Secretariat of Agriculture, Livestock, Rural Development, Fisheries, and Food Supply (SAGARPA – Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación).

Output Users: State farm advisors and cooperatives in states of Sonora and Guanajuato and private farm advisers Baja, California

Evidence Outcome: Letters and email between CIMMYT and SARGAPA that show links between the research of CIMMYT and Government support for scaling of the N technologies.

Output Used: In the state of Sonora we have been working with farm advisers that belong to the farmers cooperatives. In Baja California we worked with private farm advisers and have provided funding to them for three years so that they become familiar with the technology.

References Case: Series of training and workshop reports in Spanish (example uploaded).

Primary 2019 outcome indicator(s): # millions of hectares targeted by research-informed initiatives for scaling up low-emissions agriculture and preventing deforestation # of low emissions plans

developed that have significant mitigation potential for 2025, i.e. will contribute to at least 5% GHG reduction or reach at least 10,000 farmers, including at least 10% women.

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//22/caseStudy/Julio 2016.rar

ID # 92 - Paddy rice project supports Vietnam's move from INDC to NDC

Project(s): P21

Outcome Statement: Decision makers in the Vietnamese MARD included AWD in their NDC as key mitigation technologies in the agriculture sector. With CCAFS and CCAC support, the Paddy Rice Component work was presented during the 2nd Consultative Meeting on the INDCs of Vietnam's agriculture sector. Attended by government officials and scientists this event provided a fitting avenue for providing input into implementation plans for priority mitigation measures. CCAFS and CCAC input was acknowledged as highly important in the minutes of the workshop.

Research Outputs: In 2015 and 2016, a series of workshops have been conducted in Vietnam to identify opportunities for AWD implementation as well as barriers of adoption. A national working group has been established to drive the scale-out process of water saving technologies in rice and to conveyed key findings to decision makers, particularly in MARD. Furthermore, climatic AWD suitability maps have been created together with IAE and key stakeholders in different provinces have been mapped together with IPSARD in order to guide the dissemination process. The new mitigation kiosk (http://GHGmitigation.irri.org) has been launched as a one-stop shop for all types of information around mitigation in rice.

Research Partners: Institute of Agricultural Environment (IAE) Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD)

Activities: Support in the INDC initiatives serves as entry points for influencing and mainstreaming CSA options in the mitigation agenda in agriculture. CCAFS and CCAC supported the 2nd Consultative Meeting on Vietnam's INDC which was held on 23 June 2016 in Hanoi. The Paddy Rice Component work was presented during this planning workshop. Core project partners of the national working group established within the CCAFS project actively participated in this exercise. Former dissemination targets of AWD and the related technology "mid-season drainage" and their adjustment have been discussed between the CCAFS project leader and IAE in preparation of the consultative meeting. Participation in several national and international workshops and meetings as well as constant and continued engagement with national partners paved the ground for this outcome.

Non-Research Partneres: None

Output Users: Vietnam's Ministry of Agriculture and Rural Development (MARD)

Evidence Outcome: CCAFS and CCAC input was acknowledged as highly important in the minutes of the workshop (see annex).

Output Used: Members of the national working groups have conveyed Opportunities for Practice Change (OPCs) from project work shops. The climatic AWD suitability maps have received great interest and important feedback. They will be adjusted and improved to become integral part of the dissemination process.

References Case:
https://ccafs.cgiar.org/blog/viet-nams-agriculture-sector-hastens-emissions-mitigation-joins-global-climate-deal#.WKpU3W995hF
https://ccafs.cgiar.org/publications/workshop-report-applying-and-scaling-alternate-wetting-and-drying-technology-paddy-rice#.WKqJmm995hE
https://ccafs.cgiar.org/publications/workshop-report-national-planning-phase-1-ccac-paddy-rice-com

ponent-vietnam#.WKqJqG995hE
https://ccafs.cgiar.org/news/mapping-partners-right-lesson-stakeholder-engagement-vietnam#.WKqJ9m995hE
https://ccafs.cgiar.org/publications/climate-determined-suitability-water-saving-technology-alternate-wetting-and-drying#.WKqKNm995hE http://GHGmitigation.irri.org

Primary 2019 outcome indicator(s): # of low emissions plans developed that have significant mitigation potential for 2025, i.e. will contribute to at least 5% GHG reduction or reach at least 10,000 farmers, including at least 10% women.

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//21/caseStudy/minutes_national INDC workshop Vietnam_June 2016.docx

ID # 93 - Kenya prepares GCF concept note for low-emission and climate resilient dairy development

Project(s): P111, P13, P12

Outcome Statement: With four years of technical and financial support from CCAFS, Kenya's State Department of Livestock has completed the development of a Green Climate Fund (GCF) concept note for a dairy NAMA. The NAMA, titled "Low-emission and climate resilient dairy development in Kenya," will catalyze investments of USD222.6 million in Kenya's dairy sector, directly impact over 150,000 households and reduce emissions by 8.80 MtCO2e over the 10-year implementation period.

Research Outputs: 1. Smallholder dairy methodology: Draft methodology for quantification of GHG emission reductions from improved management in smallholder dairy production systems using a standardized baseline (http://hdl.handle.net/10568/77602) 2. Systematic review of the factors influencing the adoption of technologies, management practices and marketing channels in smallholder dairy production 3. 6 feasibility studies for the components of the NAMA, included as annexes in the GCF concept note. Studies a, b, and c will also be published as CCAFS info-briefs. a. Processor-led provision of gender-inclusive extension services to their suppliers b. Financial assistance for on-farm investments by farmers and cooperatives c. Increased commercial production and marketing of fodder d. Energy efficiency and renewable energy in cooling and processing facilities e. Adoption of biogas technologies by male and female dairy farmers f. Strengthened institutional and stakeholder capacities for scaling up low-emission dairy development 4. GCF Concept note (available on request but not yet for public dissemination)

Research Partners: ICRAF: Project leader (2015-onwards), project P13 ILRI: Conducted research on best climate-smart dairy practices, maintained partnerships with Kenyan ministries UNIQUE Forestry and Land Use: Research leader FAO: Partner in capacity building/training for the Ministry of Agriculture, Livestock and Fisheries on NAMAs

Activities: This outcome was the result of nearly 4 years of research and engagement by CCAFS, ICRAF, ILRI and UNIQUE Forestry and Land Use with ministries, donors, dairy companies, and producers' organizations. Numerous stakeholder consultations informed project design, including: • A multi-stakeholder platform meeting (September 2015), attended by 47 farmers, dairy, biogas and financial companies, and national and county government officials, served to raise awareness and obtain feedback on the scope and objectives of the project. • Consultations (November 2015) were held with 45 farmers, farmer organization and county government representatives from 8 counties (Muranga, Nyeri, Nyandarua, Kirinyaga, Meru, Embu, Tharaka Nithi, Machakos) to integrate the project with ongoing initiatives at county level. • A second multi-stakeholder platform meeting (August 2016), attended by 71 representatives of dairy and biogas companies, financial institutions, civil society organizations, development partners and government institutions, at which the draft project concept was shared and discussed.

Non-Research Partneres: 1.Kenya's National Treasury: GCF National Designated Authority, responsible for submission of the concept note to GCF 2. Dairy processors (e.g. Brookside, New Kenya Cooperative Creameries): Involved in technical design of the concept note and dissemination of best practices to suppliers 3. IFAD: GCF Accredited Entity for the project

Output Users: The State Department of Livestock, part of the Ministry of Agriculture, Livestock and Fisheries (MoALF): Executing Entity for the NAMA; co-developed the concept note and submitted to the National Treasury 2. Kenya Dairy Board: Dissemination of project practices and lessons throughout

the sector and across counties to support wider replication

Evidence Outcome: (1) The concept note for the dairy NAMA, as submitted by Kenya's State Department of Livestock to the National Treasury and (2) a letter accompanying the concept note submission from the Principal Secretary of the State Department of Livestock, citing support from CCAFS. NOT YET FOR PUBLIC DISSEMINATION

Output Used: Outputs were used directly by the State Department of Livestock and Kenya Dairy Board to formulate the GCF concept note and disseminate practices. IFAD and Government of Kenya have committed USD 14.58 million and USD 2.23 million, respectively, in project co-financing.

References Case: Kenya's Dairy Nationally Appropriate Mitigation Action (NAMA) Concept Note: A Proposal for a Green Climate Fund Project. January 2017 NOT YET FOR PUBLIC DISSEMINATION

Primary 2019 outcome indicator(s): # of low emissions plans developed that have significant mitigation potential for 2025, i.e. will contribute to at least 5% GHG reduction or reach at least 10,000 farmers, including at least 10% women.

Link between outcome story and and the FP Outcome(s): Enhancement of equitable access to assets and participation in decision making for women in household dairy enterprises will be a key focus of the gender-inclusive extension approaches promoted by the NAMA. Benefits are expected for 152,700 households, with an estimated population of about 800,000 people, including 400,000 women and youth.

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//111/caseStudy/NAMA Kenya Dairy NAMA GCF concept Note,January 2017.pdf

ID # 95 - Donors and NGOs acknowledge the potential of R4D on gender in agroclimate information

Project(s): P48

Outcome Statement: Despite early stages of implementation and uncertainty in CCAFS-funding, Fondation Ensemle approved a bilateral grant in 2016 to support the work in Cambodia. This was possible through a rigorous 3-country baseline research that highlighted the need and potentials for R4D to address certain gender & social inclusion inequalities through improved agroclimate information. The project-design is flexible both horisontally and vertically, to be easily adapted to different contexts. Recognising the role of development-NGOs, CARE became a CCAFS-partner for Phase2.

Research Outputs: Scoping studies and Project proposal for P48 and Project Information sheet Baseline studies in Vietnam (Deliverable 2015), Cambodia (see deliverable 2016) and Laos. A synthesis of the three baselines is in preparation (Deliverable in 2017). Research protocol for ACIS (under refinement as projects are being implemented in Cambodia and Laos, draft available on request)

Research Partners: CARE Cambodia : work with the Ministry of Water Resources and Meteorology (MoWRAM) and local partners (CEDAC) to implement the project and facilitate training, with technical backstopping from ICRAF and CARE Vietnam as required ICRAF Vietnam : contributes to research, documentation and support, making connection with other CCAFS-projects/partners and CSVs. CARE Denmark : resource mobilisation and communicating findings to donor networks

Activities: The outcome is the result of research-and-development collaboration, leading to strong evidence for the needs for agroclimate information and potential knowledge/capacity gaps as well technical limitations. The start-up in Vietnam provided some show-cases. This particular funding was possible through CARE Denmark's active interaction with donors based in Europe.

Non-Research Partneres: Cambodian Centre for Study and Development in Agriculture (CEDAC) is the main partner for implementation on the ground in ACIS and many other projects in Cambodia

Output Users: The outputs ensured bilateral funding in 2016 (and CARE Laos in 2015). Both CARE and ICRAF's active contributions ensures that ACIS-outputs reach policy consultations and a wider audience (extension, NGOs, Monsoon Forum, ASEAN-CRN, UNDP, FAO, IFAD). Our combined experiences of research-development-collaboration opens up for better targeted communication to specific usergroups.

Evidence Outcome: Direct evidence in approved funding. from Fondation. We observe new invitations to (1) consultation meetings and information-sharing events regarding ACI e.g. FAO/GACSA Webinar and Compendium http://www.fao.org/gacsa/webinars/en/; (2) invitations to join project proposals with ACI-components, e.g. with UNWomen and UNDP.

Output Used: Research outputs are constantly updated and used to demonstrate the need for ACIS in socially, environmentally and economically exposed areas at networking and presentations at donor forums (events and bilateral meetings), in policy dialogues.

References Case: Coulier M & Wilderspin J. 2016. Baseline Study. Findings and recommendations for ACIS project Cambodia. File uploaded below.

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate

informed services that support rural communities

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//48/caseStudy/7. ACIS project - Baseline report Cambodia (final).pdf

ID # 97 - Analysis of Paris Agreement pledges informs development planning and UNFCCC negotiations

Project(s): P111, P117, P125, P91

Outcome Statement: In November 2015, CCAFS published the first analysis of countries' Intended Nationally Determined Contributions to the Paris Climate Agreement. This research shaped subsequent planning among development organizations by demonstrating a country-driven demand for mitigation of agricultural emissions. Donors (World Bank and USAID) and impact investors (Root Capital) incorporated the analysis into their debates and strategies for low-emissions development assistance. Country negotiators used it to demonstrate the linkages between adaptation and mitigation in the agriculture sector.

Research Outputs: 1. Maps of agriculture in INDCs (D2663) 2. Data set (excel) on agriculture in INDCs (D2663) 3. Web page in CCAFS "tools" collection on agriculture in the INDCs 4. Info note: Agriculture's prominence in the INDCs (D1623) 5. Info note: How countries plan to address agricultural adaptation and mitigation (D1624) 6. Info note: Agriculture's contribution to national emissions (D1622) 7. Press release: Majority of national climate plans address agriculture, but most lack funds for footing annual USD 5 billion bill 8. Presentation at SBSTA side event (D1410, D2684) 9. Presentation at CCAFS Agriculture Negotiators Workshop (D2871) 10. Presentation at USAID Global Learning and Evidence Exchange workshop, Zambia March 15, 2016

Research Partners: This research was conducted primarily by CCAFS, with contributions from Flagship 1 (Priorities and Policies), Gender and Social Inclusion, the Coordinating Unit, and Copenhagen University. Ongoing partnerships with organizations such as World Bank, USAID, Root Capital, and country negotiators (especially Costa Rica, Vietnam, and Colombia) contributed to strong demand for the research products. FAO hosted a CCAFS workshop for COP22 agriculture negotiators.

