Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
Flagship Project 1: Climate-smart agricultural practices	**Activities are grouped under the following Cluster of Activities:** **1.1.** Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of farmers and enhance productivity, adaptive capacity, food security and social equity (in the 5 CCAFS regions) **1.2**. Biophysical, socio-economic and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customised decision support tools for CSA prioritisation, wide scale adoption, local adaptation and investment planning (in the 5 CCAFS	Expected outcomes of this work in 2015 include: • 4 national (or subnational in the case of India) major development initiatives (with targets of at least 50,000 beneficiaries) and public institutions prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools • 2 public-private actors at national and subnational levels are using new incentive mechanisms and business models that explicitly promote equitable climate smart approaches along the value chain, using CCAFS science 2019 Outcomes: • 25 national and subnational major development initiatives1 and public institutions prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools • 15 public-private actors at national and subnational levels are using new incentive mechanisms or business models that explicitly promote equitable climate smart approaches along the value chain, using CCAFS science	2019 Outcomes: Achieved outcomes of this work in 2015 include: **Indicator: #** of national (or subnational in the case of India) major development initiatives (with targets of at least 50,000 beneficiaries) and public institutions prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools. **Synthesis of annual progress towards this indicator:** Strategic support to 9 national and 23 subnational level initiatives: • USAID Feed the Future in orienting its future programming towards encompassing CSA principles; Multiple CSA donors through a CSA metrics database and indicator selection framework; Government of Mali through CSA prioritization; ECOWAS though the development of a CSA intervention Framework ; COMESA through 5 CSA Country Plans; Government of Kenya by integrating CSA into the INDCs and World Bank CSA loan through support on a CSA country profile; World Vision though supporting their Niger strategy; Colombian productive sector adaptation through support to MoA and establishing INDC targets for agriculture; Government of Guatemala through CSA prioritization and development of Ag&Climate strategy for donors. • NARS/Local agricultural departments across 22 CSVs actively tested CSA options and used CCAFS decision support tools to promote scaling via extension services and local development plans: India's State government committed to develop 500 CSVs and is using CCAFS-informed LAPA for scaling through the State-Action-Plan; Multi-level CSA planning was undertaken in Colombia, Guatemala, Mali and India; Ethiopian Bureaus of agriculture and CATIE used the CSA citizen science approach; Provincial Advisory Group was established in Vietnam and Philippines' CSV included in the Philippines' Adaptation and Mitigation in Agriculture Program

[1] Initiatives that have targets of at least 50,000 to 10 million beneficiaries

Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
	regions) **1.3.** Approaches, strategies and scaling up/out mechanisms (e.g. CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level (in the 5 CCAFS regions) **1.4**. Innovative knowledge management systems and approaches (ICT, information network, multi-stakeholder platforms, learning alliances, fora etc.) and strategic engagement approaches and partnerships that promote access, co-creation, capacity building, learning, 2 way sharing and dissemination of CSA information and tools to farmers, extension services, agro-dealer networks, local governments, private sector, academia etc.) (in the 5 CCAFS	2025 Outcome: • By 2025, Public institutions (e.g. governments, extension services, farmer organizations), Civil Society Orgs and NGOs at national and sub-national level are widely promoting equitable CSA adoption by supporting multi-actor networks to enable thirty million farmers, at least 40% of whom are women, to strengthen their adaptive capacity and food security	**Synthesis of annual progress gender and social inclusion contribution towards this indicator:** 2015 efforts to inform institutions' prioritization and implementation of equitable best bet CSA options and support mainstreaming of GSI materialized in: *High-level support to strategic partners' initiatives:* • WB: Gender and Stakeholder Involvement module (CSA-101 website) • WB-IFAD-FAO Sourcebook: Module 18 Gender and CSA • UNESCO: Science Report Chapter: Global trends in Gender and Science & Engineering *Targeting/planning/prioritization/scaling/M&E tools:* • USAID-CSA programing tool. • Gender related indicators included in prioritization processes (Guatemala, Mali) • Gender aspects included in the household typology and Risk-household-options research • Participatory gender and youth-responsive methodologies and gender task analysis embedded in local planning and prioritization (Vietnam, Colombia) • Youth involvement in local planning fostered through communications and GIS trainings in Colombia • Gender-disaggregated data and varieties tested through the Crowdsourcing methodology (India, Ethiopia, Central America). *CSA evaluation, evidence-building and CSV approach:* • Gender-responsive framework for targeting/implementation used in WA and SA, where majority of projects developed CSA portfolios considered gender feasibility, preferences and farm typology. • CSA practices most relevant to women documented for scaling-out by local/sub-national Governments • Women's unions key role played in the CSA prioritization (SEA), CSV management (Nepal) and evaluations (Kenya, India) • Women and youth farmers accessed the Innovation Fund through CBOs (Kenya)

Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
	regions) **1.5.** Evidence on equitable CSA certification schemes, new agri-business models, financial incentive mechanisms and policy instruments to promote and mainstream CSA adoption at different levels of the value chain (in LAM, WA, SA, SEA) Work under this theme will focus in 5 regions in 2015: Latin America, Southeast Asia, South Asia, East Africa and West Africa as well as involve global activities		**Indicator:** # of public-private actors at national and subnational levels are using new incentive mechanisms and business models that explicitly promote equitable climate smart approaches along the value chain, using CCAFS science **Synthesis of annual progress towards this indicator:** Progress was focused on ensuring use of CCAFS science and engaging with public-private partners and programs to lay the ground for designing and implementing CSA incentive-mechanisms, including: - Discussions with WB and CARE to pilot novel finance options - Regional engagement with: • agro-dealers and Acre Africa to promote CA and creating opportunities for investments; farmer cooperative used volunteer-farmer-training in their rural advisory services to promote use of fodder shrubs as CSA option (EA) • the WACDEP programme incorporated CCAFS-research results in the development of the Integrated Flood Management investment plan; ECOM Agroindustrial Corp's to uptake project outcomes; ESOKO company, CSIR-SARI and Ghana-Met explorative work payable ICT-transferred climate-smart information; Rainforest Alliance reviewing adjustments to training materials (WA) • ANACAFE, CAFENICA, IICA, Atlantic, IBD, Root Capital, Neumann foundation, SAFE investors to develop adaptation strategies (Guatemala and Nicaragua) and coffee/cocoa portfolios contributing to international quality certification incentives (Peru) • local governments in 5 SEA-CSVs committed to align development plans and financially support suitable CSA T&Ps. - CSA-led business models identified for scaling, on: small-ruminants and sorghum with the Kisumu County government, Rafiki Microfinance, MAGOS enterprises and CBOs (EA); water storage and livestock interventions (WA); wheat and maize system (India); higher starch content cassava (SEA). **Synthesis of annual progress gender and social inclusion contribution towards this indicator:**

Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
			Contribution to evidence-building to support gender-sensitive design of CSA-led incentive mechanisms and business models included: *In EA* • Characterizing the role of men and women farmers in the VFT approach; • Sorghum business model development process involved women (60% of the CBOs) • Research on equitable and gender focused opportunities for CSA investments through local investment partnerships • Youth and women involved in managing horticultural "smart farms" and accessing mobile phone messaging services for on-farm planning and decision making • Ready to use CSA-information targeting increased use efficiency of agricultural inputs (AGMARK-Cimmyt) distributed to at least 400000 women across 9 Kenyan counties. *LAM* • Gender perspective and potential impacts of climate-smart cocoa/coffee value-chains identified for men and women *WA* • Social and gender groups are taken into account in all projects from inventory stage to validation. • For the work on cocoa, gender analysis initiated with a focus on youth and land inheritance led by IITA. *SEA* • Facilitated access of women to inputs to agricultural production. These groups will likely be given access to the "community innovations fund (Philippines) *SA* • Inclusion of small and marginal farmers and development of gender segregated data in relation to CSA activities. **Lessons and implications for the coming planning cycle**: Vast influence, but limited concrete evidence based outcome statements collected. We need to document more outcomes formally, but ensure low cost methods to do

Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
			so.
Flagship Project 2: Climate information services and climate-informed safety nets	This work comprises five Cluster of Activities, as follows: **2.1.** New climate information and analysis that enhances the capacity of data providers (e.g. regional and national meteorological institutions) to meet the demands of climate service beneficiaries **2.2.** New knowledge, capacity, and tools that support the provision of equitable climate services for farmers **2.3.** Weather-related insurance products and programs designed, tested, and brought to scale with implementing partners **2.4.** Decision support systems improved or developed for	Expected outcomes of this work in 2015 include: • 2 regional, national and sub-national institutions or consortia develop or improve major2 demand-driven, equitable, climate informed services supporting rural communities, using CCAFS research outputs • US$2 million increase in demand-driven investments in climate services for agriculture and food security decision-making, that are informed by CCAFS science and engagement, relative to 2014 2019 Outcomes: • 15 regional, national, and sub-national institutions or consortia develop or improve major demand-driven, equitable, climate-informed services supporting rural communities, using CCAFS research outputs • US$ 15 million increase in demand-driven investments in climate services for agriculture and food security decision-making, that are informed by CCAFS science and engagement, relative to 2014 2025 Outcome: • 30 million farmers, at least 12 million of whom are women, with improved capacity	2019 Outcomes: Achieved progress towards outcomes of this work in 2015 include: **Indicator:** # of regional, national and sub-national institutions or consortia develop or improve major[3] demand-driven, equitable, climate informed services supporting rural communities, using CCAFS research outputs. **Synthesis of annual progress towards this indicator:** **23** institutions have responded to the needs of climate service beneficiaries to create and disseminate climate informed services. • District agricultural extension services in Tanzania, Malawi and Ghana, Red Cross Malawi, Oxfam Ghana and ADRA Ghana incorporated PICSA into their work with farmers. • ICPAC via generating seasonal and monthly quantitative forecast outputs communicated to stakeholders, integrated into GHACOF41 for SOND 2015 • Local Technical Agroclimatic Committee (Cauca-Colombia) gave agroclimatic information to inform decision making • Zamorano University and COPECO supported the design of a drought index insurance prototype product for basic grains • The Cereal producers association in Colombia, FENALCE, and CORPOICA (NARS) increased dissemination of results and development of user-oriented climate products to support farmer decision-making • Agriculture Insurance Company of India and Agriculture Department of Maharashtra adopted methodology for developing rainfall triggers that have higher farmer satisfaction • Ministries of Disaster and Agriculture in India and Bangladesh are subsidizing Index-Based Flood Insurance products for flood prone areas in their countries • Ghana Meteorological Agency and Mali-Meteo implemented ENACTS maprooms

[2] "Major" here implies that the initiative realistically aims to reach at least 50,000 farmers by 2019.
[3] "Major" here implies that the initiative realistically aims to reach at least 50,000 farmers by 2019.

Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
	incorporation into national food security safety net programs **2.5.** Engagement, knowledge synthesis and evidence to guide regional and global investment in climate services for agriculture and food security management	to adapt to climate-related risk by accessing climate services and/or well-targeted safety nets that are informed by CCAFS science.	• FMARD in Nigeria using CCAFS-led roadmap and concept notes to guide piloting of index-based agricultural insurance • National Environmental Information System in Cote d'Ivoire was fine-tuned in 2015, in preparation for 2016 launch **Synthesis of annual progress gender and social inclusion contribution towards this indicator:** Gender is being included in projects across regions. In East Africa, CIMMYT and IRI are working on a paper on the link between social equity issues and index insurance. This will inform future index insurance projects impacting institutions and this indicator. The Local Technical Agroclimatic Committee's index insurance work was inclusive of women. Studies are being conducted in LAM with SESAN and ACF to understand gender dynamics in decision making progresses in the sentinel sites. SA projects on Index-Based Flood Insurance have involved women in order to identify potential benefit to them. Pilot testing in Vietnam included 62% women, which ensures futures services developed to reflect the specific services needed by both men and women farmers. In WA, 40% of PICSA trainees were women. 'Gender Materials Pack – Assessing the Impact of Agricultural Insurance on Gender Dynamics in Northern Ghana' was developed to specifically address gender dimensions in index-based insurance. In Tanzania and Malawi, 30% of PICSA trainees were women, and 50% of farmers reached as a result were women. **Indicator:** # of million increase in demand-driven investments in climate services for agriculture and food security decision-making, that are informed by CCAFS science and engagement, relative to 2014 **Synthesis of annual progress towards this indicator:** In LAM, money has been allocated to invest in climate services in the agriculture sector of Colombia by the Ministry of Agriculture and Rural Development (MADR). Research will be done on agroclimatic forecast, crop modelling improvement considering climate variables, experimental plots in different parts of the country, and support of national policy and action plans. In SEA, negotiations are underway for co-funding of a project on enhancing adaptive capacity of women and ethnic

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			minority smallholder farms. **Synthesis of annual progress gender and social inclusion contribution towards this indicator:** Gender is a component of both the already committed funds and the funds that are under negotiation. The MADR project includes studies with a gender perspective regarding roles in main crop activities. The project in negotiation in SEA includes gender as a main focus. **Lessons and implications for the coming planning cycle:** The number of Regional, National, and Sub-National institutions applying CCAFS research to climate-informed services is much larger than anticipated. It looks like we are not applying an objective threshold to what we consider to be "major" service initiatives. We initially envisioned that "major" initiatives would realistically target at least 50,000 farm households.
Flagship Project 3: Low-emissions agricultural development	This work comprises three Cluster of Activities, as follows: **3.1.** Methods and data for quantifying low-emissions agriculture options appropriate to smallholder farmers **3.2.** Decision support for identifying and prioritizing low-emissions CSA options, including synergies and tradeoffs with development objectives such as food security and social equity	Expected outcomes of this work in 2015 include: • 3 low emissions plans developed for implementation, based on CCAFS science, that have significant mitigation potential, i.e. will each contribute to a reduction of at least 5% GHG emissions intensities or reach at least 10,000 farmers, including at least 10% women. • 0.2 million hectares targeted by research-informed initiatives for scaling up low-emissions agriculture and preventing deforestation. 2019 outcomes: • 8 low emissions plans developed for implementation that have significant mitigation potential, i.e. will each	2019 Outcomes: Achieved progress towards outcomes of this work in 2015 include: **Indicator:** # of low emissions plans developed for implementation, based on CCAFS science, that have significant mitigation potential, i.e. will each contribute to a reduction of at least 5% GHG emissions intensities or reach at least 10,000 farmers, including at least 10% women. **Synthesis of annual progress towards this indicator:** CCAFS science informed three mitigation policies in Latin America (Costa Rica's coffee NAMA and livestock low emissions strategy and Colombia's livestock NAMA), three work plans related to upscaling mitigation in rice (CCAC multistakeholder proposals in Vietnam, Bangladesh and Colombia, albeit proposals were led by CG centers) and Mongolia's INDC (inclusion of livestock). **Synthesis of annual progress gender and social inclusion contribution towards this indicator:** Four plans explicitly included gender and social inclusion elements and women were

Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
	3.3. Incentives and innovations for scale-up of low-emissions practices and avoided deforestation by agricultural commodities Work under this theme will focus in 4 regions in 2015: Latin America, Southeast Asia, South Asia, and East Africa, as well as involve global activities. Work will be carried out in CCAFS focal countries as well as select countries with potential to be mitigation leaders in the regions (e.g. Mexico, Costa Rica).	contribute to a reduction of at least 5% GHG emissions intensities or reach at least 10,000 farmers, including at least 10% women; • 4 million hectares targeted by research-informed initiatives for scaling up low-emissions agriculture and preventing deforestation 2025 outcome: • By 2025, a 15% reduction of GHG emissions intensities has been achieved, while enhancing food security, in at least eight countries in South Asia, Southeast Asia, East Africa and Latin America.	directly involved as 50% of beneficiaries in the pilot project introducing new sheep breeds in Mongolia. The NINO (Colombia) and NAMA concept (Costa Rica) were designed to promote gender equity and social inclusion. Two CCAC proposals included strong gender components through participatory technology evaluation and engagement of the Women's Union in Vietnam. The Kenya NAMA preparations included analysis of best practices for gender equity. Gender benefits are most evidence in projects with direct farmer-level impacts. Independent gender research supported by F3 in 2015 demonstrated that opportunities for women's participation and benefits were strong in dairy systems in East Africa. Cheesemaking in Costa Rica is led by women, but the LED impacts appear minor at first analysis. Women's involvement in southern Vietnam is most important in terms of influencing husband's decisions and in N. Vietnam, in terms of reducing women's labor through collaboration with water management cooperatives. **Indicator:** # of million hectares targeted by research-informed initiatives for scaling up low-emissions agriculture and preventing deforestation. **Synthesis of annual progress towards this indicator:** LED plans described under ID38 have ambitious scales of impact, especially the CCAC workplans for scaling up AWD in Bangladesh, Vietnam and Colombia, which together constitute the majority of the potentially affected area (6.98 mil ha). Full implementation is unlikely though by 2019, especially as CCAC budget cuts will delay Colombia's and CIAT's efforts. More realistic levels of implementation are more strongly evident in Costa Rica's Livestock NAMA which can be expected to reduce emissions on 0.02 mil ha based on 20 pilot farms. CIFOR's activities in Brazil likewise will affect 0.003 million ha of farms undertaking initial trials. **Synthesis of annual progress gender and social inclusion contribution towards this indicator:** Activities in Bangladesh and Vietnam include provisions for involving women in technology development and (in Colombia as well) monitoring gender and social

Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
			inclusion outcomes. NAMA's in Costa Rica and Colombia include provisions for promoting gender equity and social inclusion. See ID38 as well. In most sites, gender considerations are mostly about safeguards for avoiding harm to women and recognizing that women and men often make joint decisions as household units. In most sites, we have yet to identify strong incentives and options for women's engagement that would not result in some tradeoffs in interventions to reduce emissions. **Lessons and implications for the coming planning cycle:** Gender benefits are most evidence in projects with direct farmer-level impacts. ID39 is a problematic indicator as this is primarily for measuring ha deforestation, yet other projects are also reporting against this. Need to ensure integration of CCAC work in Bangladesh with SA regional program plan.
Flagship Project 4: Policies and institutions for climate-resilient food systems	This work comprises four Cluster of Activities, as follows: **4.1.** Improved national planning processes through policy analyses, (re)formulation and implementation; and stakeholder analyses and engagement through scenarios, learning alliances and science-policy dialogues **4.2.** Priority setting contextualized with national stakeholders and capacity strengthened to apply	Expected outcomes of this work in 2015 include: • 2 equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies, informed using knowledge, tools and approaches derived from CCAFS science • 0 regional/global organisation informs their equitable institutional investments in climate smart food systems using CCAFS outputs 2019 Outcomes: • 15 equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies, informed using knowledge, tools and approaches derived from CCAFS science; • 10 regional/global organisations inform	2019 Outcomes: Achieved progress towards outcomes of this work in 2015 include: **Indicator:** # of equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies, informed using knowledge, tools and approaches derived from CCAFS science **Synthesis of annual progress towards this indicator:** In 2015 CCAFS science and engagement processes supported improved policies in 22 countries in all five target regions. Tanzania's new Environmental Policy and Uganda's Agricultural Policy and Mechanization Framework were supported. Kenya, Uganda, Tanzania, Botswana and Namibia developed validated CSA framework programs based on CCAFS outputs. Kenya, Uganda and Tanzania integrated CSA into INDCs. Rakai and Luwero districts in Uganda integrated CC priorities in five-year development plans. Tanzania and Ghana Met Services are better meeting climate information needs of smallholder farmers. INDCs were strengthened in Colombia and Costa Rica via scenarios, and Honduras strengthened its NAP for the Agricultural Sector. CCAFS helped achieve the Declaration of Central American Countries supporting CSA announced during COP21. Bangladesh's NAP for agriculture and seventh Five-Year Plan were supported, as were plans for implementing CSA/CSVs in

Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
	outputs in policy formulation; including trade-off analyses, foresight activities, and quantification of regional socio-economic scenarios **4.3.** Effective supra-national governance systems and equitable engagement mechanisms between international and regional/national stakeholders to influence global policy, and strengthened capacities to integrate local priorities into global fora **4.4.** Improved regional/global investment choices through appropriately contextualized priority setting, drawing on global foresight and socio-economic regional scenarios Work under this flagship will focus in 5 regions in 2015 (Latin	their equitable institutional investments in climate smart food systems using CCAFS outputs. 2025 Outcome target: • 20 national/subnational jurisdictions increased their equitable institutional investments in climate smart food systems.	Madhya Pradesh and Nepal. CCAFS supported the Cambodia National Assembly on CSA. Investment policies are being formulated for Philippine National Climate Change Action Plans. Vietnam's INDC for agriculture was supported, and that country's rice sector restructuring and Myanmar's CSA strategy (Ministry of Agriculture and Irrigation). Ghana's national CSA action plan was strengthened. Local policies were refined in Mali and Senegal to integrate CC and food security dimensions. The Senegalese Ministry of Agriculture now uses climate information services to guide annual planning. Burkina Faso developed a new plan for the rural sector (PNSR) using scenarios. "Competent authority" decrees, new agrobiodiversity policies and/or confirmations of PGRFA in MLS were achieved in Bhutan, Guatemala, Rwanda, Costa Rica, Nepal, Uganda and Burkina Faso. **Synthesis of annual progress gender and social inclusion contribution towards this indicator:** National CSA-FPs are highlighting the integration of gender and youth in developing CSA interventions through value chain integration in EA. Women farmers are being considered explicitly in the development of CIS apps. Gender balance and representation of vulnerable groups have consistently been taken into account in design and implementation of scenarios work. Publications on gender inclusion in CC policy were developed and disseminated to policy makers in Costa Rica, Colombia, Peru and the Philippines. Policy inventories in countries of SA have highlighted missing gender sensitivity in policies for promoting CSA. GSI are major components of plans for scaling up CSA in Nepal. Gender is mainstreamed in Ghana's national CSA action plan and in the WA CSA alliance. Concerning ITPGRFA/MLS, women's involvement in national policy processes has been assessed. Studies continue on the differential resilience of (and differential institutional gaps between) women and men in CCAFS sites. Kenya, Colombia and Costa Rica are implementing CSA initiatives and strengthening work on gender and social inclusion, utilising a range of CCAFS gender research and tools. A policy brief, an output of a seminar in March, on supporting women farmers in a changing climate informed the updated UNFCCC guide to the negotiations on agriculture. **Indicator:** # of regional/global organisation informs their equitable institutional

Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
	America, Southeast Asia, South Asia, East Africa and West Africa) and will also involve global activities.		investments in climate smart food systems using CCAFS outputs **Synthesis of annual progress towards this indicator:** The UNFCCC Paris agreement provides a framework for investment by national/regional/global organizations in climate-smart food systems. CCAFS worked with policy and research partners towards ensuring that agriculture was not excluded from the agreement. The World Business Council for Sustainable Development developed a CSA Action Plan to serve as a framework for private sector investments in CSA. CCAFS played an important role in the process as a scientific partner. With COMESA, ACPC/UNECA, CORAF/WECARD and IDRC, three submissions to UNFCCC during SBSTA 42 were made by the AGN. CIAT/CCAFS developed a CSA Country Profile for Nicaragua as input to a WB report for Nicaraguan policy makers. CCAFS's partnership with ASEAN-CRN helped to develop an umbrella program on Climate Change Adaptation and Mitigation (CChaM), a platform for collaborative R&D, knowledge management, and capacity development in SEA. WWF used CCAFS's SEA scenarios for an ADB investment study. Scenarios for the Pacific region were developed by CCAFS and partners, to guide regional investments through SPC. UNDP enlisted CCAFS for Bangladesh's NAP process. IFPRI and partners, via IMPACT modelling, informed policy and investment discussions within OECD and FAO. WMO, WFP, and ADRA are all directing institutional investments towards climate services for smallholder farmers. Five initiatives are piloting the CCSL M&E framework; partnerships with IIED's TAMD and DFID's BRACED programs are highlighting learning in organisational change. FAO Council adopted CGRFA guidelines in 2015, designed to assist national climate change adaptation planning. CCAFS analyses of INDCs were used as input to the WB's Climate Change Action Plan. **Synthesis of annual progress gender and social inclusion contribution towards this indicator:** CCAFS supported the AGN in a submission on the inclusion of gender in CC to the UNFCCC during SBSTA 42. Gender received attention in some 40% of the INDCs submitted ahead of COP21. The WBCSD CSA Action Plan explicitly aims to address gender and social inequality issues, thus ensuring that private sector investments

Level n-1 Flagships	Description of planned key activities at each level of internal organization	Expected results of planned key activities	Actual results
			will strive to strengthen gender and social inclusion. Guidelines adopted by the CGRFA recommend that gendered uses of GRFA should be taken into consideration when developing plans for integrating GRFA into national climate change strategies, and that women and marginalized social groups should be represented in processes for the development of those strategies. CCAFS's Gender and Inclusion Toolkit has been downloaded over 3,200 times, with users in a wide range of countries and organisations (the GSI Toolkit was one of the most popular items in the CCAFS publications repository in 2015). Contributions on gender and youth were made to strengthen the Guide to UNFCCC Negotiations on Agriculture Toolkit for Communications and Outreach, to support UNFCCC processes and feed into COP21. Gender assessment of the INDCs was undertaken. **Lessons and implications for the coming planning cycle:** Budget reductions had some impact on project activities, but FP4 is well on track as far as meeting outcome targets is concerned.

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
1.1 Context specific (targeted) suitable CSA options and portfolios that build on traditional knowledge, meet the needs of	The 2019 outcome for **1.1** is: 25 national and subnational major development initiatives and public institutions prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools. 2015 activities will : • Identify scalable CSA practices	Key results: • Robust spatial targeting tools for specific technologies (including maize, banana, rice, beans, wheat amongst other crops) • Greatly enhanced databases on CSA evidence base available through online interface(s) • Establishment of tools, methods and approaches in support of a global platform for Citizen Science of CSA	**Synthesis report for F1-CoA 1.1:** Guided by on location specific climatic risks and stakeholders priorities (and based on agro-ecological zones, crop/cropping systems and farm typology in the case of India), several context specific suitable crop, livestock and water storage CSA technologies and practices were identified, prioritized and implemented in CSVs across all regions for evaluation and development of portfolios through PAR. Those included: • Drought and mosaic-tolerant cassava, drought-tolerant maize; drought and rust-tolerant common bean and low moisture-tolerant pigeon pea, fast-growing and tolerant to worms galla goats and red-Masaai sheep, Bracharia, Sweet potato vines (EA); drought-tolerant beans and forages (LAM), drought

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
farmers and enhance productivity, adaptive capacity, food security and social equity	and technologies in the pipeline with other CRPs • Compile evidence on CSA practices and technologies benefits through the CSA Compendium online information repository and Agtrials • Establish a network for evaluating CSA practices through Citizen Science approaches • Involve development of predictive technologies for climate smart agriculture In 2015, work will be carried out in all 5 CCAFS regions	• Policy brief and strategies for CSA outscaling co-developed with the African CSA Alliance 2015 activities will result in: • At least 2 major development initiatives using CSA evidence to target outscaling of promising CSA practices and technologies	tolerant wheat and beans (SA); • Soil fertility and grain storage management (EA), crop rotation, water storage options, water conservation techniques (tied-ridging, bunding, zai), conservation agriculture, agroforestry and tree-shaded coffee/cocoa (WA); in LAM and SEA CSVs 14 relevant existing CSA technologies/strategies identified to increase farmers adaptive capacities (incl. diversification, home gardening, drip irrigation, water harvesting livestock raising, intercropping, forestry, agroforestry, soil improvement, water harvest & management, weather forecast, coastal bioshields, community seed bank, coffee rejuvenation). • Testing Future scenarios of aquaculture in Mekong's Delta • Evidence for the productive profitable, adapted and scalable CSAPs was quantified in India (~50 CSV in Haryana & Bihar). **Gender synthesis report for F1-CoA 1.1:** Several CSA prioritization activities at the CSV level and On-farm/on-station field evaluations were designed and analysed though gender lens, and ensured gender and social inclusion through: • Identification of best-bet CSA options that are relevant/specific for gender and small/marginal farmers and consideration of feasibility, preferences and differential impacts (e.g. priority tree species in EA; home garden improvement and livestock-raising in SEA and EA; non timber forest product processing -baobab fruit transformation and Casia tora growing in WA) • Implementing participatory mechanisms to account for gender perspective and framing culturally-appropriate and gender equitable approaches (LAM) • Fostering women's group participation/leadership in evaluation trials (Kenyan CBOs consisting of 60% women; SEA), • Collecting gender disaggregated data (SA, EA, LAM)

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
1.2 Biophysical, socio-economical and tradeoffs analyses (incl. enabling environments and gender), innovative methods, engagement approaches and customized decision support tools for CSA prioritization, wide scale adoption, local adaptation and investment planning	The 2019 outcome for **1.2** is: 25 national and subnational major development initiatives and public institutions prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools. 2015 activities will : • Develop a CSA prioritization tool, and finalization of pilots in Vietnam, Mali, Guatemala plus 1 country TBD in East Africa • Identify appropriate indicators for CSA effectiveness • Develop household modelling approaches to evaluate effectiveness of CSA options on household livelihood indicators and to evaluate trade-offs • Co-develop with local government of adaptation plans that incorporate CSA options In 2015, work will be carried out in Latin America (Peru, Colombia, El Salvador, Grenada, Costa Rica, Guatemala, Argentina, Mexico), and East and West Africa (Ethiopia, Kenya, Senegal),	Key results: • CSA Country profiles for at least 10 countries (LAM, EA, WA) published, co-developed with major development initiatives • Reports and/or policy briefs with robust cost/benefit analysis of CSA options at national and local levels for 2- 3 countries • Methodological paper on indicators for CSA • Publication of household modelling approaches and case studies in East and West Africa and South Asia • State adaptation plans co-developed with regional government institutions in India 2015 activities will result in: • National policies and institutions prioritizing CSA practices and technologies identified through robust cost/benefit analysis • National public and private institutions using CSA indicators to measure progress • Establishment of adaptation plans at sub-national scale • Institutions using CCAFS decision support tools to make the right choices with regard to CSA	**Synthesis report for F1-CoA 1.2:** Methodologies for local adaptation planning and CSA prioritization tools developed or applied included: • Farm typology analysis framework (EA, SA) • LIDAR model simulating future impacts of storm surges (SEA) • Future seed zonation maps, shade tree advise tool and tree fodder nutrition database for feeds/forages priority setting (EA, LAM) • Atlas for fruit/shade species prioritization in agroforestry coffee systems (LAM) and Climate-smart planning framework (WA) • AgMIP integrated assessments for CSA prioritization (EA) • Bayesian-networks algorithms for CSA targeting developed and piloted with Tanzania MoA and ACSAA • USAID CSA indicator/programing tool • Prioritization framework and cost-benefit analysis for CSA investment (LAM, WA, SEA); CSAP toolkit and multi-objective trade-off analysis for state/national levels adaptation plans (India and Bangladesh); climate-smartness analysis of Farmer-Managed Natural-Tree-Regeneration (Niger); Ongoing socio-economical trade-off analysis in coffee regions (Uganda), of AWD (SEA) and data collection (WA, SA) • Evidence published for LAPA&CSVs synergies as climate change adaptation strategy(SA) • Farm-level land use optimization tool (SEA) • Draft LAPA developed for Nyando. • Framework and Guidelines on participatory Local-Adaptation-Planning developed in India and Colombia • Concept and framework developed on local governance for the proof-of-concept sites SEA • Innovative data collection/analysis approaches developed in LAM (citizen science) **Gender synthesis report for F1-CoA 1.2:** • GSI dimensions considered in targeting, prioritization planning tools and NEPAD practical guide (i.e., PLUP-CC in SEA, CSA framework in WA, LAM, SA,

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	Southern Africa, South Asia (India) and South East Asia (Vietnam).		SEA); Women engaged and beneficiaries of the process; Mali's portfolio included income diversification option with fish ponds targeted to women; in Senegal gender dimension addressed in the extensive pastoralist systems. • Framework being developed to plan for gender-specific interventions in climate-smart coffee/cocoa systems. • Gender considered in: Weighted means and Bayesian networks targeting methods; AGMIP analyses; the shade tree advice tool. • Gender-disaggregated data collection in Rural Household Multiple Indicator Survey (Citizen Science) and inclusion of indicator on gender-specific control of livelihood activities/income streams. • Gender segregated data collection and socio-economic and tradeoff analyses that considers potential benefits of CSA options to women and small/marginal farmers (EA, SA). • CBA work was modified in SEA to include poor/disadvantaged households • Youth and women in Nyando will be involved in validation of draft local adaptation plan.
1.3 Approaches, strategies and scaling up/out mechanisms (e.g. CSV), for enhanced adaptive capacity and resilience from the field to the sub-national level	The 2019 outcome for **1.3** is: 25 national and subnational major development initiatives and public institutions prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools. 2015 activities will: • Involve systematic testing of CSA options, individually and in portfolio, in climate smart villages in all 5 regions • Development of robust evaluation methods for CSA effectiveness through	Key results: • Participatory platforms for evaluating CSA options established in all 5 regions • Establishment of locally appropriate and robust approaches for evaluating CSA effectiveness at field level • Data on CSA options effectiveness feeding into CSA databases and tools 2015 activities will result in: • Demonstration and robust testing of CSA options providing greater evidence for enhancing investment in CSA and scaling out of viable practices and technologies	**Synthesis report for F1-CoA 1.3:** •The USAID-FTF portfolio was analyzed globally for CSA-opportunities and entry-points. • A CSV framework used across all regions to develop strategies and scaling up/out plans. Regional specificities include: In SA: • New framework including systematic steps for testing/evaluating different CSV models (from climatic risks analyses to integration in existing policies/institutions) being used (WorldFish in Bangladesh, ICRISAT in India, LI-BIRD and Practical Action). UTFI approach is being tested in India and Bangladesh to capture flood water and groundwater recharge (IWMI). Incentive framework for mainstreaming CSA interventions in local adaptation plans developed (CIMMYT/partners). In SEA: • Two up-scaling approaches tested: One at national-scale focused on catalyzing roll-out of CSA adoption (Vietnam), another attempting to generate evidences in impact areas (Vietnam and Philippines).