Activities: FP3 collaborated with the CU on a press release and media campaign, capitalizing on discussion of INDCs at COP21. Lini Wollenberg and Meryl Richards gave media interviews and presented the results of the analysis at (1) an FP3-led SBSTA 44 side event, (2) a CCAFS global meeting for agriculture negotiators before COP22, (3) a USAID Global Learning and Evidence Exchange workshop. Upon request from individuals at World Bank, FP3 provided the database and carried out specific analyses (e.g. specific countries that included livestock mitigation). World Bank circulated key messages among staff of their Global Solutions Group on Climate Smart Agriculture and Global Practice for Agriculture. CCAFS also contributed analysis and text to the World Bank discussion paper, "Making climate finance work in agriculture." By request, FP3 presented the NDC analysis to USAID staff in two workshops and to UNFCCC country negotiators in a pre COP22 preparation workshop.

Non-Research Partneres: World Bank USAID Root Capital

Output Users: World Bank USAID Root Capital COP22 agriculture negotiators

Evidence Outcome: The outputs are referenced in a World Bank Discussion paper: http://documents.worldbank.org/curated/en/986961467721999165/Making-climate-finance-work-in-agriculture Also, see full documentation in attached annex

Output Used: 1. Prepare briefing notes for 2016 WB Spring Meetings 2. Inform WB's Climate Change Action Plan 3. Design agriculture project components (WB) 4. Guide USAID planning of LED 5. Determine implications of INDCs for smallholder agricultural finance (Root Capital) 6. Demonstrate the linkages between adaptation and mitigation (COP22 ag negotiators)

References Case: Press release: https://ccafs.cgiar.org/news/media-centre/press-releases/report-majority-national-climate-plans-address-agriculture-most#.WKHOKhIrJ0c World Bank study: http://documents.worldbank.org/curated/en/986961467721999165/Making-climate-finance-work-in-agriculture Entry on CCAFS "tools" page: https://ccafs.cgiar.org/agricultures-prominence-indcs-data-and-maps#.WKHNoxIrJ0d Maps and data: http://hdl.handle.net/10568/73255

Primary 2019 outcome indicator(s): # of low emissions plans developed that have significant mitigation potential for 2025, i.e. will contribute to at least 5% GHG reduction or reach at least 10,000 farmers, including at least 10% women.

Link between outcome story and and the FP Outcome(s): The analysis provided evidence that developing countries consider agriculture a priority for climate adaptation and mitigation; donors are using the analysis to guide their funding priorities.

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//111/caseStudy/P111 outcome case study statements from research users.pdf

ID # 98 - Index Insurance Research Leads to Regulatory Reviews in Honduras

Project(s): P118

Outcome Statement: The IRI developed a technical note detailing the index insurance product designed based on participatory processes with end-users and an experimental dry-run in the field working with drought-vulnerable farmers in Honduras. The technical note was presented to the insurance market regulator. Based on the document, it identified regulatory concerns for the implementation of this type of products. Therefore the regulator recommended necessary adjustments for commercial implementation of indexed products in Honduras, helping break barriers to implement climate risk management mechanisms.

Research Outputs: In 2015, the IRI carried out a dry-run experiment following participatory exercises in the field that defined the drought index insurance product for beans and maize in Honduras [Output-1] based on IRI's previous research [output-5]. Research results showed that a index-based insurance was feasible to implement due to its technical and participatory approach, therefore a prototype was developed for simulation with farmers and stakeholders involved [output-3]. Training program [Output-2] was also developed in order to facilitate implementation and further scaling. Information useful for farmers decision-making regarding climate implications in crop systems was disseminated [Output-4].

Research Partners: IRI leads the implementation of the project on index-insurance in Honduras Zamorano University- played a key role in coordinating and supporting the implementation of field research activities.

Activities: The key activities that contributed to the outcomes were the many workshops and meetings conducted with key stakeholders, which led to the identification of barriers and the need to develop a technical note that would facilitate the commercialization process both from the regulatory and private sector stand-point. These meetings included stakeholders such as: insurance companies, microfinancing institutions, USAID, IDB, the Insurance Chamber, and other public and private sector stakeholders who have participated in previous insurance initiatives.

Non-Research Partneres: SAG(Secretariat-of Agriculture&Livestock) acted as liaison with other public-sector-actors and supported field research, helping identify key barriers to implementation. REDMICROH(network-of-microfinance-institutions-in-Honduras) provided guidance and coordinated meetings with private sector stakeholders to identify existing barriers. MPL-Seguros (local-insurance-broker) reviewed technical note and provided insight into additional key components that would be necessary before implementation, from experience working in developing innovative products in the insurance market. MiCRO(regional-microinsurance-player) hosted a regional workshop for regulators, generating awareness on the need to allow for innovation in insurance regulations.

Output Users: The key-output-user is NCBI (Regulatory body). After participating in a regional workshop and meetings with the IRI team, NCBI acknowledged the value of the work done, supported the initiative and agreed to work closely to remove barriers so that this type of products could be implemented in Honduras.

Evidence Outcome: Annex 1. Formal communication to CCAFS-IRI from National Commission for Banking and Insurance-NCBI (attached-evidence not publicly available.)

Output Used: Results from outputs-1&3 were the base to present the novel-output to higher-authorities including NCBI aiming to support adjustments in insurance-regulatory-framework.

Microfinance-institutions are using output-2 as a-tool for their activities. Output-3 is being used by SAG as an additional input for advisory-services. A note included new-product innovative-features to facilitate future commercialization-processes.

References Case: Output-1. Reports on participatory workshops implemented to develop the index insurance prototype https://marlo.cgiar.org/projects/ccafs/deliverable.do?deliverableID=550&edit=true Output-2. Tailored training and implementation materials for index insurance- SNIID https://marlo.cgiar.org/projects/ccafs/deliverable.do?deliverableID=1065&edit=true Output-3. Commercial Pilot and Scoping for Scaling an Index Insurance Product https://marlo.cgiar.org/projects/ccafs/deliverable.do?deliverableID=1463&edit=true Output-4. Enhanced climate and agriculture information bulletins for informing climate risk management decisions https://marlo.cgiar.org/projects/ccafs/deliverable.do?deliverableID=1464&edit=true Output-5. Index insurance for managing climate-related agricultural risk: toward a strategic research agenda https://cgspace.cgiar.org/handle/10568/34948

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//118/caseStudy/P118 OCE 98 Outcome evidence.pdf

ID # 99 - Draft laws developed and subject to national consultations in Madagascar and Benin (emerging outcome)

Project(s): P66

Outcome Statement: In Benin and Madagascar, national teams, which included competent national authorities for the implementation of the ITPGRFA and the Nagoya Protocol, drafted laws for national implementation of both instruments. Their work was based on CCAFS' science: 1) demonstrating how to identify and access potentially adapted genetic materials of local food security crops negatively affected by climate change using the ITPGRFA and 2) analyzing options for national and community level implementation of the ITPGRFA and Nagoya Protocol.

Research Outputs: Baseline studies for each country that include information about the state of biological diversity conservation and potential interventions to safeguard threatened diversity; past genetic resources collecting and ABS agreements; existing laws and policies affecting ABS; areas where high levels of biodiversity coincide with high levels of rural poverty; and areas under stress where introduction of genetic diversity from elsewhere could address communities' vulnerabilities. Two policy briefs related to policy options and processes that need to be followed to put systems in place in each country. A white Paper outlining the plan for developing necessary policy instruments to implement both agreements in both countries. Draft laws to implement both agreements in both countries (a unified single law in Benin; two separate laws in Madagascar). A Website containing information about the different workshops, trainings and other events conducted throughout the implementation of the project.

Research Partners: The ABS Capacity Development Initiative, and the two lead agencies in both countries (Service d'Appui à la Gestion de l'Environnement (SAGE) and the Ministry of Agriculture (MinAgri) in Madagascar, and the CRASud/INRAB/Ministry of Agriculture and the ONG Cercle de Sauvegarde des Ressources Naturelles, in Benin).

Activities: Participatory workshops in the four case study communities, involving representatives from national agricultural research organizations and the National Focal Points of the ITPGRFA and Nagoya Protocol to document the impacts of climate change on local crops and options for locating potentially adapted materials in national and international collections. Participatory workshops for the communities concerning awareness raising about the two agreements and options for developing community biodiversity registries and ABS protocols. National level awareness-raising workshops in both countries to boost awareness about the utility of the ITPGRFA and Nagoya Protocol to adapt to climate change, promote community rights, technology transfer, information sharing and capacity building. National partners received technical support from the ABS Capacity Initiative and Bioversity for developing the White paper. The ABS Capacity Initiative, Bioversity, FAO Legal Department and the ITPGRFA Secretariat reviewed and commented drafts of national laws. Local and national level consultation meetings regarding draft laws developed.

Non-Research Partneres: The secretariats of the CBD and of the ITPGRFA, African Union Commission, Natural Justice.

Output Users: Participants in the national consultations including ministry representatives, NAROs, farmers, CSOs, municipal governments, tribal leaders, women's groups. National legal experts, who developed the draft laws and who were given technical support during the development of the interim measures. Competent authorities in both countries who organized subsequent consultation meetings.

Evidence Outcome: Draft laws. Reports documenting the awareness raising workshops and the minutes of the consultation meetings. Revised draft laws. We hope the laws will be approved by 2018. We will have an external review of the project in 2018-19; we can ask the external reviewers to write a piece for publication.

Output Used: The information gathered and documents developed were used in the awareness raising workshops and during the consultation workshops on the draft laws. The baseline studies and workshops allowed developing the roadmap, which in turn facilitated the development of the draft laws. These were subject of consultations and revised by experts.

References Case: Baseline study Benin: http://www.bioversityinternational.org/fileadmin/user_upload/campaigns/Darwin/Baseline_study_year1_Benin.pdf Baseline study Madagascar: http://www.bioversityinternational.org/fileadmin/user_upload/campaigns/Darwin/Baseline_study_year1_Madagascar.pdf Policy Brief Benin: http://hdl.handle.net/10568/75771 Policy Brief Madagascar: http://hdl.handle.net/10568/75772 White paper in English: http://www.bioversityinternational.org/fileadmin/user_upload/campaigns/Darwin/Roadmap_EN.pdf White paper in French: http://www.bioversityinternational.org/fileadmin/user_upload/campaigns/Darwin/Roadmap_FR.pdf Project Website: http://bit.ly/DarwinInitiative

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

Link between outcome story and and the FP Outcome(s): As this is an emerging outcome, we don't yet have an outcome case study

Annexes uploaded:

ID # 100 - iNGOs work supported by rapid farm characterization work

Project(s): P71

Outcome Statement: Smaller to medium sized iNGOs often do not have the critical mass to perform their own detailed targeting and monitoring and evaluation exercises. The RHoMIS tool has now been taken up for elaborate testing by two iNGOs and one GO to see whether it can be used to evaluate the effectiveness of ongoing outscaling of technological interventions and for improved targeting of future outscaling exercises.

Research Outputs: The last two years concentrated on developing the tool and testing it in field based applications (e.g. Hammond et al. 2017), as well as testing its ability to detect change in smallholder farm livelihoods in a relatively short time span (e.g. 3-4 years, the typical length of ag development projects). The latter has been done now in 5 CCAFS benchmark sites, and the first successful analyses have been summarized in a journal paper recently submitted (Fraval et al., submitted). In the newest surveys we have integrated a, what we call, 'motivations and aspirations' module to evaluate the openness to innovation of different farmers (framework developed in Hammond et al., accepted, Ag Systems), thereby allowing us to bring together information on farm livelihood characteristics, ongoing changes in land use, ag productivity and livelihood orientation, and motivation information, giving a us unique insight into the outscaling potential of interventions.

Research Partners: ICRAF, Wageningen University, Bioversity International

Activities: RHoMIS tool development and testing in the field. Development of a specific motivation and aspiration module. Framework in R to automatically analyse the digital survey data. Setup of a dataserver (http://rhomis.net/formshare) and a website for dissemination (http://rhomis.net)

Non-Research Partneres: TreeAID, CONABIO, Lutheran World Relief

Output Users: TreeAID, CONABIO, Lutheran World Relief

Evidence Outcome: Lutheran World Relief has used RHoMIS in an application in southern Kenya in project led by Bioversity International, while at the moment we are preparing an application together with TreeAID in northern Ghana. CONABIO will start first trials with the tool in Mexico in the coming weeks.

Output Used: Concrete uptake of the developed tool and the associated analysis framework

References Case: Fraval S, Hammond J, Lannerstad M, Oosting S, Sayula G, Teufel N, Silvestri S, Poole J, Herrero M, van Wijk MT. Livelihood strategies and food security in Lushoto, Tanzania: 'Step-up' at your own risk and 'hang-in' if you can. Submitted to Agricultural Systems. Hammond J, Pagella T, Smajgl A, Yi Z, van Wijk M, Xu J, Ward J, Su Y, Harrison R. Farm Types and Farmer Motivations to Adapt: Implications for Design of Sustainable Agricultural Interventions using the Example of Rubber Plantations in South West China. Agricultural Systems, conditionally accepted. Hammond J, Fraval S, van Etten J, Suchini JG, Mercado L, Pagella T, Frelat R, Lannerstad M, Douxchamps S, Teufel N, Valbuena D, van Wijk MT. 2016. The Rural Household Multi-Indicator Survey (RHoMIS) for rapid characterisation of households to inform climate smart agriculture interventions: Description and applications in East Africa and Central America. Agricultural Systems, in press.

Primary 2019 outcome indicator(s): # of regional/global organisations and processes that inform their equitable institutional investments in climate smart food systems using CCAFS outputs

Link between outcome story and and the FP Outcome(s): No more concrete link, snif, snif...

Annexes uploaded:

ID # 101 - New thematic areas mainstreamed into Burkina Faso's rural development sector plan through CCAFS scenarios work

Project(s): P90, P63

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

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

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

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

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

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

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

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

References Case: 1. Zougmoré R, Rutting L, Sidibé A, Ouédraogo J, Zida M, Rabdo A, Ouédraogo M, Balinga M, Vervoort JM, Partey S, Pale R, Ouédraogo M, Pouya Clarisse, Sondo MD. 2016. Formulation

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

Primary 2019 outcome indicator(s): # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

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

Annexes uploaded:

ID # 102 - Gender Differences in Climate Change Perception and Adaptation Strategies in Vietnam's Red River Delta

Project(s): P8

Outcome Statement: A gender survey has been initiated to collect data on male and female perception of climate change and their adaptation strategies. This activity allows to understand intra-household differences on the perception on climate climate change and the adaptation strategies. This activity also complements the surveys conducted in the Mekong River Delta and allows comparative analysis between the two regions. Data collection has been completed. Recommendations from these studies will be used to develop gender actions plans at the provincial level.

Research Outputs: 1- gender desagregated data in two provinces of the red river Delta: Thai Binh and Nam Dinh, on 200 rice farming households 2- report highlighting major findings intra-household differences about the perception on climate climate change and the adaptation strategies. 3- 1 peer-reviewed journal article will be published using the dataset in 2017 4- 1 Stakeholder meeting will be organized in 2017 to share the findings of this case study

Research Partners: - Vietnam National University of Agriculture - IPSARD

Activities: 1- Survey data collection in two provinces of the red river Delta: Thai Binh and Nam Dinh, on 200 rice farming households 2- Focus group discussion with key stakeholders in several districts of the two provinces 2- Policy dialogue with local and national stakeholder on the development of gender action plans and gender roles in climate change policies recommended in the Rice Restructuring Program (RRP)

Non-Research Partneres: None

Output Users: 1- IPSARD 2- VNUA 3- Department of Agriculture and Rural Development (DARD) 4- Local and national stakeholders 5- International organization with climate change focus 6- Climate Change Policy Hub (still under development) 7- PIRCCA team

Evidence Outcome: Recommendations from gender studies are expected to inform provincial stakeholders in developing action plans to implement strategies and climate change policies included in the Rice restructuring program. At the moment, the action plan has not yet been finalized.

Output Used: Data collected under the survey were analysed using an econometric modelling involving a two-step procedure: 1- A probit model to detect the household perception about the severity of climate change 2- A negative binomial count model to investigate how the severity of climate change determine the household adaption strategies.

References Case: The development of action plan is still on-going

Primary 2019 outcome indicator(s): # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

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

Annexes uploaded:

ID # 104 - Information design improves decision making in Food Security Early Warning System (FEWS) in Guatemala

Project(s): P42

Outcome Statement: One important part of the FEWS that is being constructed in Guatemala is the situation room in the municipalities. Experts from different institutions gather relevant information on food security and agroclimatic conditions, analyze it, make recommendations and then disseminate the information to relevant users. Digital support for this process was needed. SESAN adopted an online-based prototype of the situation room and a information product, both co-designed by Bioversity, SESAN and partners, for full implementation in the course of 2017.

Research Outputs: 1) Protoype of the information system including - an excel sheet with improved indicators and a weighing if the indicators used that will be used in the situation room to document the information from different sources and will lead the decision making in the council - a web-based, open-source tool with the reporting formats that the different institutions integrating the situation room use to structure and report their information - an improved information product, designed based on the results of a participatory process, that will be used to spread the information among next-users 2) Workshop report (unpublished) outlining the methodology for eliciting users preferences about design and layout as well as the experimental setting for understanding which indicators are important at what stage of a food security emergency for improved decision making

Research Partners: Centro Agronómico Tropical de Investigación y Enseñanza (CATIE) helped with the research by organizing field work, workshops, providing contacts to relevant experts and key stakeholder and providing expert opinion. CATIE was also engaged in the elaboration of the research outputs.

Activities: We conducted a data quality analysis of the data produced by sentinel site communities, contrasting it to historical data from other sources. We had several meetings with higher-level delegates from SESAN to understand the needs of the institution in terms of the improvement of the FEWS. We had two participatory workshops with in total 39 delegates from SESAN at the central and municipal level that gave the necessary inputs for designing the prototype. We developed and executed a structured online survey with 33 respondents that gave us information on information preferences in different food security scenarios (part of a student's thesis project). We are conducting an evaluation of the prototype with key users (March 2017) and we will also conduct a training for 13 higher level delegates in the implementation and the use of the prototype (March 2017)

Non-Research Partneres: NGO Acción contra el Hambre (Action contre le Faim ACF, Spain) is a valuable partner in the field with a broad network of contacts in SESAN and the FEWS community in Guatemala. ACF helped with logistics, organizational issues and expert input.

Output Users: Direct users of the protoype are the members of the situation room, integrated by different stakeholder from a variety of institutions (Municipality, SESAN, Health Ministry, MAGA, etc.). A broader group of users is reached by the information products that are disseminated by situation rooms (extension agents, professionals from different institutions).

Evidence Outcome: SESAN published a news release confirming the validation of the prototype (see first reference below). SESAN has a strong need for the situation rooms, as they are among its priorities in plans confirmed by the current administration (second press release). SESAN is therefore very engaged in their development and implementation.

Output Used: In the food security situation room, the different stakeholders use our (prototype) product to filter and evaluate information that comes from different sources. Other users receive the enhanced information products to take informed professional decisions in accordance with the food security situation/outlook.

References Case: Press release "Validan proceso de implementación de salas situacionales municipales de SAN" ("Process of implementation of food security situation rooms validated") http://www.sesan.gob.gt/index.php/noticias/region-central/item/2012-validan-proceso-de-implementacion-de-salas-situacionales-municipales-de-san Press release "Se implementan salas situacionales en SAN como metodo de gobernanza" ("Situation rooms are implemented as governance method") http://www.sesan.gob.gt/index.php/noticias/region-central/item/1948-se-implementaran-salas-situacionales-en-san-como-metodo-de-gobernanza

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions)

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

Annexes uploaded:
https://marlo.cgiar.org/data/ccafs/projects//42/caseStudy/InfoProduct_SituationRoom_Prototype.pdf

ID # 105 - Rwanda integrates participatory delivery of rural rural climate service into agricultural extension system

Project(s): P105, P121

Outcome Statement: During the first season of the project, trained Meteo-Rwanda, RAB, Twigire Mugenzi extension staff and farmer volunteers, and NGOs rolled out face-to-face delivery of climate services to farming communities in the initial four pilot districts. The process used PICSA guidance materials, seasonal forecast formats and communication protocols, and advanced high-resolution climate data. Survey-based evidence indicates that the PICSA process benefited most of the 2559 farm households directly trained, and had a multiplying effect that reached more than 32,000 farming households.

Research Outputs: PICSA manual and presentation materials, ENACTS high-resolution merged historic climate data, downscaled seasonal forecasts in probability-of-exceedance format, participatory seasonal communication protocols and presentation materials.

Research Partners: University of Reading, CIAT, IRI

Activities: Merging algorithm development, training and facilitation for Meteo-Rwanda to develop spatially and temporally complete high-resolution historical precipitation and temperature data. Training workshop for 31 senior staff from Meteo Rwanda, RAB, CIAT and NGOs, to become trainers on the PICSA methodology. Two PICSA training workshops for 63 (33% female) Farmer Promoters, Social Economic Development Officers, and Sector Agronomists. Supplemental training workshop on the new downscaled seasonal forecast format, and a participatory process for supporting farming communities to use the information, targeting the initial group of senior staff. The trained intermediaries rolled out training activities with 2559 farmers (48% female) in the four initial pilot districts.

Non-Research Partneres: Rwanda Meteorology Agency (Meteo-Rwanda), Rwanda Agricultural Board (RAB)

Output Users: Primary next users were the Socio-Economic Development Officers, Sector Agronomists, Farmer Field School Facilitators and Farmer Promotors within the Twigire Mugenzi national agricultural extension system. Institutional next users include: Metero-Rwanda, RAB, Send a Cow Rwanda, IMBARAGA Rwanda Farmers Organization and Development Rural du Nord (DERN).

Evidence Outcome: Effectiveness was assessed by a survey of 206 participating farmers (46% female), implemented in September 2016 by ten enumerators, using tablets and ODK software to transmit data to University of reading for analysis (preliminary report available on request, full report pending).

Output Used: PICSA materials were used to train intermediaries, who then used the materials to engage farmers in training and participatory planning. Gridded climate data were used to produce downscaled seasonal forecasts, which were introduced in a training workshop to senior staff to bring into PICSA field communication and planning activities.

References Case: Climate Services for Agriculture: Empowering Farmers to Manage Risk and Adapt to a Changing Climate in Rwanda Annual Summary and Quarterly Progress Report July-September 2016 Clarkson G et al., 2016. Initial results from PICSA M&E in four pilot districts in Rwanda. University of Reading. Unpublished report. del Corral J. 2016. ENACTS, Data Library, Maproom and GIS Training at Rwanda Meteorological Agency, Kigali, Rwanda, July 2016. http://hdl.handle.net/10568/77321 Siebert A, Kagabo DM, Vuguziga F. 2016. Training and Development of Downscaled Seasonal Forecasts for

Pilot Districts, Kigali, Rwanda, August 2016. http://hdl.handle.net/10568/77377 Hansen J, Kagabo DM, 2016. Training on understanding, communicating and using the downscaled seasonal forecast. http://hdl.handle.net/10568/78452 Nsengiyumva G et al., 2016. PICSA training workshop - training of specialist trainers, Nyamata, Rwanda, June 2016. Prepublication draft. Nsengiyumva G et al., 2016. PICSA training workshop - training of Sector Agronomists, SEDOs and Farmer Promoters, Muhanga, Rwanda, July 2016. Draft. Reference: Climate Services for Agriculture: Empowering Farmers to Manage Risk and Adapt to a Changing Climate in Rwanda Annual Summary and Quarterly Progress Report July-September2016 https://marlo.cgiar.org/data/ccafs/projects//105/deliverableDataSharing/CCAFSRwandaClimateServicesforAgricultureQ4Report.pdf

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//105/caseStudy/CCAFS Rwanda Climate Services for Agriculture Q4 Report.pdf

ID # 108 - The CCAFS Climate-Smart Village approach inspired the World Bank funded CSA project in Niger

Project(s): P87, P34

Outcome Statement: The learning agenda capitalized from the agricultural research for development (AR4D) in Kampa Zarma CSV served to inform the design of a $111 million World Bank-funded project on climate-smart agriculture in Niger. Through a pilot within two communes, the approach will inform the ground implementation within the 60 communes covered by the project in Niger. Direct beneficiaries are estimated to 500,000 farmers and agro pastoralists (including producer organizations, women, youth, and vulnerable groups) who will benefit from integrated commune sub-projects.

Research Outputs: Based on the principles of the Climate-Smart Village (CSV) approach designed by CCAFS as a means to addressing the need for proven and effective CSA options in the context of climate change, we conducted agricultural research for development (AR4D) in the Kampa-Zarma CSV in Niger since 2012. A model synthesizing the vision of such CSV by the community was designed through a participatory diagnosis. The research across years resulted into documenting how different practices, technologies, services, processes and institutional arrangements contribute to the pillars of CSA, and the synergies and trade-offs between these pillars. Evidence on which options generate CSA-related outcomes, where the options should be targeted, the costs involved, and their expected co-benefits or disbenefits (including gender and labour aspects) were also assessed. The above knowledge and learning agenda from the CSV were seen enough authoritative to inform the larger CSA project.

Research Partners: ICRAF was leading the overall project across West Africa, in collaboration with the WA Regional Program based at ICRISAT INRAN is the national agricultural research institute in Niger; INRAN coordinated the ground AR4D implementation in the CSV

Activities: In 2015, the world bank requested the support of CCAFS for the design of its CSA project in Niger. in this line, CCAFS attended the stakeholders concertation workshop for the project development. As a follow up request, CCAFS organized a field visit to the Kampa Zarma CSV AR4D site to show to a World Bank team, how concretely the CSV is being developed and what are current achievements. Participants visited various CSA options implemented in farmers' fields including FMNR, zaï and improved varieties of millet; but also discussed with communities. From the visit, the world bank representatives were convinced to adopt the CSV approach within the Niger CSA project. In addition to backstopping the project design, CCAFS is expected to develop 2 "climate-smart communes" that will serve to testing, through participatory methods, technological and institutional options. The project will start during 2017.

Non-Research Partneres: Nigeriens Nourish Nigeriens (3N)", an agricultural program initiated by Niger President. 3N leads and coordinate the overall CSA support project Ministry of agriculture of Niger, ministerial department superseding the overall project. The above two national institutions approved the inclusion of CCAFS Program in the implementation of the CSA support project.

Output Users: The "3N" initiative, leader of the CSA support project ICRISAT Niamey is also expected to contribute to the scaling up of proven technological packages and may use the CSV AR4D approach to reaching beneficiaries of the project.

Evidence Outcome: The final project document mentioning CCAFS as contributor to the CSA support

project in Niger The agreement of the government of Niger and ICRISAT Information note on the official approval with project document downloadable (http://www.reca-niger.org/spip.php?article1047)

Output Used: The WB office in Niger used the knowledge generated by CCAFS through the Niger CSV and other scientific evidences relating to the CSV AR4D approach to inform the development of the CSA support project. The field visit to the CSV site was insightful about the approach relevance and communities interests.