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	participatory approaches In 2015, work will be carried out in all 5 CCAFS regions		In EA: • AIP established aiming at enhancing the role of agri-business in scaling CSA (Kenya). In WA: • Development of business cases to support scaling out of water storage options. Scaling pathways identified via public policy and private companies in Ghana. • Systems framework was developed to plan for climate smart coffee/cocoa sector (EA, WA) and networks are being developed in Peru with coffee and cocoa producer exporter organizations, NGOs and public sector to strengthen engagement and further scaling up. In LAM: • Participatory local adaptation planning is being scaled-out by local partner (Northern Colombia) and discussions with UNEP and FAO are ongoing for scaling. Results from the CSA prioritization framework were used in Guatemala as strategy to scale out the methodology through the national extension service. **Gender synthesis report for F1-CoA 1.3:** • CSV framework developed envisions positive impact on social inclusion for agriculture dependent communities by including women and marginal farmers (SA). • Framework on mainstreaming gender for scaling CSA. • SEA's up-scaling approaches have consistently addressed gender dimensions and the information profiling and stakeholder mapping involved women stakeholders. • Gender inclusive AIP established in Kenya. • In WA: Gender focused projects implemented on: understanding male and female farmers' access and use of climate information (Ghana); valorizing non-timber forest products and assessing the performance of Cassia tora and cowpea under improved zai techniques for increased resilience (Niger). • Role of gender identified as key in the selection and use of different water storage options supporting women and youth for business case development.

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1.4 Innovative knowledge management systems (ICT, information network, multi-stakeholder platforms, learning alliances, fora etc.) and strategic engagements approaches and partnerships that promote access, co-creation, capacity building, learning, 2 ways sharing and dissemination of CSA information and tools to farmers, extension services, agro-dealer	The 2019 outcomes for **1.4** are: - 25 national and subnational major development initiatives and public institutions prioritize and inform project implementation of equitable best bet CSA options using CCAFS science and decision support tools; - 15 public-private actors at national and subnational levels are using new incentive mechanisms or business models that explicitly promote equitable climate smart approaches along the value chain, using CCAFS science. 2015 activities will : • Generate site and climate specific management systems for rice in Colombia, explore opportunities for Peru and Nicaragua • Use citizen science approaches for testing, evaluating and scaling out CSA options • Generate evidence based strategies to strengthen extension systems in Latin America (Colombia and Nicaragua) • Involve training on citizen science approaches with local actors and institutions	Key results: • ICT data collection applications in the hands of rice farmers in at least 2 countries in Latin America • Low cost monitoring networks established for climate and crop monitoring in Latin America and South Asia • Training materials on Citizen Science approaches • Country profiles identifying entry points for CSA investment • Knowledge platforms for co-learning with IFAD ASAP program • Training on climate analogues approaches with interested institutions in target regions 2015 activities will result in: • ICTs generating data on CSA effectiveness, and providing appropriate recommendations to stakeholders on CSA options and management decisions • Enhanced capacity of local and regional organisations to understand CSA and mainstream into development agendas	**Synthesis report for F1-CoA 1.4:** • High level workshop held with 10 major agencies to develop a common overall CSA metrics framework. • Networking and CCAFS products dissemination at the London Resilient Supply Chains Conference • P4S-CSA project positioned as key knowledge broker in the CSA discussion. The African Perspective on CSA; Inputs integrated into NEPAD Practical guide and GACSA's Knowledge Action Group. • Global learning CSV workshop to reflect on lessons learnt, methodological harmonization and cross-regional analyses. • CSVs in SA, WA and EA working as effective local innovation platforms (Haryana and Bihar's focused on LAPAs) and becoming learning-sites. • New multi-stakeholder learning platforms established to support collective action, cross-country learning (SEA) and coffee/cocoa value chains (LAM, WA). • Methodology to identify/prioritize capacity-building needs(WA) • Policy level engagements on climate literacy(SA) • Training/empowerment of local stakeholders/technicians/producers associations on: - CSA, prioritization framework and agroforestry(Mali, Ghana, Vietnam) - Adaptation planning, CSA testing/implementation (SEA, LAM, WA). - ICTs and the Site-specific-Agriculture platform for efficient data collection/analysis and strengthening cooperatives' internal control systems (LAM). - Local rural radios and mobile apps for project planning/evaluation (WA) and crop management recommendation (SEA); participatory SMS content development programme rolled-out in Tanzania. • Updated Climate Wizard (outputs integrated into CSA National Framework Programs in five African Countries). • Draft version of interactive web mapping tool to support the Africa CSA Alliance planning efforts (http://nkoech.github.io/africacsa/). • Online platform for CSA citizen science (www.climmob.net). • Global Yield Gap Atlas

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networks, local governments, private sector, academia etc.	• Involve engagement with RECs and national institutions on CSA inclusion in agricultural development plans and strategies • Involve learning platforms for banana sector planning In 2015, work will be carried out in East Africa (Ethiopia, Kenya and Uganda) and West Africa, South Asia (India), LAM (Colombia, Peru, Nicaragua, Honduras/El Salvador)		Information campaigns complemented with information products (policy briefs, manuals) increased the awareness and appreciation of the CSA approach of thousands farmers, students and village development planners **Gender synthesis report for F1-CoA 1.4:** • Gender and CC Network established to promote collaborative research, sharing of methods and approaches; exchange experience on project design and implementation among CGIAR researchers. • Learning event: Closing the Gender Gap in Climate Change held in Paris. • Local innovation platforms in CSVs include selection and implementation of gender sensitive climate-smart interventions and participation of women's groups (home gardening and school gardening) and poor/disadvantaged farmers in testing. • Women and youth's higher affinity and skills to use ICTs for accessing information highlighted by CSMS project results (LAM) • Active participation of women secured across knowledge sharing and trainings activities (WA, EA, SA, SEA, LAM) • Champion female farmers will be leading testing groups and disseminating knowledge/experience in SEA. • The online platform for CSA citizen science includes gender-segregated data and emphasizes the important of participation by both women and men (SA, LAM, EA). • PRODECOOP monitoring systems included CSA gender-specific and gender-related indicators in coffee landscapes of Nicaragua
1.5. Evidence on equitable CSA certification schemes, new agri-business models,	The 2019 outcome for **1.5** is: 15 public-private actors at national and subnational levels are using new incentive mechanisms or business models that explicitly promote equitable climate smart approaches along the value chain, using CCAFS science.	Key results: • Initial vulnerability assessments for cocoa and coffee in West Africa and Latin America • Establishment of a value chain partnership consisting of public and private sector actors in the coffee/cocoa sector	**Synthesis report for F1-CoA 1.5:** • Discussions advanced with World Bank to trial novel CSA financial options/mechanisms with CARE. • 2 CCAFS projects pitched to the GACSA Investment Action Group • Active engagement and climate change information provided to NGOs, public and private sector actors involved in coffee and cocoa value chains in WA and LAM is helping to frame the conversation about what needs to be done in 2016 to develop CSA certification schemes.

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
financial incentive mechanisms and policy instruments to promote and mainstream CSA adoption at different levels of the value chain	2015 activities will : • Identify vulnerability in coffee and cocoa value chains for Latin America (Nicaragua and Peru) and West Africa (Ghana) • Explore potential for CSA certification schemes to incentivize adoption of CSA practices and technologies in the coffee and cocoa value chain • Explore impact investment for incentivizing CSA adoption in the coffee and cocoa value chain • Identify novel financial instruments for incentivizing CSA In 2015, work will be carried out in Nicaragua, Peru, Ghana and in a global context.	• Establishment of a seconded position of CCAFS in the World Bank to explore financial instruments and identify opportunities for testing in CCAFS climate smart villages 2015 activities will result in: • Piloting of novel financial instruments along the value chain for incentivizing CSA practices and technologies, demonstration of viability in coffee/cocoa • Identification of new financial instruments for scaling out CSA	• Development of National CSA Framework Programs for scaling CSA within 5 African countries (Kenya, Tanzania, Uganda, Botswana and Namibia) by P4S-CSA is providing a basis for developing large funding proposals (e.g. GCF), integration into INDCs and sub-national implementation plans. • AIP established in Kenya aiming at enhancing the role of agri-business in scaling CSA. • Criteria and a business assessment tool developed to identify and evaluate business cases opportunities/ barriers from CSA perspective. • Primary and secondary data collected in India for developing business models including bio-physical, socio-economic and trade-off analyses; Documentation of CSA led business cases developed is providing excellent evidence base for attracting rural youth and will help scaling. • Action plans developed for promising CSA portfolios in Haryana, Bihar and Punjab, India. • Synthesis report produced on local level incentives & policies supporting CSA for all CSV sites in India. • Knowledge sharing publication is being developed in LAM on existing climate-smart investment plans from Nicaragua and Guatemala's small coffee farmers' cooperatives. **Gender synthesis report for F1-CoA 1.5:** • Strong gender and social inclusion angle planned for Pilot on financial instruments to be trialed with WB and CARE in 2016 • NUI's work focused on reaching smallholder women farmers thorough understanding gender issues in bean value chains and seed systems. • Gender analysis on coffee/cocoa climate-smart value chains in WA and LAM initiated with a focus on youth and land inheritance. • ICRAF/CIAT worked with researchers Royal Galloway University to develop CSA gender indicators for use in the CSA Profiles being developed for six African countries and in the CCAFS CSA Prioritization Framework. • Gender aspects addressed in the business models identification in Africa and Asia
2.1 New	The 2019 Outcome for **2.1** is: 15	Key results:	**Synthesis report for F2-CoA 2.1:**

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
climate information and analysis that enhances the capacity of data providers (e.g. regional and national meteorological institutions) to meet the demands of climate service beneficiaries	regional, national, and sub-national institutions or consortia develop or improve major demand-driven, equitable, climate-informed services supporting rural communities, using CCAFS research outputs. 2015 activities will: • Initiate development of locally-relevant agro-climate information in Latin America, East Africa and Southeast Asia • Continue development of capability to produce tailored agro-climate services through national and regional institutions in West Africa • Initiate development of improved early warning systems for seasonal climate impacts on agricultural pests and diseases in Southeast Asia, and food security in East Africa In 2015, work will be carried out in Guatemala, Colombia, Honduras, Rwanda, Tanzania, Malawi, Vietnam, Laos, Cambodia, Mali and Ghana.	• Methods to produce high-resolution historic climate data and predictions adapted to meet National Meteorological institutions demands in Colombia, Guatemala, and Honduras • Methodology for integrating climate forecasts with crops models and indigenous knowledge in Colombia • Capacity to produced farmer-relevant climate information in Rwanda, Tanzania, Malawi, Mali and Ghana • Crop models, spatial data sets and tools calibrated and validated to model impacts of seasonal climate on food production in East Africa • Expand capabilities of CRAFT tools for within-season forecasting of crop production, risk analysis, and climate change impact studies • Rubber plantation distribution and livestock disease risk analysis and mapping in Vietnam and Laos 2015 activities will result in: • A regional observatory platform for improved climate risk management in the Colombian agricultural sector • Initial development of agro-climate advisory products that integrate farmer-generated observations with downscaled weather forecast and location specific agriculture management options tailored to next	• WSU improved the CCAFS Regional Agricultural Forecasting Toolbox (CRAFT), adding models for additional crops and improved AgMIP data translation tools, providing a more open distribution system, and enhancing usability and documentation. • In EA, ICPAC evaluated climate forecasting and downscaling tools to improve seasonal forecast information, converted probabilistic rainfall forecasts into daily rainfall amounts, and introduced seasonal forecasts of rainfall quantities into the 41st Greater Horn of Africa Climate Outlook Forum (GHACOF41). IRI trained staff of Meteo-Rwanda in management of ENACTS gridded data sets and development and maintenance of online climate information "maprooms." • In WA, NHMS in Ghana and Mali were trained to improve data quality control and analysis, and introduced to daily rainfall estimation through merging of satellite data with their station data. ANACIM (Senegal) identified major capacity needs for climate data. • In Colombia, National Agroclimatic Bulletins provided crop management recommendations based on forecasts, and strengthened communication between climate information providers and agricultural user groups. • In SEA, IRRI tested a beta version of climate-informed, ICT-based, agro advisory services for the Mekong and Red River deltas, recording farmer demographic information to better match information to farmer needs. ICRAF analyzed relationships between climate and yield data, and mentored NMHS staff to improve forecast information in Vietnam. ILRI initiated risk mapping for climate-sensitive zoonotic diseases based on a 40-year climate data set. • In SA, new climate datasets were developed in Nepal and Bangladesh for the CRAFT tool, and used to estimate crop yields and characterize climatic risks at sub-national and local levels. **Gender synthesis report for F2-CoA 2.1:** • In WA, the development of climate information tailored to farmer needs emphasized building awareness by NHMS of the differing needs associated with gender, wealth and education level. • In Colombia, efforts to increase farmer feedback to information providers