References Case: IDA 2016. Climate-smart agriculture support project in Niger. Rapport no 1745. Project appraisal document on a proposed credit. World Bank. Blog - A real opportunity to scale up Climate-Smart Villages in Niger. Available at: https://ccafs.cgiar.org/blog/real-opportunity-scale-climate-smart-villages-niger#.WKS32PK8SHQ

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

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

Annexes uploaded:
https://marlo.cgiar.org/data/ccafs/projects//87/caseStudy/PASEC_PAD_CSA_version_approuvee_EN.pdf

ID # 110 - APEC uses CCAFS technical expertise and inspiration to develop a new Pacific wide CSA initiative

Project(s): P101, P111

Outcome Statement: CCAFS engagement and technical support provided to the US Dept. of State led to: the framing of a Pacific wide CSA initiative covering both adaptation and mitigation and addressing land-based and aquatic-based food supplies, in the context of the Asia-Pacific Economic Cooperation. This multi-country effort puts CSA higher on national agendas, and provides further opportunity for CSA-related national efforts to come to fruition.

Research Outputs: Engagement from FP1 leader, SEA RPL and FP3 leader lead primarily to this. Expert guidance was provided throughout the year, and 2 workshops were attended which involved all APEC Economies. Presentations made synergised CCAFS learning around CSA, and contributed to decisions to focus on climate services and climate smart aquatic systems.

Research Partners: General CCAFS partners

Activities: Presentations made in Piura, Peru and Ho Chi Minh, Vietnam during 2016. Plus email based review of emerging CSA Initiative proposal. All in context of P101.

Non-Research Partneres: APEC Economies, US Department of State, USDA

Output Users: Department of State, Ministry of Agriculture Vietnam, plus all other APEC Economies.

Evidence Outcome: APEC Press release: http://www.apec.org/Press/News-Releases/2016/0511_PPFS_Climate.aspx APEC CSA Initiative Framework uploaded as Annex, CSA initiative proposal available upon request

Output Used: Synthesised learning of CSA supported the decision

References Case: Workshop reports: https://www.google.com.co/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&cad=rja&uact=8&ved=0ahUKEwiz3vTkyZ7SAhXHPCYKHX7EBR8QFgg1MAQ&url=https%3A%2F%2Faimp2.apec.org%2Fsites%2FPDB%2FSupporting%2520Docs%2F2711%2FCompletion%2520Report%2FATC%252002%25202015S_Report_APEC%2520CC%2520RDE%2520Workshop%2C%252021Sep2015.docx&usg=AFQjCNGN_7Q8rf8Y_Yaa9xOO5osTOxX4yw&sig2=hG9Cq3-rUNYh_XW_KtngzQ

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools # of regional/global organisations and processes that inform their equitable institutional investments in climate smart food systems using CCAFS outputs # of low emissions plans developed that have significant mitigation potential for 2025, i.e. will contribute to at least 5% GHG reduction or reach at least 10,000 farmers, including at least 10% women.

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//101/caseStudy/Framework for APEC Food Security Climate Change Program_FINAL_(25.09.16).pdf

ID # 111 - Scaling out climate smart agriculture through CSV approach

Project(s): P61, P119

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

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

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

Activities: 1. Identification, prioritization, testing and evaluation of a range of CSA technologies, practices and services in collaboration with farmers and other key stakeholders in the CSVR4D and other sites 2. Continuous engagement and communication with local, state and national partners 3. Development and dissemination of various communication products such as brochure, blogs and workshop reports

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

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

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

Output Used: Designing and implementation of different approaches of CSVs

References Case: 1. https://ccafs.cgiar.org/blog/nepal-government-vows-implement-climate-smart-village-model-part-key-policies-2016-17#.WKVpqjt95hE 2. Contract between CCAFS and ITC Limited (Attached) 3. Nepal Government's annual policy 2016-17 (attached)

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools # of public-private actors at national and sub-national levels are using new incentive mechanisms or business models/ markets that explicitly promote climate smart approaches along the value chain, using CCAFS science Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities # millions of

hectares targeted by research-informed initiatives for scaling up low-emissions agriculture and preventing deforestation # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//61/caseStudy/Policies and Programme of the GoN FY 2016-17.pdf

ID # 112 - Scenario-guided policy revision in Burkina Faso: National Plan for the Rural Sector II

Project(s): P63

Outcome Statement: Using the CCAFS scenario-guided approach, the National Plan for the Rural Sector (PNSR) of Burkina Faso was reviewed by stakeholders representing the government, academia, NGOs/CSOs, and the private sector. In addition to recommendations to make the new PNSR II more robust in the face of future uncertainty, the workshop yielded recommendations on how CGIAR research can support the PNSR II's objectives. The PNSR II is being finalized in early 2017, informed by these scenario-guided recommendations.

Research Outputs: The scenario-guided review process of the PNSR resulted in a workshop report detailing the recommendations produced during the workshop conducted in 2015. In addition, a concept note and a summary detailing the most important recommendations were formulated to guide the follow-up steps in the process of formulating the new PNSR II, including a workshop where policymakers and other stakeholders worked on the translation of the 'crude' policy recommendations into concrete objectives of the PNSR II. Two blogs, including a video showing interviews with participants in the process, can be found on the CCAFS website. Workshop Report: https://library.cgiar.org/bitstream/handle/10947/4188/Burkina_Workshop%20Report%20scenario-guided%20review%20of%20the%20PNSR_En_mz.pdf?sequence=1 Blogs: - https://ccafs.cgiar.org/news/ccafs-scenarios-tool-co-develop-policy-and-research#.WKW6llUrKUl - https://ccafs.cgiar.org/blog/using-future-scenarios-design-policy-and-research-together-burkina-faso#.WKW8Z1UrKUk

Research Partners: ICRISAT CIFOR Oxford University

Activities: A workshop was organized in Ouagadougou in July 2015, with the objective to review the current PNSR using the CCAFS West Africa scenarios, attended by representatives of SP/CPSA, researchers from different CGIAR centers and other research institutes, NGO/CSO representatives and rural private sector actors. A follow-up workshop was conducted in August 2016, attended by the director of SP/CPSA and key policymakers, and stakeholders who attended the 2015 workshop. The workshop was led by the CCAFS West Africa programme leader Dr. Zougmoré. During this workshop, the scenario-guided recommendations were translated into actionable activities for PNSR II. The Executive Secretary of SP-CPSA confirmed that the outcomes from the scenario process are of great value and are currently used in the formulation process of the PNSR II.

Non-Research Partneres: SP/CPSA - Sécretariat Permanent de la Coordination des Politiques Sectorielles Agricoles

Output Users: The output users are the government officials of SP/CPSA, who are currently formulating the PNSR II, informed by the output of the workshops: the scenario-guided policy recommendations.

Evidence Outcome: Mr. Ouédraogo, Head of Department Rural Sector Policies at SP/CPSA, stresses the value of scenarios methodology to inform the formulation of effective policies/plans. In this video, he says the output will be used to formulate PNSRII. He is keen to build long-term collaboration with CCAFS to effectively implement policies/plans: https://www.youtube.com/watch?v=pjjt3gVsb64

Output Used: The recommendations that resulted from the scenario-guided policy review workshop in 2015 were used to formulate objectives and activities for PNSR II in a second workshop. This output is currently used in the formulation process of the PNSR II.

References Case: Workshop Report: https://library.cgiar.org/bitstream/handle/10947/4188/Burkina_Workshop%20Report%20scenario-guided%20review%20of%20the%20PNSR_En_mz.pdf?sequence=1 Blogs: - https://ccafs.cgiar.org/news/ccafs-scenarios-tool-co-develop-policy-and-research#.WKW6llUrKUl - https://ccafs.cgiar.org/blog/using-future-scenarios-design-policy-and-research-together-burkina-faso#.WKW8Z1UrKUk

Primary 2019 outcome indicator(s): # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

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

Annexes uploaded:

ID # 113 - Assessing the economic, social and environmental impacts and potentials of 'small household, big field' model

Project(s): P8

Outcome Statement: One of the priorities included in the Vietnam Rice restructuring program is to fully utilize the potential of the 'small household, big field' model in agriculture, particularity in rice production. Of particular interest for the government is to better understand to which extent climate smart practices could be promoted through this model. This case study has been initiated to inform policies makers about options to promote and scale up CSA practices through the 'small household, big field' model.

Research Outputs: - Report highlighting (1) the economic, social and environmental impacts of the 'small household, big field' model, (2) Constraints and opportunities in up-scaling the 'small household, big field' model - Workshop report highlighting feedback and recommendations from policy makers and stakeholders

Research Partners: - IPSARD - VNUA

Activities: - Focus group discussions with various companies in Mekong and red River delta operating the 'small household, big field' model - Focus group discussion with farmers involved in the model - Interviews with local policy makers

Non-Research Partneres: Since this outcome case study only started in 2016, we have not yet added a non-research partner. But defintely this will be a priority in 2017. Few private companies involved in the 'small household, big field' model, have already been identified and could serve as partners.

Output Users: - IPSARD - MARD -MONRE -DARD -National and provincial stakeholders - Policy makers

Evidence Outcome: This is a case study with high potential for outcome as it fits into the government priorities within the Rice Restructuring Program. After the final output has been delivered, we expect that it will be used in the development of action plans for implementing the Rice Restructuring Program.

Output Used: The first draft report has been finalized and is currently being reviewed. The case study is expected to continue in 2017. Several stakeholder workshops will follow in 2017 to discuss the findings of the case study.

References Case: This is on on-going process. The case study has only started in 2016. We would expect outcomes in the years to come.

Primary 2019 outcome indicator(s): # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

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

Annexes uploaded:

ID # 114 - Continued collaboration with OECD shows their improved capacity to perform ex-ante scenario analysis

Project(s): P64

Outcome Statement: The partnership with OECD over the use of the IMPACT model continues to lead to opportunities to inform OECD policy-level work. The collaboration, which produced two publications in previous years, has seen the OECD embrace the development of scenarios for foresight analysis as a key instrument for engagement on policy discussions around food and agriculture. The result is a new report analyzing alternative futures, challenges and opportunities for the global agricultural systems, and offering solutions to face the challenges.

Research Outputs: OECD led report. OECD (2016), Alternative Futures for Global Food and Agriculture, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264247826-en

Research Partners: Martin von Lampe, from the OECD Directorate for Trade and Agriculture. This specific research output was also supported by the Research Program in Policies, Institutions and Markets (PIM) of the CGIAR

Activities: Worshops, targeted training on the IMPACT model, and continuing personal communication

Non-Research Partneres: None. This work was mainly bilateral, through interactions between IFPRI and OECD, and building on the results of the work brought forward by IFPRI and his partner institutions listed in the Partner section.

Output Users: OECD, as well as stakeholders and policy-makers engaged in policy-discussions informed by the OECD.

Evidence Outcome: Successful collaboration with OECD has led to greater legitimacy for the IMPACT model, which is now recognized as a leading source of projections for agriculture and food security trends. Leading institutions from various disciplines frequently seek out collaboration with us to extend their multidisciplinary work on global food policy.

Output Used: The scenarios highlight the fundamental uncertainties surrounding forward-oriented decision making, and point to the crucial importance of international co-operation across multiple policy areas. The OECD is calling for the scenarios in the report to being enriched, refined and challenged both inside the OECD and with the involvement of relevant stakeholders.

References Case: OECD (2016), Alternative Futures for Global Food and Agriculture, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264247826-en URL: http://www.oecd.org/publications/alternative-futures-for-global-food-and-agriculture-9789264247826-en.htm

Primary 2019 outcome indicator(s): # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//64/caseStudy/Alternative Futures for Global Food and Agriculture_OECD.pdf

ID # 115 - Integrating Top-down and Bottom-up mechanisms to catalyse policy change: Comparative case-studies in Mali and Ghana

Project(s): P1

Outcome Statement: Mainstreaming climate change, agriculture and food security into sub-national adaptation planning provides an opportunity to enhance the adaptive capacity of stakeholders across multiple levels. In Ghana and Mali, two inter-complementary approaches, standard top down and bottom-up approaches are being tested. In all two cases, the same methods were used to identify priorities and gaps to be addressed. These served as the entry point for the policy advocacy.

Research Outputs: In the context of Mali, the subnational scenarios revealed that the poor access to certified seed is a major barrier to crop intensification. The district platforms and the Flagship-1 team used the outcomes of the scenario to advocate for the raise of the Mali government budgetary allocations to agriculture, and for the government support for seed production and distribution. In Ghana, the policy advocacy took a slightly different route, starting with meetings with local communities to identify the existing/already developed local bylaws aimed to environmental protection. The platforms members works to design appropriate adaptation strategies by building on locally designed regulation. The team expect to gradually influence national environmental policy by starting from the bottom. These are two different pathways for policy influence, and we plan to monitor the two systems and derive lessons about their effectiveness and how maybe come up with novel integrated top-down and bottom-up influence approach.

Research Partners: CSIR- CSIR-Animal Research Institute, Ghana

Activities: Scenario workshops conducted in the 9 districts; Policy oriented trainings; Meting with high-level actors

Non-Research Partneres: AMEDD and AEDD- Mali

Output Users: Policy actors; non-government organisations; development planning actors

Evidence Outcome: [The process is going on] But already, in Ghana the district plan will be reviewed based on new outputs conducted by the platforms. In Mali, further meetings will come and MPs are willing to take action in favour of poverty alleviation.

Output Used: The two approaches followed in this case were different. The process still going on and we expect to derive lessons about their effectiveness possibly come up with novel integrated top-down and bottom-up policy influence approach.

References Case: No published yet- A paper will published to present the two cases and derive critical lessons

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//1/caseStudy/Case study_2016.pdf

ID # 116 - Strengthening USAID and DfID Investment in Climate Services in East Africa through ICPAC

Project(s): P106, P117, P121

Outcome Statement: CCAFS strengthened an estimated USD 2M of DfID-funded WISER investments in climate services in EA through ICPAC, shaping and adding value to both. The USAID-funded project developed synergies with WISER-ENACTS, which strengthened ICPAC capacity to develop and operationalize value-added climate information "Maproom" products; and WISER-SCIPEA, which strengthened capacity to improve and downscale seasonal prediction. It leverages and adds value by connecting WISER investment to value-added seasonal forecast Maproom products for agriculture, and ICPAC capacity to support member countries.

Research Outputs: Daily climate data merging extensions to Climate Data Tools. Design of Daily Climate Analysis Maproom. Preliminary design of historical agriculture and food security Maproom products. Design of downscaled, fully probabilistic seasonal climate forecast formats and communication protocols. PICSA Manual.

Research Partners: ICPAC (IGAD Climate Prediction and Application Center), IRI (International Research Institute for Climate and Society, UK Met Office

Activities: The Outcome was facilitated by engagement of WISER-ENACTS and WISER-SCIPEA project leaders at IRI, joint development of ToR between the CCAFS-led and WISER-ENACTS projects, joint planning around development of climate information products and online Maprooms, and communications that emphasized the synergies between the DfID-funded WISER and USAID-funded Climate Services for Africa initiatives.

Non-Research Partneres: ICPAC

Output Users: Output users are primarily ICPAC staff, and secondarily National Meteorological Services that are developing ENACTS.

Evidence Outcome: Climate Services for Africa Progress Report to USAID: Start of project through September 2016; Climate Services for Africa Progress Report to USAID: Start of project through December 2016. A brief evaluation study on the outcome is planned for 2017.

Output Used: ICPAC is integrating staff training and new sources of seasonal prediction from Global Producing Centers developed under WISER-SCIPIA; with capacity to use the Data Library platform to develop and operationalize value-added climate information developed under WISER-ENACTS; with climate information tools, products, formats and communication protocols developed by CCAFS.

References Case: Climate Services for Africa Progress Report to USAID: Start of project through September 2016 Climate Services for Africa Progress Report to USAID: Start of project through December 2016.

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions)

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//106/caseStudy/P106 - Outcome 116.zip

ID # 118 - USAID-FTF is orienting its future programming towards encompassing CSA principles using CCAFS tools

Project(s): P101, P56

Outcome Statement: Strategic FP1 support provided to USAID-FTF in orienting its future programming towards encompassing CSA principles supported by: A review of the FTF programs across its 19 focus countries (US$978km of annual funding); "Deep-dive assessments" carried out in 5 specific countries across 3 continents reviewing (US$128m) projects for their relevance in terms of CSA; and the design, use and promotion of the new CSA Programming and Indicator tools which is supporting CSA mainstreaming into ongoing and new Feed the Future investments.

Research Outputs: - Deep Dive Assessment: CSA in the USAID Feed the Future Portfolio in Zambia - Deep Dive Assessment: CSA in the USAID Feed the Future Portfolio in Senegal - Deep Dive Assessment: CSA in the USAID Feed the Future Portfolio in Rwanda - Deep Dive Assessment: CSA in the USAID Feed the Future Portfolio in Honduras - Deep Dive Assessment: CSA in the USAID Feed the Future Portfolio in Bangladesh - CSA programming and Indicator Tool - CCAFS Synthesis Report on FTF review

Research Partners: CIAT, CCAFS SA, CCAFS SEA, CCAFS LAM,

Activities: - High level workshop with 10 major agencies to develop a common overall CSA metrics framework CSA metrics meeting (Paris, March 2015) - USAID-Feed the Future portfolio across the 19 focus countries analyzed for further promising CSA opportunities and entry points . - CCAFS' experts visits to five USAID missions and development of Deep Dive CSA Assessment in FTF portfolios in Honduras, Zambia, Rwanda, Senegal and Bangladesh. - FS1 was also instrumental in leading a multi-agency effort to develop common CSA metrics which translated in an overall framework and a practical CSA Programming and Indicator Tool for supporting program design using "CSA goggles". This tool allows to examine the program scope through the three dimensional lenses of CSA and how its is currently addressing CSA and how future programming process can be made more climate-smart. - Training sessions held during the two 2016 GLEE events held in Zambia and Cambodia.

Non-Research Partneres: USAID-FTF Implementing partners in Rwanda, Honduras, Zambia, Senegal and Bangladesh

Output Users: USAID Bureau for Food Security and FTF missions staff.

Evidence Outcome: * FTF CSA Framework (Feb 2016): https://agrilinks.org/sites/default/files/resource/files/Framework%20CSA%20paper%20final.pdf * Agenda of GLEE events highlighting key lectures by CCAFS team: https://agrilinks.org/events/resources-climate-smart-agriculture-glee-zambia; https://agrilinks.org/events/climate-smart-agriculture-global-learning-and-evidence-exchange-csa-glee-cambodia-1 - Session 12: Operationalizing Climate-Smart Agriculture: Applications Framework (including CSA tool training): https://agrilinks.org/sites/default/files/FINAL%20CSA%20Operationalizing%20CSA%20and%20metrics%20presentation%20UPDATE_21Nov.pdf

Output Used: * Each deep dive resulted in guidance back to Mission directors on promising opportunities and entry points to bolster CSA outcomes through different systems and agro-ecologies. * Training sessions on the use of the CSA programming and Indicator Tool organized

during the USAID 2016 Global Learning and Evidence Exchange events.

References Case: https://cgspace.cgiar.org/handle/10568/75646 https://agrilinks.org/sites/default/files/FINAL%20CSA%20Operationalizing%20CSA%20and%20metrics%20presentation%20UPDATE_21Nov.pdf

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//101/caseStudy/Framework CSA paper final.pdf

ID # 119 - CIAT-CCAFS CSA Profiles in Kenya drove national/county plans, informed US$ 250 million World Bank investment

Project(s): P56

Outcome Statement: CIAT-CCAFS developed a national CSA Profile for the World Bank, which contributed to the development the US$ 250 million Kenya Climate Smart Agriculture Project (KCSAP). The World Bank and Government of Kenya asked CIAT to develop county-level Climate Risk Profiles in all 24 counties in the KCSAP to provide a situation analysis for guiding implementation of the project in each county. The KCSAP Project Appraisal Document cites CIAT/CCAFS, including the CSA Prioritization as the first design principle.

Research Outputs: CIAT-CCAFS CSA Country Profile for Kenya: https://ccafs.cgiar.org/publications/climate-smart-agriculture-kenya#.WJzIVVMrJhE County Risk profiles for 15 counties: Busia, Embu, Garissa, Homa Bay, Kilifi, Kwale, Makueni, Meru, Nakuru, Nyandarua, Nyeri, Siaya, Taita Taveta, Tana River, and West Pokot (links in evidence section) County Risk Profiles currently being developed for an additional 16 counties. Key Design Principles in WB KSCAP Appraisal cite CIAT-CCAFS research in: (a) CCAFS-CIAT CSA Prioritization Framework (cited on page 15 of WB report) (b) Value Chain Approach (page 35 WB Appraisal): Innovation platforms and methodologies, such as LINK developed by CIAT, provide approaches for developing innovative business models that consider value chain impacts and link smallholder farmers to markets. (c) CIAT Big Data Site Specific Recommendations (page 55 WB Appraisal): CGIAR Big Data Tools cited, CIAT use of big data to help rice farmers in Latin America cited as example of situational analysis planned in KSCAP.

Research Partners: Kenya Agricultural Productivity Project (KAPP, Ministry of Agriculture, Livestock and Fisheries) Kenya Agricultural and Livestock Research Organization (KALRO) World Bank

Activities: In 2015, CIAT-CCAFS with support from the World Bank, developed a Kenya CSA Country Profile to systematically assess the state of CSA nationally, including agricultural practices that deliver higher productivity, improved resilience, and lower emissions, and assesses the institutional, policy, and finance entry points for taking CSA to scale. The World Bank asked for "downscaled" County Climate Risk Profiles to be developed by CIAT as direct inputs into the Kenya CSA Project (KCSAP). CIAT developed these profiles for 8 of the 24 counties in the KCSAP as part of the GEF $5 million Kenya Adaptation to Climate Change in Arid Lands Project (KACCAL), The World Bank stipulates that any county in the KCSAP must have a County Risk Profile, and prioritize interventions for the specific context of the county. CIAT-CCAFS will develop 16 additional profiles for the remaining KCSAP counties. February 2017, the World Bank board approved the project: http://www.worldbank.org/en/news/loans-credits/2017/02/09/kenya-climate-smart-agriculture-project

Non-Research Partneres: Kenyan Ministry of Agriculture, Livestock and Fisheries World Bank = partner and next users Kenya Agricultural & Livestock Research Organization (KALRO) = next users (hosted inception workshop, peer reviewer – partner?) Counties = next users, participate in workshop and give information (they were involved) Busia, Embu, Garissa, Homa Bay, Kilifi, Kwale, Makueni, Meru, Nakuru, Nyandarua, Nyeri, Siaya, Taita Taveta, Tana River, West Pokot 16 addional counties forthcoming, currently in development

Output Users: Kenyan Ministry of Agriculture, Livestock and Fisheries Kenya Agricultural Productivity and Agribusiness Project (KAPP) Counties governements: Busia, Embu, Garissa, Homa Bay, Kilifi, Kwale,

Makueni, Meru, Nakuru, Nyandarua, Nyeri, Siaya, Taita Taveta, Tana River, West Pokot Kenya Agricultural & Livestock Research Organization (KALRO) World Bank

Evidence Outcome: Approved KCSAP Website - http://www.worldbank.org/en/news/loans-credits/2017/02/09/kenya-climate-smart-agriculture-project KSCAP Project Appraisal: http://documents.worldbank.org/curated/en/440241486868444705/pdf/Kenya-PAD-01182017.pdf (CIAT cited pages:5,34,35,39,52,55) County profiles: Busia: https://drive.google.com/file/d/0B8zVN7H9H_6Qek5ONFFpV0sxNzg/view?usp=sharing Embu: https://drive.google.com/file/d/0B9Up_9s6fUQVTlVON2RYbmktSmc/view?usp=sharing Garissa: https://drive.google.com/file/d/0B9Up_9s6fUQVbm5ISGc1MG1MMDA/view?usp=sharing Homa Bay: https://drive.google.com/file/d/0B9Up_9s6fUQVc3ZwX2RQZUJzVW8/view?usp=sharing Kilifi: https://drive.google.com/file/d/0B9Up_9s6fUQVZFR4bGVzU0F2ZzQ/view?usp=sharing Kwale: https://drive.google.com/file/d/0B9Up_9s6fUQVUkZvWHhzYkw0NUE/view?usp=sharing Makueni: https://drive.google.com/file/d/0B9Up_9s6fUQVdUpwX29PZ25jOUU/view?usp=sharing Meru: https://drive.google.com/file/d/0B9Up_9s6fUQVbEw3X0VvVjJMaVU/view?usp=sharing Nakuru: https://drive.google.com/file/d/0B9Up_9s6fUQVSWpVY09McWNXZEk/view?usp=sharing Nyandarua: https://drive.google.com/file/d/0B9Up_9s6fUQVczM5UGktUkZDWlE/view?usp=sharing Nyeri: https://drive.google.com/file/d/0B8zVN7H9H_6QYmhFZGNMMGMyVEU/view?usp=sharing Siaya: https://drive.google.com/file/d/0B9Up_9s6fUQVWGNrV2x6VnhGUms/view?usp=sharing Taita Taveta: https://drive.google.com/file/d/0B9Up_9s6fUQVZExkb2pGS04zMU0/view?usp=sharing Tana River: https://drive.google.com/file/d/0B9Up_9s6fUQVdU1uZDJ4bEpMcTQ/view?usp=sharing West Pokot: https://drive.google.com/file/d/0B9Up_9s6fUQVTlhTY0xwYmNOVm8/view?usp=sharing

Output Used: The Government of Kenyan (GoK) and World Bank used the CSA County Profile as an input into the design of the US$250 million KSCAP. The KCSAP funded CIAT to develop county-level Climate Risk Profiles as inputs to support scaling-out of technologies, interventions and management practices (TIMPs) through KCSAP investments.

References Case: Approved KCSAP Website - http://www.worldbank.org/en/news/loans-credits/2017/02/09/kenya-climate-smart-agriculture-project KSCAP Project Appraisal: http://documents.worldbank.org/curated/en/440241486868444705/pdf/Kenya-PAD-01182017.pdf (CIAT cited pages:5,34,35,39,52,55) CCAFS brief on CSA in Kenya: https://ccafs.cgiar.org/publications/climate-smart-agriculture-kenya#.WJzIVVMrJhE

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

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

Annexes uploaded:

ID # 120 - Use of CCAFS products to build agricultural resilience through insurance in Nigeria

Project(s): P51

Outcome Statement: 1. Research outputs used are i) roadmap document and ii) policy brief on scaling out index insurance in Nigeria. These are products of a two-year consultative process with Nigerian government and other actors . 2. Specific users are Federal Ministry of Agriculture and Rural Development (FMARD), Nigerian Meteorological Agency (NIMET), Nigerian Agricultural Insurance Corporation (NAIC) and Nigerian Insurers' Association (NIA), international insurers and re-insurers. 3. Outcome is Nigeria's government confirmed interest in launching index insurance initiatives in Nigeria.

Research Outputs: Two key policy documents provided to Nigeria's Federal Ministry of Agriculture and Rural Development (FMARD) following its request in September 2014 to CCAFS to work together on the design of a roadmap for evidence-based insurance development for Nigeria's farmers. 1. Hellin, J. and Hansen, J. 2016. "Building Agricultural Resilience through Insurance in Nigeria". CCAFS Info Note. 2. Hansen, J.W., Hellin, J. and Goslinga, R. Forthcoming. "A roadmap for evidence-based insurance development for Nigeria's farmers". CCAFS Working Paper 3. Report of Crop Cuts Work shop 25/10/2016, Pompaida, Kaduna State, Nigeria Research outputs 1&2 have already been uploaded in the deliverables section of the report so I am only uploading here the Workshop report.