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
		users in Vietnam, Cambodia and Laos	emphasized gender roles and their impact on gender-specific concerns and information needs. • In SEA, development of climate-related agro-advisory services ensured that at least 20% of participants in plot testing were women, in order to tailor services to the differing need of women and men.
2.2 New knowledge, capacity, and tools that support the provision of equitable climate services for farmers	The 2019 Outcome for **2.2** is: 15 regional, national, and sub-national institutions or consortia develop or improve major demand-driven, equitable, climate-informed services supporting rural communities, using CCAFS research outputs. 2015 activities for will: • Expand and improve climate services for farmers in 6 countries • Design, assess needs, and initiate development of national climate services for agriculture in Rwanda • Develop capacity of climate service communication channels in 3 countries • Assess and address gender equity challenges for climate services for farmers in 2 countries • Develop a range of training and capacity development resources In 2015, work will be carried out	Key results: • Evidence of effective scaling of climate services for farmers in Senegal • Evidence of gender equity challenges, and effective solutions, for climate services in Senegal and Tanzania • Gender-disaggregated needs assessment, and training of trainers for communicating climate information services to farmers, in Rwanda • Farmer seasonal forecast communication, planning and training workshops in Rwanda, Tanzania, Colombia, Guatemala, Mali and Ghana • Research protocols for developing evidence and knowledge products on effectiveness and equitability of rural climate services (Vietnam, Cambodia, Laos) • Training materials on climate services for communications intermediaries (agricultural extension, development NGOs), including gender-related communication challenges and solutions • Interactive radio training materials and prototype programming for rural	**Synthesis report for F2-CoA 2.2:** • In EA, CCAFS (with U. Reading, ICRAF, ICRISAT, FRI) and WFP assessed farmer information needs, trained agricultural extension and other intermediaries in the Participatory Integrated Climate Information Services for Agriculture (PICSA) approach, initiated district-level seasonal Planning and Review workshops, and piloted communication of climate information through rural radio and SMS in target districts in Tanzania and Malawi. • In WA, U. Reading and other partners trained NGOs and extension agents in northern Ghana on the PICSA approach, and assessed resulting communication and use of information at the farm level. Results showed that 97% of trained farmers changed their management in response. ANACIM engaged the Union of Rural Community Radios to generate and disseminate downscaled weather and seasonal forecast across Senegal. • In LAM, Local Technical Agroclimatic Committees Initiative analyzed forecasts, developed advisories and incorporated these in bulletins in for farmers in Colombia. Simplified wording was used for bulletins targeting indigenous communities. • In SEA, IRRI tested a beta version of climate-informed, ICT-based, agro advisory services for the Mekong and Red River deltas, recording farmer demographic information to better match information to farmer needs. ICRAF and CARE developed and piloted the agro-climatic handbook and methods for downscaled agro-climate zone maps, and initiated village/commune-level agroclimate information advisories integrating farmers' local knowledge. ILRI initiated investigation of the seasonality of climate-sensitive diseases in Vietnam, to inform policies for public health, agriculture and environment. • The SA RPL assessed feasibility of implementing ICT based agro-advisory system in Climate Smart Villages in Nepal.

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	in Vietnam, Cambodia, Laos, Colombia, Guatemala, Rwanda, Tanzania, Malawi, Senegal, Ghana and Mali.	climate services 2015 activities will result in: • Design (in Rwanda) and piloting (in Tanzania and Malawi) of an ICT-based 2-way communication system linking farmers with national climate service providers • Design (in Rwanda) and implementation (in Tanzania, Malawi) of participatory rural radio programming to scale up climate services for smallholder communities • Prototype mobile phone-accessible agro-meteorological advisory service for rice in the Mekong Delta and Red River Delta of Vietnam	**Gender synthesis report for F2-CoA 2.2:** • UF conducted comparative study of gender-specific use of climate services in Kenya and Senegal, and investigated the potential for health clinics to provide information for rural women in Senegal. • In EA, baseline and needs assessment surveys in Tanzania and Malawi were disaggregated by gender. UF assessed progress and provided guidelines for strengthening the benefits of PICSA for women in Tanzania in the GFCS project. • In northern Ghana, 40% of the 6000 farmers reached through the PICSA process were women. Communities of practice formed to co-design, co-test and co-validate climate services are composed of at least 30% women and 30% youth to ensure that climate services that are adapted to needs of women and youth. • Development of agro-advisory services in Colombia included understanding gender roles throughout the production chain of the key crops. • In SEA, ICRAF collected gender-differentiated information on men and women farmers' needs and use of agro-climate information.
2.3 Weather-related insurance products and programs designed, tested, and brought to scale with implementing partners	The 2019 Outcome for **2.3** is: 15 regional, national, and sub-national institutions or consortia develop or improve major demand-driven, equitable, climate-informed services supporting rural communities, using CCAFS research outputs. 2015 activities will: • Engage and inform national upscaling of insurance for smallholder farmers in Nigeria • Improve methodology and enhance capacity to design and implement index-based	Key results: • Design of drought insurance bundled with climate-adapted germplasm for project areas in East Africa proposed, discussed and approved by partners (insurance, reinsurance, input suppliers and farmers representatives) • Evaluation of existing index insurance programs in East Africa • Tested weather index insurance prototype in Honduras, to inform commercialization 2015 activities will result in: • Improved implementation of input-	**Synthesis report for F2-CoA 2.3:** • In WA, index insurance products were designed for Northern Ghana, and a roadmap towards implementation was laid out with the Ghana Agricultural Insurance Program. In Senegal, all major index-based insurance stakeholders took part in a consultation workshop on the role of mobile platforms to support scaling, and developed three collaborative project proposals. CCAFS and partners (CIMMYT, Pula Advisors) worked with the Nigeria government to draft a roadmap for the development of inclusive insurance for its agriculture sector, and inform GIZ-supported implementation of area-yield and weather index insurance pilots. • In LAM, IRI designed prototype index insurance for basic grains in the Dry-Corridor of Colombia, and developed technical guidance for insurance companies to adapt and implement the product. • In SA, the RPL and partners developed innovative methods that improve the satisfaction of farmers, industry and government in index insurance for rice, pearl millet, soybean and cotton in Maharashtra state. The Government of

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	insurance for farmers in 5 regions • Develop new methodology to insure flood-related losses in South Asia • Analyse how complementarities enhance update of both weather-related insurance and CSA technologies in 3 countries In 2015, work will be carried out in India, Bangladesh, Nigeria, Ghana, Senegal and Honduras; and regionally in East Africa.	linked and index-based agricultural insurance upscaling in Nigeria • Bundled weather insurance products in India, in partnership with local financial institutions, that promote the adoption of CSA technologies • Meso-level index-based flood insurance scheme for Bangladesh and India using flood hazard model and remote sensing data	Maharashtra has used these improved insurance products to protect one million farmers in 2015. IFPRI developed a theoretical framework to link insurance with climate-smart technologies. IWMI initiated development of Index-based Flood Insurance (IBFI) for India (Bihar) and Bangladesh (Sirajganj), through engagement with local communities, and Ministries of Disasters and Agriculture. These agencies are participating in the research and committing in-kind resources to subsidize the pilot IBFI scheme. **Gender synthesis report for F2-CoA 2.3:** • In WA, a set of gender-sensitive index insurance design materials was developed, tailored to the Northern Region of Ghana, and pre-tested. • In LAM, participatory processes to design index insurance included the participation of men and women farmers, to capture both perspectives. • In SA, gender-disaggregated data were collected to incorporate gender-based differences into the design of Climate-Smart Insurance products. The development of Index-Based Flood Insurance has involved women and smallholders to identify how they may benefit.
2.4 Decision support systems improved or developed for incorporation into national food security safety net programs	The 2019 outcome for **2.4** is: 15 regional, national, and sub-national institutions or consortia develop or improve major demand-driven, equitable, climate-informed services supporting rural communities, using CCAFS research outputs. 2015 activities will: • Initiate development of a robust, science-based food security forecasting system for East Africa that integrates improved seasonal climate, production and price forecasts • Initiate development of an	Key results: • Synthesis of opportunities to enhance the contribution of climate-related early warning systems across Africa to climate-resilient development and adaptation goals, informing COMESA, AU and SBSTA. • Review and evaluation of existing food security information systems, including gender considerations, across institutions in East Africa • Characterization of food security and climate information flows and decision processes in Guatemala and Colombia • Consolidated food security sentinel site database for Guatemala	**Synthesis report for F2-CoA 2.4:** • In EA, DSSAT crop models have been calibrated using data collected from previous experiments and agricultural sample surveys, and tested to simulate national yields of maize and sorghum in Ethiopia and Kenya using gridded climate and soil data at high resolution. • In WA, CRAFT has been adapted to use AGRHYMET's gridded data sets and preferred crop model, SarraH, for regional crop production forecasting and food security early warning. AGRHYMET, which is mandated to provide crop monitoring and early warning services regionally, already has substantial experience calibrating, testing and evaluating SarraH. The Environmental Information System in Cote d'Ivoire developed a comprehensive logical framework, elaborated a list of environmental indicators, developed a robust data collection strategy and chose the appropriate platform capable of hosting the project. • In LAM, work to improve food security information and decision support focused on studying women's participation in decision-making processes in

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	improved food security information system in Guatemala and Colombia • Advise regional organizations and SBSTA on improvements to climate-related food security early warning and response systems across Africa In 2015, work will be carried out in Ethiopia, Kenya, Tanzania, Guatemala and Colombia; and regionally in Africa.		community committees at food security monitoring sentinel sites in Guatemala. • In SEA, ILRI conducted a literature review to understand the relationship between climate change and zoonotic diseases, to inform the development of early warning and decision support systems in Vietnam. **Gender synthesis report for F2-CoA 2.4:** A study of participation in community committees at food security monitoring sentinel sites in Guatemala emphasized women's participation in decision-making and control over income.
2.5 Evidence and knowledge products synthesizing national gaps and opportunities to guide regional and global investment in climate informed agricultural and food security decision-making	The 2019 outcome for **2.5** is: US$ 15 million increase in demand-driven investments in climate services for agriculture and food security decision-making, that are informed by CCAFS science and engagement, relative to 2014. 2015 activities will: • Stimulating technology cooperation and enhancing the development and transfer of climate technologies (CTCN - Climate Technology Centre & Network) • Tailored Agro-Climate Services and food security information for better decision making in Latin America • FP2 Synthesis and Supporting Activities • Surveillance and early warning	Key results: • Collaboration agreement signed between the Information and Communication Network of the Agricultural Sector - AGRONET, MADR and CCAFS Agroclimas to spread all results generated in the project to farmers • Framework agreement between Honduras's Ministry of Agriculture and Livestock and CIAT to generate a roadmap and joint work in Honduras • Work in identifying gender roles and social differentiation throughout the entire production chain of the involved crops, to tailor the required agro-climatic information and to validate usability. Complete mapping based on interviews and focus group discussions with farmers and conducting interviews with key	**Synthesis report for F2-CoA 2.5:** • CCAFS contributions to the 42nd session of the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA) included a submitted paper and InfoNote with recommendations on how investment in early warning systems could contribute more to the development of climate-resilient agricultural systems and rural livelihoods in Africa. • In WA, CCAFS collaboration with ANACIM to identify challenges and develop strategy for scaling up climate services for agricultural risk management in Senegal informed funding by USAID. • In Colombia, publication on the current status of climate services for agriculture, and mapping of communication networks strengthens the knowledge and evidence base for potential future investment. • In SEA, ILRI-led studies and information materials on the prevalence of climate-sensitive diseases, and potential environmental and climatic risk factors, paves the way for expanded development of national early warning systems for those diseases. **Gender synthesis report for F2-CoA 2.5:** Analysis of climate information needs in Senegal considered specific information needs of women and youth. Mapping of climate information networks in Colombia used separate focus groups for women and men to