Research Partners: CCAFS, CIMMYT and IRI (Columbia University)

Activities: During the UN Climate Summit, and the CGIAR Development Dialogs event at Columbia University, during Climate Week in New York in September 2014, the then Honourable Minister, Dr. Akinwumi Adesina, announced plans to expand insurance to 15 million smallholder farmers in Nigeria. Subsequent discussions between the Federal Ministry of Agriculture and Rural Development (FMARD) and (CCAFS) led to a request for CCAFS to organize a knowledge-sharing workshop in London from 27-28 January 2015. This was followed by a planning meeting in Zurich, 5-6 May 2015, hosted by SwissRe. Participants in the workshops included FMARD, the heads of the Nigerian and Indian Agricultural Insurance Corporations, CCAFS, SwissRe, German Corporation for International Cooperation (GIZ), Nigerian Meteorological Agency (NIMET), Nigerian Agricultural Insurance Corporation (NAIC), Nigerian Insurers' Association (NIA) and Pula Advisors. FMARD requested CCAFS to develop an evidence-based roadmap for developing insurance for Nigeria's farmers, in consultation with relevant organizations and experts.

Non-Research Partneres: FMARD, the heads of the Nigerian and Indian Agricultural Insurance Corporations, Swiss Re, German Corporation for International Cooperation (GIZ), Nigerian Meteorological Agency (NIMET), Nigerian Agricultural Insurance Corporation (NAIC), Nigerian Insurers' Association (NIA), Pula Advisers.

Output Users: Federal Ministry of Agriculture and Rural Development (FMARD), Nigerian Meteorological Agency (NIMET), Nigerian Agricultural Insurance Corporation (NAIC) and Nigerian Insurers' Association (NIA), international insurers and re-insurers.

Evidence Outcome: E-mails from former adviser to FMARD, Debisi Araba (now Africa Program leader for CIAT) who worked very closely with CCAFS on the roadmap document, confirming that the Minister of Agriculture wishes to launch officially the roadmap document. For reasons of confidentiality, the e-mail is not submitted.

Output Used: Outputs 1 & 2 (see above) were requested by FMARD in meeting with CCAFS during

COP22 in Marrakech, Morocco. The CCAFS Africa Program Leader, Robert B. Zougmoré, subsequently sent the two documents to FMARD. CCAFS is waiting for FMARD to decidew how best to launch officially the roadmap document

References Case: 1. Hellin, J. and Hansen, J. 2016. "Building Agricultural Resilience through Insurance in Nigeria". CCAFS Info Note. 2. Hansen, J.W., Hellin, J. and Goslinga, R. Forthcoming. "A roadmap for evidence-based insurance development for Nigeria's farmers". CCAFS Working Paper. 3. Hellin J, Hansen J, Araba D. 2015. Evidence-Based Insurance Development for Nigeria's Farmers: Briefing paper for Nigerian Federal Ministry of Agriculture and Rural Development (FMARD)-CCAFS Knowledge-Sharing Workshop, London, 27-28 January 2015. CCAFS Brief. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions)

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//51/caseStudy/Crop Cuts Workshop Pompaida, Kaduna state Oct 2016.pptx

ID # 124 - State and non-state actors prepare implementation guidelines and concept notes to scale-up CSA in Tanzania

Project(s): P56, P108

Outcome Statement: Tanzania's Ministry of Agriculture, Livestock and Fisheries (MALF) in collaboration with United Nations Food and Agriculture Organization (FAO) and the stakeholders involved in the Alliance for Climate-Smart Agriculture in Africa (ACSAA) have developed (1) climate-smart agriculture (CSA) implementation guidelines and (2) a government-led cross-stakeholder concept note for CSA investments in Tanzania. With the backing of state and non-state actors, these documents serve to guide practically all future investments and activities on CSA in Tanzania.

Research Outputs: 1. Tanzania CSA Program 2015-2025 (CSAP): Policy level document created with a multi-stakeholder process facilitated by COMESA (G. Wamukoya) with facilitation and technical input from CCAFS East Africa (J. Kinyangi) and the Parternship for Scaling CSA Project including ICRAF and CIAT (T. Rosenstock, E. Girvetz, C. Corner-Dolloff, C. Lamanna). CCAFS' team inputs include both co-design and implementation of the facilitated process and technical analysis on climate impacts. http://canafrica.com/wp-content/uploads/2015/08/TANZANIA-CSA-PROGRAM-Final-version-3-August-2015.pdf 2. MALF-FAO CSA Guidelines. Outlines CSA options and methods for implementation. Stakeholder validation has occurred but final version has not yet been made publically available. Cites Tanzania CSA Program.http://www.slideshare.net/mmmviestinta/csa-guideline-a-ladder-to-successful-agriculture-in-tanzania 3. Alliance for CSA in Africa Concept Note for CSA in Tanzania. Concept note developed by iNGO, government and research partners to solicit investment and state guiding principles for CSA in Tanzania (6 page document available upon request). Cites Tanzania CSA Program.

Research Partners: CCAFS East Africa: Catalyzed CSAP, collaboration with COMESA and received initial NEPAD Climate Change Fund Grant (US$ 150,000) ICRAF: Facilitation and technical input in CSAP workshops, analysis and drafting of document. Staff, travel and writing support to country teams financially supported by CCAFS P56. CIAT: Facilitation and technical input in CSAP workshops, analysis and drafting of document. Staff, travel and writing support to country teams financially supported by CCAFS P56.

Activities: This outcome is the result of repeated engagements by CCAFS, ICRAF and CIAT with MALF, iNGOs in ACSAA including CARE, FAO and other partners. These relationships date back at least 6 years to ICRAF and FAO as part of the FAO MICCA program and to extensive work with CCAFS East Africa with government partners in the region but have developed in earnest in more recent times. The CSA Program and subsequently the implementation guidelines and concept note were created through numerous stakeholder processes with repeated interactions. The meetings that occurred are too many to list individually. For the most part, the CSAP was developed between February 2015 and June 2015 and kicked off with a workshop in Arusha attended by all research parterns. ICRAF's Tanzania office participated in workshops, development and review of the CSA Guidelines and ACSAA Concept Note.

Non-Research Partneres: 1. MALF: Participated and championed processes, first on the Tanzania CSAP and then subsequently on CSA Guidelines and ACSAA Concept Note 2. COMESA: Convened the initial workshops and partners for CSAP 3. FAO: Led the process of developing the CSA Guidelines 4. ACSAA: Convened the country-level working group that developed the concept note with MALF

Output Users: MALF, UN FAO and ACSAA for situation analysis of projected climate impact and a fundamental basis for designing entry points for scaling up CSA in Tanzania

Evidence Outcome: CSAP displays CCAFS research outputs (Figures 7-11). The CSA Guidelines and ACSAA Concept cite CSAP, as URT (2015) and footnotes 2, 5, and 9 respectively. Also, Figures 1-3 in the CSA Guidelines are outputs of Climate Wizard (Girvetz et al). This is in addition to facilitation and negotiation support.

Output Used: Outputs were used directly by non-research partners to formulate the CSAP, ACSAA concept note and the CSA Guidelines. While there are few committments now, there are indications that these documents will underlie future CSA projects in Tanzania (eg, USDA-FAS is investing ~$3m on CSA and the SOWs cite these documents).

References Case: United Republic of Tanzania (2015) Climate-smart Agriculture Program. Ministry of Agriculture Food Security and Cooperatives. United Republic of Tanzania (2016). Climate-Smart Agriculture Guideline. Ministry of Agriculture, Livestock and Fisheries. Alliance for CSA in Africa (ACSAA-Tanzania) (2016). Strengthing climate-resilient livelihoods in Tanzania. 6 June 2016 version.

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

Link between outcome story and and the FP Outcome(s): This outcome case directly aligns with the FP2 and RP EA outcomes by illustrating that national and subnational institutions are using best available information to design appropriate CSA responses. This outcome case contributed to changes in behavior of at least three institutions (MALF, FAO, and ACSAA).

Annexes uploaded:
https://marlo.cgiar.org/data/ccafs/projects//56/caseStudy/TANZANIA-CSA-PROGRAM-Final-version-3-August-2015.pdf

ID # 125 - World Bank promotes nuanced philosophy for CSA

Project(s): P56

Outcome Statement: World Bank indicates CSA requires a nuanced philosophy for implementation. In a widely broadcast Webinar, A. Braimoh (WB Ag. Global Practice) used CCAFS-P4S slides to make the statement that, "many interventions can be climate-smart somewhere but none are likely to be climate-smart everywhere". This signals that this nuanced philosophy to CSA has influenced World Bank thinking. The significance is that the World Bank has stated that all of their agricultural programming will be climate-smart by 2019.

Research Outputs: The CSA Compendium. The CSA Copmendium is a meta-analysis that examines the scientific basis of CSA, trying to answer the what is the evidence base for field interventions' impact on productivity, resilience and mitigation. It is the largest agricultural meta-analysis to date. • Rosenstock et al. 2015. What is the scientific basis for CSA? CCAFS InfoNote. • Rosenstock et al. 2016. The scientific basis of climate-smart agriculture: A systematic review protocol. CCAFS Working Paper #138. • Lamanna et al. 2016. Evidence-based opportunities for out-scaling climate-smart agriculture in East Africa. CCAFS Worlking Paper #172. • Countless ppts at partner meetings

Research Partners: ICRAF: Leads implementation of Compendium. FAO: Supports general Compendium analysis, added component on barriers to adoption CIAT: Supported Compendium analysis is Tanzania and Uganda. CCAFS FP2 (Andy): Financial and technical support promoting Compendium CCAFS FP3 (Lini): Financial support plus lead on global mitigation Compendium analysis.

Activities: This outcome is the result of near continuous engagements showing preliminary results of the Compendium with partners. The initial phrase came out of the Alliance for CSA in Africa Technical Partner Meeting in Zambia in February 2015. Then the slide was created for the Montepellier CSA Science conference. It has since been shown at countless partner opportunities such as USAID CSA GLEEs, GIZ training in Southern Africa, International Ferilizer Association Annual Meeting, Tanzania CSA Meetings, ACSAA Technical Meetings, etc.

Non-Research Partneres: Preliminary results from the Compendium have been shown to a large number of non-research partners including but not limited to USAID, World Bank, GIZ, Care, CRS, Oxfam, World Vision, Concern, NEPAD, COMESA, national governments in multiple African Countries, etc.

Output Users: The specific output user for this case is the World Bank. The fundamental conclusion derived from preliminary results of the Compendium was promoted by the World Bank, without P4S actively engaging them on it.

Evidence Outcome: See presentation by A. Braimoh attached and given during webinar.

Output Used: It appears that the outputs and engagements have influenced thinking at the World Bank in ways that representative promote this nuanced view.

References Case: Rosenstock et al. 2015. What is the scientific basis for CSA? CCAFS InfoNote. Rosenstock et al. 2016. The scientific basis of climate-smart agriculture: A systematic review protocol. CCAFS Working Paper #138. Lamanna et al. 2016. Evidence-based opportunities for out-scaling climate-smart agriculture in East Africa. CCAFS Worlking Paper #172.

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and

public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

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

Annexes uploaded:
https://marlo.cgiar.org/data/ccafs/projects//56/caseStudy/CSAIndicatorsPresentationFINAL.pptx

ID # 127 - Community seed banks begin to contribute to climate change adaptation in South Africa (emerging outcome)

Project(s): P66

Outcome Statement: The government of South Africa recognizes and supports the multiple roles of community seed banks South Africa's Department of Agriculture, Forestry and Fisheries (DAFF), with technical support from Bioversity International, has initiated the implementation of a national strategy to establish and support community seed banks that revive and improve their traditional seed saving practices and contribute to food security and adaptation to climate change. DAFF is using the achievements of the pilot phase to contribute to new agricultural policy development.

Research Outputs: Vernooy, R.; Sthapit, B.; Tjikana, T.; Dibiloane, A.; Maluleke, N.; Moila, P.; Phora, G. (2016) Mobilizing diversity: establishment of the first two community seedbanks in South Africa's smallholder farming areas. Bioversity International; DAFF, Pretoria. , T.; Malueke, N.; Mokoena, M.; Vernooy, R.; Sthapit, B. (2016) Community seed banks: farmers' platform for crop conservation and improvement. GRAAN/GRAIN SA Gómez César, M.; Sthapit, B.; Vernooy, R. (2016) Safeguarding local crop knowledge: the use of community biodiversity registers. Rome (Italy): Bioversity International; South Africa: DAFF Tjikana, T.; Dibiloane, A.; Maluleke, N.; Moila, P.; Phora, G.; Sthapit, B.; Vernooy, R. (2016) Sharing diversity: establishing and supporting community seedbanks in South Africa (pilot phase 2013-2015). Bioversity International; South Africa: DAFF

Research Partners: Department of Agriculture, Forestry and Fisheries, South Africa

Activities: Between 2013 and 2015 a methodological process of participatory research and learning by doing capacity development was followed leading to the establishment of two pilot community seed banks in two farmer smallholder areas was started: Gumbu village in Mutale municipality in Limpopo province and Sterkspruit town of Joe Ngcabi municipality in Eastern Cape province. Steps included an in-depth community assessment of trends in agricultural biodiversity conservation and use, analysis of the existing household and community practices of seed saving and storage and identification of their strengths, weaknesses and opportunities for improvement, discussions with and capacity development of farmers about how to organize an effective and sustainable community seedbank, celebration of local crop diversity through the organization of a seed and food fair, capacity development of DAFF and agricultural extension staff, regular participatory monitoring and feedback activities, and the production and dissemination of outputs.

Non-Research Partneres: Agricultural extension bureaus in Eastern Cape and Limpopo

Output Users: Direct users include the various directorates of the Department of Agriculture, Forestry and Fisheries and the National Plant Genetic Resources Centre (NPGRC, housing the national gene bank), South Africa, and agricultural extension bureaus in Eastern Cape and Limpopo. Other users are university staff and non-government organizations in the country.

Evidence Outcome: DAFF staff inputs have been considered by relevant policy committees in charge of drafting new policies. Actual documents are not yet available for the public at large. The National Plan for Conservation and Sustainable Use for Plant Genetic Resources for Food and Agriculture is not yet published and publicly available.

Output Used: Outputs were used by staff of the Department of Agriculture, Forestry and Fisheries to generate lessons learned from the pilot phase and contribute to new agricultural policy development in the country.

References Case: See above.

Primary 2019 outcome indicator(s): # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

Link between outcome story and and the FP Outcome(s): DAFF is using achievements and lessons learned to contribute to new agricultural policy development including the country's plans for climate change adaptation. It is also exploring to increase institutional investment in community seed banks that takes into consideration the roles they can play in climate smart agriculture.

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//66/caseStudy/CCAFS Outcome Case Study P 66 Ronnie Vernooy 2.docx

ID # 130 - Scenario-guided policy development in Costa Rica: Policy for Productive Development 2017-2050

Project(s): P63

Outcome Statement: Scenario guided policy processes contributed to developing the Costa Rican Policy for Productive Development 2017-2050. This inter-ministerial policy, led by the Ministry of Economy and Commerce (MEIC) and supported by other ministries, covers all productive sectors including agriculture. The policy is being finalized in February 2017, when the impact of our advisory work can be measured. Government officials in charge of the policy construction and/or supporting the facilitation of the scenario process were trained in the basics of scenario-guided policymaking.

Research Outputs: - Report describing the results and main recommendations from the scenario workshop. - Powerpoint presentations with recommendations presented to policymakers, the vice minister, and board of advisory ministers to the policy.

Research Partners: - Environmental Change Institute (University of Oxford) and Copernicus Institute of Sustainable Development (University of Utrecht): methodological support = University of International Cooperation (UCI): coordination and facilitation of the process.

Activities: - Several meetings with policy-team and the viceminister of economy to explain what scenario methodology could mean for policy design. - Presentation at a conference with experts on their view of future productive development on what scenario methodology could mean for policy design. - Several meetings with NGO´s interested in supporting MEIC in the policy development and willing to finance the process (GIZ and later ILO). These took up considerable time, taking place between February and June 2016. - Careful selection of stakeholders participating in the process (including unions for example, which often boycott policy approvements). - Presentation of policy recommendations within a week and months after the scenario workshop , in several previously identified decision making spaces.

Non-Research Partneres: Ministry of Economy and Commerce (MEIC),supported by the Ministry of Foreign Affairs, Ministry of Agriculture and Livestock, Ministry of Environment, Ministry of Culture and the Ministry of Planning. International Labour Organisation (ILO), financed the scenario guided process $12.000,-

Output Users: - 2 policymakers in charge of the policy development (Oscar Quesada and Alexander Sanchez, MEIC) - Vice-minister of MEIC , Geannina Dinarrte - Advisory board of ministries assigned to the policy (consejo presidencial economico)

Evidence Outcome: Policy is expected to be approved in April 2017.

Output Used: The recommendations were used to edit the final policy document. They were also used to iniciate discussions at the interinstitutional advisory board of ministries, universities and institutions supporting the policy.

References Case: See folder with attachments for 2016 reporting: https://drive.google.com/drive/folders/0B_5YUT9pVFFRQmtsbnBpejh4VU0

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

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

Annexes uploaded:

ID # 131 - As a result of CIAT-CCAFS science Farmers Associations across Colombia have institutionalized climate specific management

Project(s): P58

Outcome Statement: FEDEARROZ, major rice farmer association representing approximately 24 000Colombian producers, institutionalized CIAT-CCAFS climate sites specific management recommendations and built capacity among its members. Farmer association technicians were trained in statistical modeling tools and agricultural management strategies; as a result they are now incorporating specific research on climate sites specific management and producing their own climate forecasts to make informed agricultural decisions. The agroclimatic recommendations and the use of improved data have been shared with FEDEARROZ members by using applications.

Research Outputs: Site specific data- datasets on rice cropping events corresponding to fields in two regions of Colombia. https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/MGUTG3 \CIAT-CCAFS Standard protocol for capturing information for Climate-Site Specific Manangement (CSMS): https://github.com/bigdataciat/Protocolo_captura_de_datos Capacity Building Techniques: CIATs Knowledge Management team, jointly with FEDEARROZ, used CIAT-CCAFS research on climate forecasts and agronomic practices to design four types of actions: Socialization, Training, Capacity Building, and Internships to be used in the Convenio, Report attached in annex "Reporte sobre acciones de fortalecimiento de capacidades"Convenios MADR/CIAT/FEDEARROZ (c-245-12 & c-059-15)"

Research Partners: FEDEARROZ

Activities: CIAT-CCAFS Big Data/AEPS analysis team provided capacity building to association technicians; trainees experienced changes in attitude, technical knowledge of modern analysis tools, skills in interpreting results. With new skills FEDEARROZ, developed a centralized data repository in Bogota and standardized data collection formats nationally. After recognizing the utility of site-specific data, FEDEARROZ hired a meteorologist, designed and instituted a position to lead the generation of climatic forecasts. This work is part of the 2014 agreement (Convenio) with CIAT, Ministry of Agriculture, and national farmer associations to find/apply alternatives so Colombian agricultural sector can adapt to local conditions and improve use of natural resources. In a pilot study of the Capacity Building model in FEDEARROZ, results of trainings were tested. FEDEARROZ technician Francisco Hernández verified that the practices of the association members have changed with the addition of the new analysis skills.

Non-Research Partneres: Ministry of Agriculture and Rural Development (MADR) Convenio Partners: National Federation of Rice Producers (FEDEARROZ), National Federation of Cearal Lugume Farmers (Fenalce), Center of Research in Palm Oil (Cenipalma), Corportation Biotec, Foundation Cipav, Horticultural Association of Colombia (ASOHOFRUCOL)

Output Users: 2 technicians and researchers in FEDEARROZ

Evidence Outcome: Pilot Study, interviews w/FEDEARROZ:"Historias destacadas de Fortalecimiento de Capacidades"(graphic & report uploaded) "Actions to Strengthen Capacities »" by Convenio Partners ("Reporte Sobre Acciones De Fortalecimiento De Capacidades")(uploaded) "Analysis of Large Volumes of Commercial Rice Data," Event Testimonies:http://blog.ciat.cgiar.org/es/big-data-el-equipo-que-no-descansa/ "Climate-Site-Specific

Management Systems (CSMS) for grounding climate smart agriculture to farm rice systems":ftp://ftp.ciat.cgiar.org/DAPA/projects/BIGDATA_AEPS/REPORTES/FLAGSHIP/EvidenciaCCAFS.pdf

Output Used: Technicians from FEDEARROZ apply skills in data analysis learned through workshops and trainings to improve analysis of agronomic/climatic data collected in their work with farmers. Technicians improved the lines of communication by connecting on a mobile application and meet weekly to share weather forecast updates.

References Case: CIATBlog, "Los gremios colombianos entran a la era de los datos": http://blog.ciat.cgiar.org/es/los-gremios-colombianos-entran-a-la-era-de-los-datos/ CIATblog, "First successes in strengthening researchers' capacities in facilitating participatory meetings" http://blog.ciat.cgiar.org/first-successes-in-strengthening-researchers-capacities-in-facilitating-participatory-meetings/ DAPABlog–describes rice project: http://dapa.ciat.cgiar.org/agricultores-de-arroz-comprometidos-con-el-analisis-de-datos-para-enfrentar-la-variabilidad-climatica/ CIATBlog about method used in pilot study-Five questions to monitor and strengthen knowledge on climate forecasting: http://ciatblogs.cgiar.org/knowledgemanagement/5q-conocimientos-pronosticos-climaticos/ Convenio video: https://www.youtube.com/watch?v=5_BgooveTdY

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

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

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//58/caseStudy/encuestas 5Q pronostico.pdf

ID # 132 - Costa Rica adopts digital system for emergency response data collection and decision-making

Project(s): P42

Outcome Statement: In Costa Rica, the Ministry of Agriculture and Livestock (MAG) is responsible for agricultural emergency response including extreme climatic events (floods, droughts, hurricane). Until now, MAG has been slow in responding to emergencies, due to paper-based data collection leading to rushed decision-making based on partly-processed data. In 2016, MAG adopted a data collection+analysis system co-developed by Bioversity and MAG to document 57.6 m US$ damage of Hurricane Otto. The new system reduced response time and allowed more in-depth data analysis.

Research Outputs: - Digital data collection system co-developed by Bioversity and MAG - Report on pilot implementation of the system in Siquirres in 2016 - Survey dataset of 3575 households affected by Hurricane Otto - Data analysis on the impact of Hurricane Otto done by Bioversity responding to inquiries from MAG

Research Partners: A PhD student of the University of Costa Rica (associated with Bioversity International) contributed to conceiving the research and coordinating activities. This student is agricultural extension agent of the Ministry of Agriculture and Livestock (on leave).

Activities: - Engagement with the Ministry of Agriculture throughout 2015, showcasing our work under Agroclimas in Guatemala and its possible relevance for Costa Rica - Pilot implementation of the data collection system together with the agricultural extension service in Siquirres responding to the floods of late 2015 in February 2016 (This effort built mutual trust and validated the system, creating the confidence that led to the quick series of decisions when Hurricane Otto hit) - Meeting with the minister of agriculture in the wake of Hurricane Otto - Capacity building throughout Costa Rica of approx. 300 extension agents in the use of the data collection system in December 2016 - Follow-up and guidance of data collection activities - Analysis of household data, documenting an estimated 57,600,000 US$ in agricultural damage of Hurricane Otto - Presentation to the National Agricultural Council of the final report

Non-Research Partneres: Our main non-research partners were the agricultural extension agents of the public system

Output Users: National Agricultural Council (CAN) uses the data to create a detailed response plan, involving multi-million US$ decision-making (the exact amount still needs to be confirmed). National Emergency Commission of Costa Rica (CNE) uses the data to decide about the total budget allocated to agricultural aspects of the emergency.

Evidence Outcome: Attached: - Report on 2016 pilot - Letter from minister of agriculture of Costa Rica requesting Bioversity support in data collection on Hurricane Otto - Presentation to National Agricultural Council (CAN) - Letter of director of agricultural extension thanking Bioversity: https://cgiar.sharepoint.com/sites/CCAFS/_layouts/15/guestaccess.aspx?docid=0546bef5cfc174c029ea9f0e00df86544&authkey=AakJ4grum80Q0FgF3xG6rIc Online: government press release and magazine article (see references)

Output Used: The activities responded to Hurricane Otto, which hit Costa Rica in late November 2016. Given the successful pilot in February 2016, Bioversity was requested to support data collection. The output was used allocate a multi-million budget to emergency response addressing agricultural losses and to build a detailed response plan.

References Case: Press release of Presidency of Costa Rica mentioning Bioversity support http://presidencia.go.cr/comunicados/2017/01/sector-agropecuario-afina-planes-de-inversion-para-recuperar-produccion-agropecuaria-afectada-por-huracan-otto/ Article in widely respected agricultural magazine, mentioning Bioversity http://revistaproagro.com/perdidas-millonarias-en-sector-agropecuario-costarricense-por-huracan-otto/ The outcome is too fresh to have any scientific publications yet. Nevertheless, we have submitted an article to the ISI journal Disasters (which is now undergoing major revisions) describing a pilot in Guatemala that was an antecedent to the pilot in Costa Rica in 2016. In both the Guatemalan and Costa Rican cases, it is clear that pilots / simulations of emergencies form a crucial tool to build institutional relationships, trust and mutual understanding before an emergency as these cannot be built during an emergency.

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities

Link between outcome story and and the FP Outcome(s): The investment in the data collection system is an important step towards climate services for agriculture and food security decision-making by the Costa Rican government. A next step in this effort is to use these data for prevention decision-making, which is of interest to the ministry and national emergency commission.

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//42/caseStudy/P42-O132HurricaneOttoDocumentation.pdf

ID # 133 - Government of Timor Leste sensitized to climate factors through research informed by CCAFS climate data

Project(s): P117, P101

Outcome Statement: Research on the influence of climate change on maize production in Timor-Leste, which drew partially on data from CCAFS' climate portal, led to increased understanding of climate-related risks in national government bodies. During El Nino in 2016 (which caused an extreme drought), the government (Ministries of Agriculture and Fisheries; Social Solidarity; Public Works) responded to the difficulties by committing ~US$12 million to buy reserve food stocks. This was informed by research from the Seeds of Life program, funded by ACIAR.

Research Outputs: The original CCAFS research output is the climate portal (http://www.ccafs-climate.org/), which is a repository of global and regional high-resolution climate datasets. These datasets were employed by next users to evaluate the potential climate change impacts on maize production in Timor Leste.

Research Partners: The main research was conducted by Samuel Bacon of the Seeds of Life program, funded by Australian Aid and the Australian Centre for International Agricultural Research (ACIAR).

Activities: Apart from publishing and presenting the research, Samuel Bacon and colleagues promoted their work through workshops and educational sessions to government staff in Agriculture as well as to numerous INGOs such as CARE and World Vision working in the field of climate change (especially on land conservation to reduce erosion during storm events). The data, along with a lot of other climate and land related data, was also supplied to a wide range of other stakeholders such as engineers for bridge building and road construction, drainage (especially for the low-lying capital city of Dili).

Non-Research Partneres: The Ministry of Agriculture and Fisheries, the Ministry of Social Solidarity, and the Ministry of Public Works of Timor Leste.

Output Users: Samuel Bacon from the Seeds of Life program and his colleagues conducted research on the impact of climate change on maize production in Timor-Leste from 2010 until 2016, employing data from CCAFS' Climate-Portal, as well as from WorldClim.