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	systems for climate sensitive diseases in Vietnam and Laos Climate Services for Africa	stakeholders.	capture gender-related differences.
2.6 Engagement, knowledge synthesis and evidence to guide regional and global investment in climate services for agriculture and food security management	The 2019 outcome for **2.5** is: US$ 15 million increase in demand-driven investments in climate services for agriculture and food security decision-making, that are informed by CCAFS science and engagement, relative to 2014. 2015 activities will: • Support USAID investment in climate services in Africa through: regional capacity development, improved methods to design and communicate agriculturally-relevant services, and guidance and evidence for national climate services investment • Synthesize knowledge, and provide partnership support, for Flagship projects that include climate services • Engage and inform Global Framework for Climate Services, Climate Services Partnership, and major climate services donors and development organizations In 2015, work for **2.5** will be primarily global.	Key results: • CGIAR Climate Services Community of Practice workshop and report, on global climate services engagement and funding opportunities • Publication on institutional mechanisms to support co-production of climate services • Publication on coordinating investment in climate services • Analysis and synthesis of evidence of the economic benefits of climate service investment in Africa • CS4D program secretariat and governance established at CIAT • CCAFS representation at major events on climate services	**Synthesis report for F2-CoA 2.6:** A workshop, 'Strengthening Regional Capacity for Climate Services in Africa' (Victoria Falls, Zimbabwe), aimed to connect CCAFS work on strengthening climate services capacity through African regional institutions, with the Africa-wide climate research and climate services community at the fifth conference on Climate Change and Development in Africa (CCDA-V). The FL maintained contact with the leadership of the GFCS, and key individuals at WB and USAID that invest in climate services. **Gender synthesis report for F2-CoA 2.6:** Not applicable

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
3.1 Methods and data for quantifying low-emissions agriculture options appropriate to smallholder farmers	The 2019 outcome for **3.1** is: 8 low emissions plans developed for implementation that have significant mitigation potential, i.e. will contribute to a reduction of at least 5% GHG emissions intensities or reach at least 10,000 farmers, including at least 10% women. 2015 activities will: • Expand low cost GHG quantification and comparative analysis of mitigation options and trade-offs to include livestock, fertilizer management and larger landscapes (6 Centers, 10 countries, WLE links), research priorities identified by previous CCAFS work • Improve quantification of nitrous oxide based on meta-analysis and modeling of data from the developed world • Adaptation of biogeochemical models for use in developing countries • Quantify potential emissions reductions from agricultural practices, emissions factors and agricultural activity data • Establish emissions baselines • Develop and share low-cost	Key results: • Active SAMPLES website providing resources to mitigation scientists from multiple countries (SAMPLES) • Peer-reviewed manuscript of GHG quantification from Latin America published (SAMPLES) • Soil fluxes of GHGs under different tillage, residue and nutrient management quantified in rice-wheat and maize-wheat system in two agro-ecologies in the Indo Gangetic Plain (CIMMYT) • Mitigation co-benefits of resilient and productive agricultural practices (tillage, residue and nutrient management) quantified to determine their climate smartness (CIMMYT). • 10 – 20 scientists from developing countries trained in low-cost quantification methods, at least 40% of them women. 2015 activities will result in: • 2-5 emissions factors contributed to global data bases • 3-5 countries using elements of protocol for improved GHG quantification methods from online data base	**Synthesis report for F3-CoA 3.1:** • In 2015 CCAFS scientists generated Tier II and III-level data for smallholder farm emissions in at least nine countries for at least six types of farming systems. Emissions data were collected for improved and degraded pastures in six countries of Latin America (CIAT); and for wheat and maize management interventions in the IGP (CIMMYT) and pulses in dryland/rainfed India (ICRISAT). Collection was started for feed and manure interventions in Kenya (ILRI), but trials were interrupted due to disease outbreak and subsequent killing of animals). Livestock Plus established infrastructure and methods for measuring livestock emissions in Costa Rica and Colombia (CIAT). • Innovations for reducing costs were tested: In Kenya, a national targeting and county-level sampling strategy were developed (CIFOR). In Vietnam, a national inventory of methane from rice production was conducted using a process-based model linked to GIS data (ILRI). EX-ACT analysis of 40 USAID food security projects showed where LED opportunities existed. In Mongolia, MRV for livestock was developed using M&E that meets stakeholders' other information needs. • Other notable achievements include: publishing of the SAMPLES website, including methods for low-cost measurement and a database synthesizing Tier 2 emissions for smallholder farming (cross-center initiative with F3, 7,214 unique users, 13,265 page views); a dataset of emissions from farming systems in the tropics based on 600 published articles (F3 with ICRAF); a dataset and statistical analysis of field N2O emissions for the tropics and sub-tropics (CIMMYT), and training of 8 CLIFF students (F3 with CIAT) and 6 LAMNET students (CIAT). **Gender synthesis report for F3-CoA 3.1:** Gender impacts for this CoA focus on capacity building of women scientists. In 2015, 6 of the 8 CLIFF students were women. Three women were trained from the IAE in Vietnam in assessing GHGs for national inventories.

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	quantification procedures. • Analysis of agricultural practices will include social and economic methods to assess acceptability of practices in terms of food security impacts and differential effects on women and men. • Build capacity of government and local partners. In 2015, work will be carried out in Colombia, Costa Rica, India, Kenya, Mexico, Nicaragua, Peru, Tanzania, Uganda, and Vietnam		
3.2 Decision support for identifying and prioritizing low-emissions CSA options, including synergies and tradeoffs with development objectives	The 2019 outcome for **3.2** is: 8 low emissions plans developed for implementation that have significant mitigation potential, i.e. will contribute to a reduction of at least 5% GHG emissions intensities or reach at least 10,000 farmers, including at least 10% women. 2015 activities will: • Identify mitigation targets and priorities by region and country using improved decision support tools • Develop or identify user-friendly tools/ models/ maps that estimate emission reduction potentials, trade-offs	Key results: • Widely disseminated report analysing global priorities for mitigation activities utilized by national and international decision makers such as climate finance organizations and agricultural standards (IIASA) • Journal articles on global targets for climate change mitigation (FP3) • Global synthesis of gender and mitigation technologies (FP3) • Draft tool for identifying low emissions development pathways shared utilized by national researchers in CCAFS regions (IIASA) • Wide dissemination of and publication of peer-reviewed article on online platform for presenting mitigation	**Synthesis report for F3-CoA 3.2:** • CCAFS scientists enhanced support for LED decisions in 2015 by identifying impacts of LED practices, prioritizing interventions, setting mitigation goals, identifying mitigation options and providing data for analyzing trade-offs. • Assessment of evidence for climate smart practices in dairy (fodder production, feeding practices, animal health and breeding) in Kenya, livestock in Colombia and Brazil, and conservation agriculture in India provide decision makers with practices relevant to specific agroecosystems. • Identification of emissions hot spots in Vietnam and development of a sampling strategy for interventions related to the Kenya Dairy NAMA provided decision makers information to prioritize interventions. • Development of the aspirational mitigation 2-degree target for agriculture globally and for selected countries and analysis of mitigation in INDCs developed for COP21, showing 103 countries pledging mitigation in agriculture, help to guide ambition and mark progress. • Other supporting analyses for development of NAMAs and LED policy include analysis of 40 USAID projects to identify LED priorities, finance mechanisms in the dairy sector in Kenya; analysis of dissemination platforms

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	(cost-benefits), synergies, feasibility, and gender impacts of LEA practices • Quantify mitigation co-benefits of climate smart village scale-up • Populate decision-support tools with field-based quantification data in strategic locations • Engage stakeholders to assess and increase uptake of proven reduced agricultural emissions initiatives • Provide technical assistance and communication tools to enable government climate change planning In 2015 activities will take place in Bangladesh, Colombia, Costa Rica, India, Kenya, Mexico, Mongolia, Nicaragua, Peru, Tanzania, Uganda, and Vietnam	benefits of smallholder farmers (U Edinburgh) • User-friendly, scalable decision-support tool for spatially-linked identification of effective mitigation options for sites and regions available online for projects in East Africa (University of Aberdeen) • Comparative study on the social contexts and structural and normative conditions affecting opportunities for increasing gender equality in East African Dairy Development project livestock value chains (ILRI) • Journal article analysing the social distribution of participation in targeted livestock value chains in terms of gender and socio-economic status (ILRI) • Pilot implementation of practices (e.g. feeds, manure management) in selected dairy value chains, with an analysis of potential for scale-up (ILRI) • Initial draft of a NAMA proposal for Kenya's dairy sector, including climate finance investment propositions (UNIQUE Forestry and Land Use, ICRAF) • Governments of Costa Rica and Colombia have baseline information on type, state, management and distribution of different pasture-based cattle production systems (CIAT) • National decision makers in India have	for AWD and stakeholder influence in Vietnam; and analysis of local government policy for peat management in Indonesia. • Development and dissemination of v2 of CCAFS-Mitigation Options Tool will enhance rapid analysis of mitigation options and priorities. • Compendium data will enable analysis of trade-offs between emissions reductions and other benefits, such as yields. **Gender synthesis report for F3-CoA 3.2:** The most significant work for achieving long-term outcomes was an assessment of gender differentiated roles in dairy supply chains and best practices among implementing organizations for gender equity in East Africa to inform development of the Kenya dairy NAMA. Gender dimensions were analyzed in the review of INDCs and in the analysis of USAID LED options. Other activities ensured inclusion of men and women or disadvantaged groups in conducting research or training: CIFOR in the monitoring of local regulations in Indonesia, IRRI's social influence mapping and ILRI's training of women scientists to conduct national inventories.

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
		in-depth analysis of economically viable mitigation potential for subsectors in agriculture (CIMMYT) • National decision makers have comprehensive, high-quality information and consistent metrics on rice management practices, their methane and other GHG mitigation and food security impacts, and opportunities and barriers to implementation at a central kiosk (CCAC) • Modelling framework for ex ante comparisons of locally optimized climate-smart trajectories with production and land use outcomes determined by global/external forces, for use in Vietnam (IFPRI) • Methodology and framework to elicit how men and women are likely to differentially use and value different elements and services of landscapes, to support national mitigation planning in SEA (IFPRI) • Gender-differentiated, participatory selection of mitigation options in rice systems for dissemination and inclusion in NAMA plans in SEA (IRRI) 2015 activities will result in: • 10 – 20 decision-makers involved in the development and implementation of tools (disaggregated by gender) • 2-4 strategies and policies to which	

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
		CCAFS scientists, methods and tools are contributing • Mitigation goals included in Vietnam's Green Growth Strategy (IFPRI) • Low Emissions Development strategies for Colombia and Peru discussed, agreed upon with government officials and producers associations (IFPRI) • Practical GHG MRV system supporting NAMA based on the Mongolian National Livestock Programme (ICRAF)	
3.3 Incentives and innovations for scale-up of low-emissions practices and avoided deforestation by agricultural commodities	The 2019 outcome for **3.3** is: 4 million hectares targeted by research-informed initiatives for scaling up low-emissions agriculture and preventing deforestation. 2015 activities will: • Test promising entry points for implementing mitigation, including nationally appropriate mitigation actions (NAMAS, in Kenya, Colombia, Peru, Costa Rica), sustainable commodity supply chains (Indonesia and Brazil, cross-CRP links) and scoping exercises for planning large-scale implementation of mitigation (Vietnam, Colombia, USAID and Feed the Future Program).	Key results: • Review on financing the transition to low-emission agriculture (FP3) • Analysis of mitigation opportunities within USAID Feed the Future programming (FP3) • National decision makers in Kenya will review options for monitoring, reporting and verification of agricultural NAMAs at the level of local government (UNIQUE Forestry and Land Use, ICRAF) • Multi-stakeholder working groups in Bangladesh, Colombia, and Vietnam will use information to design agricultural development programs that scale up mitigation in paddy rice systems while also maintaining or improving food security, farmers' livelihoods, and gender equity(CCAC) • Evidence for reduced deforestation	**Synthesis report for F3-CoA 3.3:** • Understanding generalizable incentives and innovations for scaling up LED is a work in progress in CCAFS. Developing the evidence to support climate finance remains a priority. Reviews conducted of the economics of AWD in paddy rice and balanced N fertilizer use showed consistent net positive benefits of key mitigation measures due to reduced costs and increased yields, yet the amount of data available is poor and more sophisticated financial analysis for lending projects is still needed. Estimates for the cost of monitoring, reporting and verification were developed, although data is also sparse. A directory for climate finance was compiled and disseminated; there appears to be a high demand for this. Analysis of barriers and incentives was conducted for scaling up major LED options relevant to USAID. • Country-led initiatives are developing pragmatic approaches. Farmers' perceptions and agronomic and economic incentives for farmers to adopt AWD are being analyzed by IRRI to inform dissemination strategies in Vietnam and Bangladesh. Platforms for scaling up have been identified in both countries, including Loc Troi contract farming in Vietnam and two large-scale development projects in Bangladesh. Governance structures and institutional arrangements were mapped in Vietnam. In Brazil a GIS analysis quantifying the links between deforestation, land tenure and agricultural intensification suggests that the "Green Municipality" model was effective

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	• Test models for NAMAs appropriate to smallholders and support countries to develop feasible MRV systems • Analyze potential effects of climate finance initiatives on smallholder farmers with gender lens • Analyze opportunities and challenges to, and test, scaling up low-emissions systems, raise awareness and profile of low-emissions initiatives (e.g. communications activities, demonstrations, south-south learning on low-emissions incentives) • Document promising innovative institutional approaches to achieving sustainable commodities (e.g. jurisdictional governance, certification, alliance-building regulation, consumer awareness) and examine their impacts In 2015 activities will take place in Bangladesh, Brazil, Cambodia, Colombia, Costa Rica, Indonesia, Kenya, Laos, Tanzania, Uganda, and Vietnam	from increase in participation in and refined methodology and processes for sustainable beef certification in Brazil (IIE) • Multi-stakeholder platform in the Municipality of Paragominas, Brazil agree on a road map and common social, economic and environmental targets in support of sustainable beef cattle production as part of the Green Municipalities initiative to reduce deforestation (CIFOR) • Typology and database on oil palm company practices and gendered impacts of oil palm development in Kalimantan (CIFOR) • Local government decision makers have assessment of promising models for governance of sustainable palm oil and forest conservation in Central and West Kalimantan (CIFOR) 2015 activities will result in: • 3-6 research and communications activities that support specific low-emissions institutions and incentive mechanisms • 1000- 2000 farmers involved in low-emissions agriculture initiatives, disaggregated by gender (location, type of initiative, date) • 2-10 organizations incorporating lessons learned from tests of innovations and analyses of value	to reduce deforestation but is limited to promote sustainable and low emissions cattle ranching, so additional incentives are required. **Gender synthesis report for F3-CoA 3.3:** Reviews of opportunities to improve women's participation in and benefits from LED in paddy rice in Vietnam, dairy in Kenya and livestock in Costa Rica developed in collaboration with project leaders showed that dairy in East Africa has the most potential to reduce emissions while also benefitting women.

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
		chains	
4.1 Improved national planning processes through policy analyses, (re)formulation and implementation; and stakeholder analyses and engagement through scenarios, learning alliances and science-policy dialogues	The 2019 Outcome for **4.1** is: 15 equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies, informed using knowledge, tools and approaches derived from CCAFS science. 2015 activities will involve: • Identifying key stakeholders, national priorities and national policy contexts (SE Asia, W Africa) • Network and stakeholder analyses to understand drivers of climate smart technology uptake and key actor linkages (E Africa) • Policy analyses to map the current status of adaptation policies and identify entry points for improvement (E Africa, S Asia) • Supporting development of national mitigation action and adaptation plans for different sectors (Latin America) • Actions to improve climate decision making at national to local levels, including social learning approaches (Latin America, E Africa)	Key results: • Enhanced engagement with met services, including capacity strengthening in the development and use of tools that can enhance their effectiveness in influencing decision making (E Africa, W Africa; University of Reading) • Use of climate and weather information by smallholders in pilot sites in E Africa, to support their decision making and enhance their production and resilience (Tanzania, University of Reading) • Establishment of national-local policy interfaces in nine representative districts in three countries of W Africa, and their capacity strengthened (Senegal, Mali, Burkina Faso; ICRISAT) • A climate change and social learning community of practice strengthened by social learning case studies at different scales, implemented in several sites (Latin America, W Africa, E Africa; ILRI, ICRISAT, CIAT, CARIAA, IIED, CSIRO) • Documented dialogues on institutional learning and an evidence base strengthened and expanded; sets of guidelines developed, disseminated, evaluated, and refined on learning in rice systems (SE Asia, IRRI) and on monitoring and evaluating CCAFS	**Synthesis report for F4-CoA 4.1:** CSA Framework Programs were developed in five African countries through CGIAR technical support, which also supported preparation of the Kenyan INDC. Scenario-guided policy processes assisted Tanzania's Socio-Economic Development plan. The WB published a report for policy makers in Nicaragua to support the prioritization of government investment and strategies, based on the CIAT/CCAFS CSA Country Profile. Scenarios science was used in formulating Costa Rica's INDC. CCAFS-enabled science-policy dialogue led to the inclusion of agro-climatic information as an adaptation strategy in Colombia's INDC. IFPRI and CCAFS scenarios science contributed to Bangladesh's 7th Five-Year Plan and (with the CSAP) tool to the National Adaptation Plan. Bhutan and Nepal have appointed national organizations to lead the national policy development processes to implement the ITPGRFA, as well as amending existing laws for its implementation. CCAFS supported and participated in multi-stakeholder consultation workshops providing inputs into national (Vietnam, Myanmar, Cambodia, Philippines) and regional plans (ASEAN CRN) on climate change. IRRI provided inputs to Vietnam's rice sector restructuring. IFPRI organized a science-policy dialogue in the Philippines around impacts modelling research outputs. In Cambodia, CCAFS scenarios were used to initiate two new policy processes focused on business. ECOWAS and member-countries are now effectively mainstreaming CSA into regional and national agricultural plans and policies through the CSA alliance (WACSAA) and implementation framework. CCAFS made scientific inputs into country action plans and identification of priorities in Ghana, Burkina Faso, and Mali. Analysis of INDCs has been disseminated within the WB to assist in designing appropriate country strategies and project operations. **Gender synthesis report for F4-CoA 4.1:** Reviews of current CSA policy and institutional frameworks were carried out in relation to gender (EA, LAM). IFPRI research on gender differences in CC perception, vulnerability and adaptation in SEA is being published as a book. Similar research was done by PIRCCA in Vietnam and Myanmar. Use of climate information by different groups was monitored in WA; CSA action plans in

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	• Working with stakeholders to improve engagement and communication using regional platforms (S Asia, W Africa, E Africa, Latin America) • Creating evidence-based gender awareness among policy actors with intent to influence gender responsive implementation of climate change adaptation policies (E Africa and Latin America) • Setting up of strategic alliances to improve communication and impact policy at different levels (SE Asia) • Setting up of a knowledge management system for facilitating policy dialogue (Philippines) • Co-leadership of Knowledge Action Group of Global Alliance on Climate-Smart Agriculture to generate and share knowledge products that enable scaling up of CSA (global)	interventions in W Africa (ICRISAT), as well as on science-policy interface in E and W Africa (ILRI) 2015 activities will result in: • Improved next-user understanding of policy gaps and conflicts and potential solutions, important policy actors and networks and how they can be strengthened (E Africa, IITA; W Africa, ICRISAT) • Improved capacity in the National Economic and Development Authority (NEDA) of the Philippines to analyse strengths and weaknesses of policies and explore the resilience and the provisioning capacity of the agricultural sector given future climate scenarios (IFPRI)	Ghana are directly involving women. Different perspectives concerning ITPGRFA/MLS were identified and the degree of involvement of women in national policy processes assessed. Effective policy implementation guidelines were developed based on a gender analysis of crop diversification programs in SEA. GSI policy briefs were produced, and gender/youth elements included in the Guide to UNFCCC Negotiations on Agriculture Toolkit. Gender analysis of INDCs was carried out for COP21. Youth from CSVs in EA participated in the Youth Conference on CBA9 and presented the outcome statement at COP 21.
4.2 Priority setting contextualized with national stakeholders and capacity	The 2019 Outcome for **4.2** is: 15 equitable national/subnational food system policies enacted that take into consideration climate smart practices and strategies, informed using knowledge, tools and approaches derived from	Key results: • Policies tested and developed using the CCAFS regional scenarios in several regional / national case studies revised and finalized (Honduras, Cambodia, University of Oxford, IRRI)	**Synthesis report for F4-CoA 4.2:** A rapid multi-indicator survey tool was developed and applied in four contrasting systems of EA, to assist in incorporating climate change into district development plans. Scenarios methodology was developed and used to strengthen the Honduras Adaptation Strategy for the Agricultural Sector. CCAFS-enabled dialogue around IFPRI-CIAT modelling results with the Colombian Government contributed several priorities to the INDC. Priorities for

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
strengthened to apply outputs in policy formulation; including trade-off analyses, foresight activities, and quantification of regional socio-economic scenarios	CCAFS science. 2015 activities will involve: • Vulnerability mapping, integrated modeling and adaptation policy planning, capacity strengthening and rice knowledge bank support (SE Asia) • Scenario building and food policy analysis in relation to climate change, agriculture and food security (SE Asia) • Development of decision support systems and validation through case studies of investment prioritisation of climate-smart agriculture at national and sub-national levels (W Africa, S Asia, Global) • Assessment of regionally and temporally differentiated impacts of climate change scenarios on natural resources and food production (S Asia) • Climate, weather and agricultural systems modeling at multiple scales, to enhance engagement with national partners (including met services) and for outscaling appropriate CSA practices (Global, W Africa, E Africa, Latin America, S Asia)	• Multi-scale analyses of different CSA practices completed to outscale appropriate practices (W Africa, ILRI, ICRSAT, CSIRO) • CCAFS inputs made to the formulation of the NAP in Colombia (CIAT, Ministry of Agriculture) • Innovative climate data and products developed to improve downscaling, set priorities and evaluate national and local impacts of climate change (Global, Latin America: CIAT, ILRI, CIP) • A wide range of stakeholders in Uganda and Tanzania working and planning together to enact food security policies that promote adaptation of climate smart agricultural practices (E Africa, IITA) • Toolkits and databases modified, based on interaction with and feedback from users, to enable and train stakeholders to assess climate change impacts and evaluate options to prioritise future research, and new models and tools applied to evaluate different adaptation options in croplands and rangelands (Global, E Africa, Latin America, S Asia; CIAT, ICRAF, ILRI, IWMI) • Set of Monographs for Adaptation to Climate Change in Latin America that apply several different modeling techniques to better understand what impacts climate change will likely	investment in CSVs were identified using a range of tools in India, Bangladesh, Nepal and Bhutan. Several CGIAR centres and other partners carried out capacity building activities on priority setting for CSA at sub-national and local levels in SA. Multi-objective trade-off and socio-economic scenario analyses were developed and used to formulate adaptation plans in India (Bihar) and Bangladesh. IRRI conducted an information needs assessment of national-level stakeholders' decision-making in addressing CC challenges, to identify appropriate tools for decision-making. IFPRI's modelling tools generated research outputs that were used to establish decision-support mechanisms related to CC and food security policies in the Philippines. Scenarios research in Burkina Faso was used to help formulate the PNSR. In Ethiopia, three national workshops were held to inform policy implementation around CSA, using quantified regional scenarios; this research will be used to identify national investment priorities. Engagement with national meteorological services in Tanzania, Malawi and Ghana around novel data analysis tools is improving their planning processes. Priority setting reviews of adaptation options in mixed crop-livestock systems were carried out; that these are still substantially under-researched was echoed in the INDCs of some countries. **Gender synthesis report for F4-CoA 4.2:** In EA, new methods were developed around zonal and systems approaches, to integrate gender equity considerations within rapid multi-indicator surveys. Applications are envisaged at multiple sites to produce a global analysis of the interplay between agriculture, gender and nutrition. Projects in SA collected gender disaggregated information for priority setting. IFPRI used the Women's Empowerment in Agriculture Index to understand gender roles in decision-making and highlight gender dimensions in government policies and programs. Case studies on gender have been carried out in Vietnam, Myanmar (by PIRCCA) and the Philippines (by IFPRI), with the aim of identifying areas where interventions are most needed. In WA, women were well represented in the nine districts in which scenarios work was carried out. In Tanzania, Malawi and Ghana, women were included specifically in PICSA farmer training. Syntheses of baselines work in WA and EA are highlighting several key GSI elements in these CCAFS sites.

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	• Regional scenarios and policy analysis being used as a mechanism to build foresight capacity and carry out trade off analyses of locally-appropriate CSA practices across scales (W Africa, E Africa, SE Asia and Latin America) • Prioritised plan of action to strengthen resilience in Pacific Island communities (Pacific region) Modelling climate change impacts in agriculture for 8 countries in Latin America (Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Colombia and Peru) to inform policy makers and donors	have, and potential adaptation options that could help farmers compensate for negative impacts to assist policymakers in their ability to make policy using evidence-based inputs 2015 activities will result in: • CCAFS science used in three National Adaptation Plans and State Action Plans at sub-national level (India; IWMI, IFPRI) • Downscaling tools, climate data and other CCAFS science used in national programs to help evaluate impacts of climate change and adaptation options (Peru, CIP; E Africa, Ghana, ILRI, University of Reading) • CCAFS information on climate change impacts and adaptation being used by policy makers in Viet Nam and Myanmar (IRRI) • Strategic foresight analysis of plausible global futures for agriculture and food security institutionalised and embedded in the decision making mechanisms of the partner institutions (Latin America, SE Asia, IFPRI, CIAT)	
4.3 Effective supra-national governance systems and	The 2019 Outcome for **4.3** is: 10 regional/global organisations inform their equitable institutional investments in climate smart food systems using	Key results: • Articulation of a coherent research agenda on global governance and institutions across scales in climate resilient food systems and its initial	**Synthesis report for F4-CoA 4.3:** The post-2015 UNFCCC agreement, announced in Paris in December 2015, established a sound international governance framework for climate action. It has an explicit focus on food security, ensuring that agriculture is a sector for action. CCAFS made several written contributions to SBSTA processes.

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
equitable engagement mechanisms between international and regional/national stakeholders to influence global policy, and strengthened capacities to integrate local priorities into global fora	CCAFS outputs. 2015 activities will involve: • Empirical analyses of policy formation and implementation as a social process that involves complex interactions between a wide variety of stakeholders at various scales (East Africa, West Africa) • With partners such as CGRFA, assist in development of national guidelines to integrate use of agricultural genetic diversity to adapt to climate change in NAPs (Global, S Asia) • Evidence base of social learning approaches developed, and framework and tools applied by various CCAFS partners to contribute to it (Global) • Social learning approaches for stakeholder engagement: case studies documented (E Africa, W Africa, S Asia, SE Asia, Latin America) • Regional engagement strategies and platforms documented and capacity strengthened, to build capacity of regional negotiators to contribute to international processes (W Africa, Global)	implementation (Global: ILRI, IFPRI, Bioversity, CIFOR, ICRAF, IDS, FAO) • An evidence base of the value of social learning approaches to enhance the development outcomes of agricultural research exists. This evidence base is being used to try to influence global organisations to make institutional investment changes in support of learning based approaches 2015 activities will result in: • Tranche of policy measures adopted to implement the ITPGRFA/MLS in harmony with the CBD/NP (Bhutan, Nepal, and other countries in S Asia during 2015; Bioversity) • National and local policy makers sharing an understanding of the cross-level governance processes that shape the impact of national policy on the climate resilience of food systems (E Africa, W Africa; ILRI) • Due in part to the uptake of CCAFS products, attendance at CCAFS events, and use of CCAFS resources, agriculture is considered a sector in which effective action on adaptation and mitigation can be taken. As a result, agriculture is not excluded from a post-2015 global climate agreement under the UNFCCC (Coordinating Unit)	Documented RBM is starting to inform institutional change processes in several organizations. CCAFS science contributed to three submissions (on early warning systems, risks and vulnerability in agricultural systems, and gender and climate change) made by the African Group of Negotiators to UNFCCC discussions. IFAD is adopting CIAT/CCAFS science in project design and implementation in several countries (Nicaragua, Comoros, Liberia, Uganda). IFAD/ASAP projects worth >USD 100 million are using CCAFS/CIAT climate science. A regional workshop on CSA (UNEP, PIRCCA) included participants from 13 Asian countries and regional (ASEAN CRN) stakeholders; concept notes are being drafted for funding from the AP-CTNFC. CCAFS helped to set up and support a WA CSA alliance and intervention framework, assisting AUC and NEPAD in developing a technical guide and roadmap for informing NAIPs to achieve the CAADP goals. PICSA interacted with WFP, ADRA, Oxfam and CARE, using their science and tools to bring the climate services needs of smallholder farmers more to the fore. FAO Council adopted CGRFA guidelines in 2015, designed to assist 189 country members in climate change adaptation planning. Reviews were undertaken of which governance arrangements may positively influence food system dynamics and increase food security, the discourses surrounding CSA, and the major governance issues associated with transformations. **Gender synthesis report for F4-CoA 4.3:** CCAFS research helped support AGN and civil society groups to prepare submissions on gender and climate change to SBSTA. The CGRFA guidelines provide examples of how national programs can encourage socially marginalized groups to take advantage of the ITPGRFA for CC adaptation. Decision makers in LAM contributed to knowledge products on gender integration in climate change policies in the agricultural sector, increasing gender sensitivity in policymaking processes. In SEA, PIRCCA research is helping to prioritize future gender intervention points. The CCSL is continuing to gather evidence about the efficacy of social learning approaches, revolving around gender-inclusive engagement and learning in research programs to improve development outcomes. Gender received attention in about 40% of the INDCs

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	• Initial implementation of macro-scale governance and institutions research, with focuses on cross-scale linkages, effective governance mechanisms and indicators for climate resilient food systems, non-traditional actors in food systems governance, discourses and power, and the governance of transformation (Global) • Engagement in SBSTA proceedings and deliberations in different venues of the UNFCCC (Global)		submitted ahead of COP21. A policy brief on supporting women farmers in a changing climate was developed and disseminated in the lead up to COP21 and informed the updated guide to the negotiations on agriculture.
4.4 Improved regional/global investment choices through appropriately contextualized priority setting, drawing on global foresight and socio-economic regional scenarios	• The 2019 Outcome for 4.4 is: 10 regional/global organisations inform their equitable institutional investments in climate smart food systems using CCAFS outputs. 2015 activities will involve: • CCAFS regional scenarios development and engagement with international organisations including FAO and UNDP (Global) • Global foresight model development, application and capacity strengthening (Global)	2015 activities will result in: • A contribution in the UNFCCC negotiation that reflects the inputs of the African Group of Negotiators (AGN) on agriculture supported by CCAFS science (E Africa) • National (India) and international donors (World Bank, IFAD, ADB, IFC) targeted to finance massive upscaling of climate smart interventions in South Asia (IWMI, IFPRI) • Science informs CSA investments and practice by IFAD, World Bank and their country-level partners, particularly in 14 countries where IFAD is implementing its Adaptation for Smallholder Agriculture Program	**Synthesis report for F4-CoA 4.4:** CCAFS continued to engage with the major global players investing in agriculture, including the public sector (World Bank, IFAD, FAO) and the private sector (World Business Council for Sustainable Development). The investment choices of these agencies are likely to become clear in 2016. CCAFS science has contributed to UNEP's GEO6 report. Several scientific contributions were made to "CSA 101", a World Bank e-course for projects and planners. Regarding CCAFS scenarios (led by Oxford University), research was implemented by UNU for ECOWAS on strategies for agriculture and food security planning under climate change. CCAFS collaborated with policy makers on contextualizing the SA regional scenarios in different countries. WWF used CCAFS's SEA scenarios for an ADB investment document. The Cambodian government was supported by CCAFS to use scenarios methodologies for a project in the ASEAN CSR network. With Oxfam Asia, a scenarios process on climate adaptation was developed for the Philippines. Future scenarios for the Pacific region were developed by CCAFS and many partners, and these are being built on to guide investments in the region through SPC. IFPRI and partner CGIAR Centres have been improving the IMPACT partial equilibrium model, and the results of model

Level n-2 Cluster of Activities	Description of planned key activities	Expected results of planned key activities	Actual results
	• Using CCAFS science to inform priorities and investment decisions of international partners, and investments by partners in the Global Alliance on Climate Smart Agriculture (Global)	(Global) • At least 4 regional/global organizations will have used CCAFS scenarios methodology and outputs to start informing their strategic planning and priority setting processes (Global) • FAO (Economic and Social Development Department), OECD (Trade and Agriculture Directorate), and partners under the CAADP process, better able to analyse the impacts of climate change on agriculture and food security via quantified policy scenarios (Global, IFPRI)	runs have enhanced understanding of the impacts of climate change on food security and informed policy and investment discussions within OECD and FAO. An ICRAF tool has been developed for priority setting and large-scale decision-making across SSA. The linking of global foresight work with more localised evaluations of different interventions remains work in progress. **Gender synthesis report for F4-CoA:** During the many Oxford University / CCAFS scenario workshops held during 2015, gender balances were monitored, along with the representation of vulnerable groups, in designing and running workshop processes to ensure appropriate participation. IFPRI with a range of partners is carrying out research to link results from the IMPACT partial equilibrium model of the agricultural sector to CGE models. This will provide insights into labour markets, disaggregated by gender, adding an important gender dimension to model (and scenario) outputs. Ongoing research on developing a decision support tool for the World Bank and other investors has an explicit focus on gender and social inclusion. A policy brief on supporting women farmers in a changing climate was developed and widely disseminated in the lead up to COP21 and informed the updated guide to the negotiations on agriculture.