Evidence Outcome: Samuel Bacon acknowledged via email interview his use of the data to produce the research that was shared with the Government of Timor Leste but he reported that he did not know how to cite the CCAFS data so there is no CCAFS acknowledgement in any of the outputs.

Output Used: The research conducted using CCAFS climate data was presented in two research papers (Molyneux, 2012, and Bacon, 2016) as well as in climate information sheets at the council level of Timor Leste (covering the whole nation) and in Seeds of Life program annual research reports which are available online (http://seedsoflifetimor.org/climatechange/climate-change-in-timor-leste/).

References Case: Some of the research generated by the project: Bacon SA, Mau R, Neto FM, Williams RL, Turner NC. 2016. Effect of climate warming on maize production in Timor-Leste: interaction with nitrogen supply. Crop & Pasture Science 67(2): 156-166. Molyneux N, Cruz GRD, Williams RL, Andersen R, Turner NC. 2012. Climate Change and Population Growth in Timor Leste: Implications for Food Security. AMBIO.

Primary 2019 outcome indicator(s): # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

Link between outcome story and and the FP Outcome(s): The government of Timor Leste allocated money to purchase food stocks during an El Nino-caused drought after research based on data from the CCAFS climate portal helped increase awareness on how climate change will affect maize production in the country.

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//117/caseStudy/From Samuel - Fatuquero_Tetum.pdf

ID # 134 - Indian Cabinet approves a water-energy nexus program partly informed by data from CCAFS Climate-Portal

Project(s): P117, P101

Outcome Statement: The Indian Cabinet Committee on Economic Affairs approved the program 'Pradhan Mantri Krishi Sinchayee Yojana' (PMKSY) that was partly informed by research based on CCAFS' climate data. PMKSY aims to extend the coverage of irrigation and improve water use efficiency through better end-to-end solution on source creation. Climate information accessed through CCAFS-climate contributed to assess the future agricultural water demand in two locations. The results were used to help the Department of Agriculture develop a long-term demand-driven irrigation development plan.

Research Outputs: The original CCAFS research output is the climate portal (http://www.ccafs-climate.org/), which is a repository of global and regional high-resolution climate datasets. These datasets were employed by next users to assess the future water demand in agriculture (domestic, crops, animals and industrial) in two locations, one in Uttar Pradesh and one in Gujarat.

Research Partners: Indian Institute of Soil and Water Conservation, Dehradun (an institute of the Indian Council of Agricultural Research - ICAR, New Delhi), together with research partners from the Indian Institute of Management, Ahemdabad, and Indian Institute of Technology, Delhi.

Activities: The research partners conducted research on the impact of climate change on the water-energy nexus in agriculture for canal irrigation systems. Data including the means, precipitation and temperature at the finest resolution were downloaded from CCAFS Climate-Portal to develop a conceptual framework for future water supply and demand, interlinking climate change with water and energy and agriculture in the context of two canal irrigation systems, the Sharda Sahayak Canal Command Area (~0.18 Mha, 18 districts of UP) and the Sardar Sarovar Canal Command area (Gujarat). The study was published in 2012.

Non-Research Partneres: State Agriculture Departments, Indian Cabinet Committee on Economic Affairs

Output Users: The Indian Department of Agriculture used climate information accessed through CCAFS' Climate-Portal to assess the future water demand in agriculture

Evidence Outcome: Prabhat Ojasvi, Principal Scientist (Hydrology and watershed management) at the Indian Institute of Soil and Water Conservation was interviewed to ascertain the contribution of the CCAFS climate portal to the analysis used in creating the PMKSY program. He affirmed that he and his research partners used climate datasets from CCAFS.

Output Used: The results were used to assess water demands that helped develop a long-term demand-driven irrigation development plan for all districts in India. The PMKSY program will be implemented across India with an outlay of Rs. 50,000 crore in five years.

References Case: Website of the PMKSY program: http://pmksy.gov.in/

Primary 2019 outcome indicator(s): # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

Link between outcome story and and the FP Outcome(s): The PMKSY program has a focus on micro-irrigation to obtain 'more crop per drop' and other sustainable practices, so use of the CCAFS

climate data has ultimately led to a national plan for climate smart practices.

Annexes uploaded:

ID # 135 - Community-based Seed Management (CBSM) in Phailom

Project(s): P54

Outcome Statement: Low quality of rice seeds has been identified as a key production constraint in the Phailom CSV due mainly to lack of awareness and skills of the rice farmers. IRRI and the project partners build upon this challenge to initiate the Community Seed Bank project as a platform to distribute climate-resilient varieties. A recent activity toward this end was conducting a village Seed Fair where a diverse collection of rice seeds were showcased and rated according to farmers' preferences.

Research Outputs: The demonstration trials and dissemination of new climate-smart varieties, which was implemented by the Agriculture Research Center (ARC) produced favorable results with the significant increase in farmers' yield. This elicited willingness on the part of the farmers to trade traditional rice varieties to improved ones. Through the conduct of workshops and farmer meetings, the importance of a community-based seed management system was highlighted given the lack of source for good quality rice seeds in the village. Outputs (journal articles, blogs, reports): • Report: Community Based Seed Management (CBSM) under changing climate • Interim Technical Report: Ban Phailom CCAFS Activity • Training Report: Community-Based Seed Management under changing climate - ToT

Research Partners: National Agriculture and Forestry Research Institute (NAFRI) Provincial Agriculture and Forestry Office (PAFO) District Agriculture and Forestry Office (DAFO) Savanakhet University Agriculture Research Center

Activities: • Demonstration trials and dissemination of new climate-resilient rice varieties. This work is seen as highly replicable to other villages and outscaling potential is high. • Farmers Field School for climate resilience promotion on agricultural production sector, 15-16 June 2016 • Training of Trainers on Community-based seed management under changing climate – 15-16 November – Participated by government extension workers and 2 farmers (6 females and 8 males), discussions focused on successful rice seed production, seed security and seed quality. In this activity, it was decided to form a coordinating team, comprising ministry extension staff, researchers, and farmers, to plan for the Seed Fair. • Establishment of community seedbank. Initiated by CUSO International, together with PAFO and DAFO, trial fields for seed production have been selected. A farmers' committee has been created to oversee the plans and activities.

Non-Research Partneres: CUSO International – social mobilization and capacity building

Output Users: Rice farmers in Phailom CSV, government extension workers and relevant line agencies, seed research institutions

Evidence Outcome: Moving forward, the farmers' preferred varieties would be planted in demonstration plots in the 2017 planting season. Field trials will be coupled with capacity building activities among farmers as a follow through activity of the Seed Bank project. This is helpful because research stations supply only 20% of farmers.

Output Used: The village Seed Fair served as an eye-opener to participating stakeholders with regards to improved rice varieties that they can test for improved productivity. The activity was also a platform for information sharing and engagement across important stakeholders that could potentially contribute to achieving a successful community-based seed management system.

References Case: • Report: Community Based Seed Management (CBSM) under changing climate • Interim Technical Report: Ban Phailom CCAFS Activity • Training Report: Community-Based Seed Management under changing climate - ToT

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools

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

Annexes uploaded:

ID # 136 - Colombian agricultural sector adapts to climate variability with CIAT-CCAFS facilitated data collection, dissemination and science

Project(s): P2, P42

Outcome Statement: CIAT-CCAFS agroclimatic prediction science has changed how agricultural sector organizations (e.g. farmer associations: Fedearroz, Fenalce; NARS: Corpoica; private research organizations: Cenicafé), generate and share climate variability adaptation recommendations. Through Technical Agroclimatic Committees (MTA), organizations from different agricultural sectors discuss, share, and integrate knowledge to tackle climate variability in MTA regions (Santander (new 2016), Cordoba, Sucre, Cauca, Magdalena, Eje Cafetero). National and Regional Agroclimatic Bulletins are produced using information generated in the MTAs. The bulletins democratized climate information in the country.

Research Outputs: CIAT-CCAFS developed underpinning science that enabled the widespread and sustained use of site-specific agro-climatic forecasts. Delerce et al. (2016) demonstrated that 30–50% of the rice yield variability can be explained by 3-4 climatic factors that can be managed with site-specific recommendations. Similarly, Esquivel et al. (in prep.) (also see https://goo.gl/d8weKg and https://goo.gl/2KCPXo) have demonstrated that forecast skill in Colombia is good enough to produce recommendations for various rice and maize regions. The effort included calibration and validation of rice, maize and bean models for Colombian conditions (Barrios, 2016). These findings and tools were co-developed with national stakeholders. CIAT-CCAFS scientists assessed information needs in Santander, Cordoba, Tolima, Valle del Cauca, and Meta (https://cgspace.cgiar.org/rest/bitstreams/73612/retrieve), which has been key for delivering user-tailored services and identifying and inviting MTA participants. For bean producers, agronomic practice manuals were produced based on CIAT-CCAFS science to accompany forecasts (https://cgspace.cgiar.org/handle/10568/76299 and https://cgspace.cgiar.org/handle/10568/76613).

Research Partners: La Corporación Colombiana de Investigación Agropecuaria (Corpoica) IRI – Columbia University Centro de Investigación de la Caña de Azúcar (Cenicaña) Centro de Investigación de Café (Cenicafé)

Activities: CIAT-CCAFS drove the establishment of 6 Technical Agroclimatic Roundtables (MTA, Mesas Tecnicas Agroclimaticas), including the most recent one in Santander. There is also a National-level MTA. Through the MTAs, local and national governments, farmers' associations (Fenalce, Fedearroz, FNC, Cenicaña) and other participating institutions (universities, Corpoica) have institutionalized CIAT-CCAFS climate information into their decision making. CIAT-CCAFS science and capacity building on crop modelling and seasonal climate prediction enabled national partners, notably Fedearroz and Fenalce, to analyze local conditions and produce and disseminate seasonal agro-climatic forecasts across maize and rice producing regions. MTA participants continue monthly meetings to share forecasts now produced by their own teams. For example, Fedearroz and Fenalce now have teams of 5 people producing, interpreting and delivering monthly forecasts. National and regional agroclimatic are issued on a regular basis. Further information can be found in Camacho (2016).

Non-Research Partneres: Federación Nacional de Cultivadores de Cereales y Leguminosas (Fenalce) Federacion Nacional de Arroceros (FEDEARROZ) Federación Nacional de Cafeteros (FNC) Asociación de Bananeros del Magdalena (ASBAMA) Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM) Ministerio de Agricultura de Colombia

Output Users: Next user –technicians and researcher's farmer associations and gremios use

agro-climatic prediction tools End users – Farmers of national federations and gremios. In long term, potentially more than 500 000 farmers.

Evidence Outcome: Validation report (uploaded): Outcome Harvesting Report: How Colombian Agriculture Producers in Various Sectors Benefit from National Agroclimatic Bulletins and Technical Agroclimatic Roundtables, By Kemly Camacho. 2016.

Output Used: Research outputs were used to build capacity in farmers' organizations as well as in IDEAM. Regional MTAs operate sustainably to analyze the national bulletin and localized climate forecasts and agronomic recommendations. Within the MTAs, outputs from CIAT-CCAFS research are shared and relationships between regional actors (farmer associations/public/private institutions) are facilitated.

References Case: Camacho, K. 2016. Outcome Harvesting Report (uploaded) Barrios, C. 2016. MSc Thesis. Blundo, G. et al. 2016. https://ccafs.cgiar.org/fr/node/52420#.WKhbBDKZNo4 Delerce, S. et al. 2016. PLoS One 11, e0161620. Esquivel, A. et al. in prep. Predictability of Colombian rainfall assessed by canonical correlation analysis. In preparation. CCAFS. 2015. https://ccafs.cgiar.org/es/mesas-tecnicas-agroclimaticas#.WKXWAm8rJhE

Primary 2019 outcome indicator(s): Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions) # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies

Link between outcome story and and the FP Outcome(s): The outcome is also jointly reported with CCAFS LAM (Ana Maria Loboguerrero)

Annexes uploaded: https://marlo.cgiar.org/data/ccafs/projects//2/caseStudy/Caso BTA 20170216 Informe final.pdf

ID # 137 - Building climate-smart villages for sustainable intensification of small holder and vulnerable farming systems

Project(s): P46

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

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

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

Activities: Diffusion of high quality climate information and crop season calendar - The calendar shows water availability for cropping decisions, available grasslands and forest area for herders, and status of ponds and rivers for fisher folk. The prepared crop season calendars were disseminated to local farmer groups through information bulletin every 10 days by radio transmission. Inforrmation on possible climate conditions in the coming months were conveyed monthly through village assemblies for improving planning of agricultural activities. Climate Change awareness is spread through radio, theatre, public conferences, school debates and inclusion in curricula; sharing of knowledge between stakeholders through various fora. Using participatory planning approaches, action plans were developedthat tapped local knowledge and emphasized strong community linkages to take collective

action and generate internal answers to common issues. Establishing groups/ institutions for dissemination of information on climate , innovation platforms to provide interface between technical service providers and farmers to help decision making in the communities. Capacity development was based on locally driven needs and local adaptation strategies in crop sector by providing innovative approaches

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

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

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

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

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

Primary 2019 outcome indicator(s): # of national and subnational development initiatives and public institutions that prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools # of public-private actors at national and sub-national levels are using new incentive mechanisms or business models/ markets that explicitly promote climate smart approaches along the value chain, using CCAFS science Number of regional, national, and/or sub-national initiatives incorporating research outputs to develop or improve major demand-driven, equitable, climate informed services that support rural communities Increase in research-informed demand-driven investments in climate services for agriculture and food security decision-making (millions) # of regional/global organisations and processes that inform their equitable institutional investments in climate smart food systems using CCAFS outputs

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

Annexes uploaded: