

## Log frame– Year 2014 – 2015

### Theme 1. Adaptation to Progressive Climate Change

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>Objective 1.1 Analyze and design processes to support adaptation of farming systems in the face of future uncertainties of climate in space and time</b>				
<b>Outcome 1.1: Agricultural and food security strategies that are adapted towards predicted conditions of climate change promoted and communicated by the key development and funding agencies (national and international), civil society organizations and private sector in at least 20 countries</b>				
<b>Output 1.1.1</b> Development of farming systems and production technologies adapted to climate change conditions in time and space through design of tools for improving crops, livestock, agronomic and natural resource management practices				
Milestone 1.1.1 2014. Analogue based evaluation and conservation of germplasm of at least 2 crops supported in a minimum of 6 analogue sites.	Field evaluation of germplasm for specific traits; collection efforts for land races in analogue sites.	Final report and peer reviewed article	Willing uptake of tools and guidelines; sufficiently accurate predictions of future water storage deficits and needs	Bioversity, NBPGR, India
Milestone 1.1.1 2015 (1). One to five flagship technologies that are gender-and socially-responsive identified, developed and demonstrated in each of the 3 initial target regions which would directly enhance the adaptive capacity of the farming systems to the climate change conditions. Launch through high level engagement with key stakeholders at a key international meeting.	Technologies developed and made publicly available. Positive feedback and increased demand of new technologies by the clientele. Field validation and assessment including criteria for assessing their social and gender implications during field visits by different stakeholders made as a part of 2015 visits.	website; documentation for annual reporting	Willingness and interest of local partners in nominating candidate technologies and managing the trials at pilot sites	CGIAR centers in collaboration with other themes in the MP, NARES, ARIs, CIRAD, NGOs, national governments, Farmers' organizations
Milestone 1.1.1 2015 (2). Analogue Research results synthesized, documented, published and communicated at all levels	Methods developed and made publically available online and through downloadable scripts. Full documentation available. Regional reports on analogues results published in CCAFS reports. Dissemination of results in targeted workshop at national level.	CCAFS website, documentation for annual reporting.	Analogue method successfully developed and deemed a useful approach by stakeholders.	University of Oxford, University of Greenwich, ICRISAT, CIAT, ICRAF, NARES, Intl NGOs.
<b>Output 1.1.2</b> Building of regional and national capacities to produce and communicate socially inclusive adaptation and mitigation strategies for progressive climate change at the national level (e.g. through NAPAs)				

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Milestone 1.1.2 2014 (1). Researchers and development agents trained on socially and gender-sensitive strategies for the conservation and use of local biodiversity within the climate change context.	Trainings held engaging at least 20 male and female R&D agents representing at least 5 organizations from 3 countries (Nepal, Bolivia and India)	Training participant lists; documentation for annual reporting	Availability of sound climate projections to 2030 and beyond	MS Swaminathan Research Foundation, India; Local Initiative for Biodiversity, Research and Development (LI-BIRD), Nepal; PROINPA, Bolivia; Semongok Agriculture Research Centre (ARC), Sarawak Malaysia
Milestone 1.1.2 2014 (2). Gender-sensitive and socially differentiated strategies developed for conservation and use of local biodiversity within the climate change context; findings presented in journal article and policy brief.	Policy brief completed and disseminated; journal article published	CCAFS website; Journal publisher's website		MS Swaminathan Research Foundation, India; Local Initiative for Biodiversity, Research and Development (LI-BIRD), Nepal; Semongok Agriculture Research Centre (ARC), Sarawak Malaysia; PROINPA, Bolivia
<b>Output 1.1.3</b> New knowledge, guidelines and access to germplasm are provided for using genetic and species diversity to enhance adaptation, productivity and resilience to changing climate with benefits for socially marginal groups.				
Milestone 1.1.3 2014 (1). Accessions identified with potential adaptive traits for climate change adaptation for at least 5 crops using innovative methods and prioritized on the basis of traits with potential benefits for the poor and women users. Methodology to select genebank material adapted to local current climate conditions and future climate shifts developed and tested and crop suitability atlases for priority crops (as defined by fraction of total production accounted for) produced; findings presented in reports and journal articles	Reports completed and disseminated. Journal articles published. Lists produced (e.g., adapted local varieties conserved in genebanks; newly and already collected domesticated and wild germplasm adapted to climate change noting their potential for pro-poor and gender-responsive benefits). Methodology developed and made publicly available	CCAFS website; journal publishers' websites	Adaptation traits easily identifiable and availability of sufficient data. Good Georeferenced data for accessions are available. Exchange of germplasm supported by participating countries. Local seed providers ready to participate and collaborate with the project. Policy framework in place for sharing of information. Sufficient cross-site similarity for transfer of lessons, germplasm and tools.	CIAT; Institute of Biodiversity and Conservation, Ethiopia; National Agricultural Research Institute, Papua new Guinea (PNG); Institut d'Economie Rurale, Mali; Indian Council of Agricultural Research, India; Millennium Seed Bank, UK; Botanic Garden Conservation International (BGCI), UK; members of the Musa Taxonomy Advisory Group; University of Philippines Los Banos (UPLB), Philippines; KULeuven, Belgium; CIALCA partners; Semongok Agriculture Research Centre (ARC), Sarawak Malaysia; PROINPA, Bolivia

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Milestone 1.1.3 2015 (1). Assessment of the contribution of crop, livestock, fish diversity to climate change adaptation carried out; findings summarized in reports, case study narratives, including assessment of their importance to marginalized farmers and women.	Reports and case study narratives completed and disseminated	CCAFS website		Institute of Biodiversity and Conservation, Ethiopia; International Livestock Research Institute (ILRI ) Ethiopia (TBC)
Milestone 1.1.3 2014 (2). Methods and tools for participatory, gender-responsive monitoring of deployment of biodiversity and knowledge by communities for climate change adaptation tested out in at least 5 countries (including gender-disaggregated community surveys); findings synthesized in report	Surveys conducted. Report completed and disseminated. Methods and tools developed and made publicly available	CCAFS website		Institute of Biodiversity and Conservation, Ethiopia; National Agricultural Research Institute, PNG; Institut d'Economie Rurale, Mali; Indian Council of Agricultural Research, India; LI-BIRD, Nepal; MS Swaminathan Research Foundation, India; PROINPA, Bolivia
Milestone 1.1.3 2015 (2). Germplasm information on potential for climate change adaptation integrated in global information systems and accessible online. (1) Databases of priority collections augmented with georeferenced passport data and trait information useful to the diversity analysis for climate change impacts and adaptation effectively linked to global systems, (2) important trait information accessible in global systems, including GENEYSYS, and Crop Trait ontology augmented with traits of interest to Climate Change , (3) complementary data sources on wild species identified through GBIF, (4) training materials, (5) list of and information on newly and already collected germplasm (domesticated and wild) adapted to climate change; Materials of interest safely duplicated in Global Collection and made available.	(1) Databases, accession information, data, training materials, lists developed and made publicly available. (2) Accession level information with quality geo references; (3) Data on duplication to global collection and important trait information published in GENESYS;(4) Complementary data sources on wild species identified through GBIF; (5) training materials. List of and information on newly and already collected germplasm (domesticated and wild) adapted to climate change noting any potential for use in pro-poor and gender-responsive adaptation strategies	CCAFS/other websites; technical reports, Genebank catalogues; databases		Global Crop Diversity Trust; priority national/ regional Collections; CGIAR genebanks; EURISCO partners; PGR networks; the International Treaty on Plant Genetic resources for Food and Agriculture (ITPGRFA),Italy; United States Department of Agriculture (USDA), USA; Global Diversity Information Facility (GBIF), Denmark; BioGeomancer Research consortium; Sud Experts Plantes members (IRD/AIRD), France; Botanic Garden Conservation International (BGCI), UK; Generation Challenge Programme, Mexico; International Musa Testing Programme partners
Milestone 1.1.3 2015 (3). Case studies documented of potential role of informal seed systems for pro-poor and gender-responsive diffusion of adapted germplasm	Case studies;			

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<b>Objective 1.2 Develop breeding strategies for addressing abiotic and biotic stresses induced by future climatic conditions, variability and extremes, including novel climates</b>				
<b>Outcome 1.2: Strategies for addressing abiotic and biotic stresses induced by future climate change, variability and extremes, including novel climates mainstreamed among the majority of the international research agencies who engage with CCAFS, and by national agencies in at least 12 countries</b>				
<b>Output 1.2.1</b> Understanding and evaluating the response of different varieties/crops to climate change in time and space, and generating comprehensive strategies for crop improvement through a combination of modeling, expert consultation and stakeholder dialogue				
Milestone 1.2.1 2014. Set of “virtual crops” designed and assessed for their efficacy in addressing the likely future conditions in terms of the economic, social, and cultural benefits expected; findings presented in summary report and journal article. Engagement of ARI modelling groups (e.g. Leeds University), NARES scientists.	Report completed and disseminated; journal article published	CCAFS website; Journal publishers' websites	Robust climate projections (i.e. uncertainty does not dominate) and sufficient data on abiotic and biotic interactions with climate	CG Centers, ARI modelling groups (e.g. Leeds University), NARES scientists
Milestone 1.2.1 2015 (1). Detailed crop-by-crop strategies and plans of action for crop improvement developed, incorporating portfolio of national, regional and global priorities including those priorities relevant for pro-poor and gender –responsive targeting; findings presented in summary report.	Report completed and disseminated Including advice on targeting crop improvement strategies to benefit women and the poor	CCAFS website	Robust climate projections (i.e. uncertainty does not dominate) and sufficient data on abiotic and biotic interactions with climate	CG Centers, ARI modelling groups (e.g. Leeds University), NARES scientists
Milestone 1.2.1 2015 (2). Set of breeding strategies identified and widely shared with partners including funding bodies, national and international organizations, universities and other actors; findings presented in summary report and policy briefs (including percentage of total food crop production (in recent history) accounted for by set of breeding strategies).	Report and policy briefs completed and disseminated and downloaded 200 times from web portal	CCAFS website	Willingness of crop breeding institutions to adjust priorities based on priority setting results, and donor coordination in funding of future breeding programs.	Crop-breeding institutes (CG Centers, ARIs, ANRES), regional decision-making and priority-setting bodies (ASARECA, FARA, WECARD, SAARC), donors, national governments



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Milestone 1.2.1 2015 (3). Climate change impact on key global commodities (major Musa groups,) and selected pest and diseases modeled and reviewed by commodity network country partners and possible response strategies identified.	Base model available and adapted to specific commodities; findings verified by stakeholders	web site, scientific articles, electronic tools with dynamic user interface		MUSALAC, BARNESA, BAPNET (including participating countries by region: LAC -Costa Rica, Brazil, Colombia, Panama; ESA - Uganda, Rwanda, Kenya; WCA Ghana, Nigeria, Cote d'Ivoire, Cameroon; APO - India, China, Taiwan, Australia, Indonesia); CIRAD; IITA; CIAT; University of Western Australia; Queensland Department of Primary Industries, Australia; CacaoNet, COGENT (including participating countries by region: LAC - Costa Rica, Brazil, Trinidad, Mexico; SSA - Cote d'Ivoire, Ghana, Nigeria, Cameroon, Tanzania; APO - India, Sri Lanka, Indonesia, Philippines, Malaysia), CATIE; South Pacific Commission (SPC), Fiji, United States Department of Agriculture (USDA), USA; University of Queensland, Australia; Reading University, UK; World Cocoa Foundation; APCC
<b>Output 1.2.2</b> Breeding strategies disseminated to key national agencies and research partners				
Milestone 1.2.2 2015 (1). High-level meetings held with key stakeholders resulting in mainstreaming of new breeding strategies that include attention to men's and women's crops in work plans and existing breeding programs	Meetings held engaging minimum 30 individuals representing breeding institutions, key regional decision-making and priority setting bodies; breeding strategies adopted by existing breeding programs	CCAFS website; documentation for annual reporting; Publications and reports of existing breeding programs	Willingness of crop breeding institutions to participate in the program; inclusion of women's and men's crops in the program	Crop-breeding institutes (CG Centers, ARIs, NARES), GCP, regional decision-making and priority setting bodies (ASARECA, FARA, WECARD, SAARC), donors, national governments

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Milestone 1.2.2 2015 (2). Global, regional and national policy briefs produced to guide best-value investments in climate-proofed crop breeding initiatives with promise for pro-poor and gender-responsive impact and policy briefing meeting organized in 3 target regions	Policy briefs completed and disseminated across global, regional and national levels	CCAFS website	Willingness of crop breeding institutions to adjust priorities based on priority setting results; ex-ante socially and gender-disaggregated impact studies available	Crop-breeding institutes (CG Centers, ARIs, NARES), regional decision-making and priority-setting bodies (ASARECA, FARA, WECARD, SAARC), donors, national governments
<b>Objective 1.3 Integrate adaptation strategies for agricultural and food systems into policy and institutional frameworks</b>				
<b>Outcome 1.3: Improved adaptation policies from local to international level supporting farming communities, rural institutions and food system actors adapted to future climate conditions in at least 20 countries.</b>				
<b>Output 1.3.1 Improved institutional arrangements and socially differentiated adaptation planning approaches at the local level to enable farming system adaptation</b>				
Milestone 1.3.1 2014 (1). Socially and gender-disaggregated participatory methods tested for grounding climate change model results to community-level decision making processes that address food security issues	Methods tested and disseminated	CCAFS website	Cross-site and cross-continent applicability.	CIAT, Oxfam, CRS, Learning Alliance, Sustainable Food Lab, SAI, university of Oxford
Milestone 1.3.1 2015. Roles of gender and different social groups in adaptation strategies for climate change analyzed in target countries and highlighted through fact sheets, project briefs and technical articles. Approaches, methods and outcomes of supportive interventions promoted through collaborative projects and shared with the broader stakeholder community through relevant meetings, conferences and journal articles	Summary report completed and disseminated; journal articles published	CCAFS website; Journal publisher's website		MS Swaminathan Research Foundation, India; Local Initiative for Biodiversity, Research and Development (LI-BIRD), Nepal; PROINPA, Bolivia; Institute of Biodiversity and Conservation, Ethiopia; National Agricultural Research Institute, PNG; Institut d'Economie Rurale, Mali; Indian Council of Agricultural Research, India
Milestone 1.3.1 2014 (2). Community-based holistic adaptation options trialed in at least three sites, in order to understand the social (including gender), cultural, economic and institutional barriers to effective adaptation; outcomes presented in summary report.	3 trials implemented; summary report completed and disseminated	CCAFS website; documentation for annual reporting	Ability to generalize from local-level participatory analyses	CGIAR centers, local NGOs, local government
<b>Output 1.3.2 Public and private sector policies and strategies at the national level to enable farming communities and the food system to adapt to predicted future conditions</b>				



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Milestone 1.3.2 2014. Sector specific adaptation strategies and plans produced based on socially and gender-differentiated adaptation options using cost/benefit analysis in at least 5 countries, results shared with key policy makers in target countries.	Infobriefs on adaptation strategies for 5 countries published, CSA prioritization tools using cost/benefit analysis published and available to stakeholders.	CCAFS website	Socially and gender-differentiated data available for cost/benefit analysis	WorldBank, ICRAF, CIAT, FAO, Ministry of Agriculture and Rural Development (Colombia), Ministry of Agriculture (Nicaragua)
Milestone 1.3.2 2015 (1). Synthesized lessons learned published in policy briefs and synthesis reports and papers on methods and approaches for prioritizing pro-poor and gender-responsive adaptation options within national adaptation plans.				
Milestone 1.3.2 2015 (2). Policy recommendations provided to national agencies, policy makers and key actors in the agricultural sector on how to target strategies to enable equitable access to breeding materials and strategies by different social groups (e.g. pastoralists, fishers, urban farmers) and by women and men.	Report completed and disseminated at 3 major international meetings; Report and policy briefs downloaded 200 times from web portal	CCAFS website; indigenous knowledge survey		
<b>Output 1.3.3</b> Policies to enable access to and use of genetic resources for climate change adaptation research, and diffusion of adapted germplasm				
Milestone 1.3.3 2014. Technical contributions to international processes support the development of international policies enabling access to and use of genetic resources in climate change research and adaptation strategies;	Background Papers, policy briefs, Journal article and book published  Policy paper developed on strategies for creating an enabling policy environment in support of self-sustainable monitoring of diversity and use of agricultural biodiversity (including impact on role of participatory, gender-responsive monitoring of livelihood and conservation strategies in target countries) : Policy paper completed and disseminated	CCAFS website; Journal and book publishers' websites		CGIAR Centers; representatives of regional groups attending intergovernmental fora, secretariats of relevant international agreements. MS Swaminathan Research Foundation, India; Local Initiative for Biodiversity, Research and Development (LI-BIRD), Nepal; PROINPA, Bolivia; Institute of Biodiversity and Conservation, Ethiopia; National Agricultural Research Institute, PNG; Institut d'Economie Rurale, Mali; Indian Council of Agricultural Research, India



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Milestone 1.3.3 2015. Analysis of institutions and policies that impact on the flow of adapted materials through seed systems; National strategies developed to implement the International Treaty's Multilateral system on Access and Benefit-Sharing in 4 countries; Policy options produced at national, provincial and community levels and evaluated for their potential positive or adverse effects on socially marginal groups, especially women to improve existing policies, local management and seed systems to facilitate diffusion and uptake of adapted germplasm.	Case studies, analysis, national strategies and policy options developed and disseminated	CCAFS website		EMBRAPA, Brazil; Kenyan Agricultural Research Institute (KARI), Kenya; University of Malaya, Malaysia; Instituto Nacional de Investigaciones Agricola (INIA), Peru; MS Swaminathan Research Foundation, India; Local Initiative for Biodiversity, Research and Development (LI-BIRD), Nepal; PROINPA, Bolivia; Institute of Biodiversity and Conservation, Ethiopia; National Agricultural Research Institute, PNG; Institut d'Economie Rurale, Mali; Indian Council of Agricultural Research, India



## Theme 2. Adaptation through Managing Climate Risk

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>Objective 2.1 Identify and test innovations that enable rural communities to better manage climate-related risk and build more resilient livelihoods</b>				
<b>Outcome 2.1: Systematic technical and policy support strengthened for farm- to community-level agricultural risk management strategies and actions that buffer against climate shocks and enhance livelihood resilience in at least 20 countries</b>				
<b>Output 2.1.1</b> Synthesized knowledge and evidence on innovative risk management strategies that foster resilient rural livelihoods and sustain a food secure environment				
			Access to relevant work across CG Centers and targeted NARES. Partners willing to share findings. Value addition to other research groups and practitioners recognized.	
Milestone 2.1.1 2014. Synthesized knowledge incorporated into climate risk management good practice guidelines that addresses social and gender equity, and communicated to development and policy stakeholders in 4 locations; Analyses of climate-related vulnerabilities of 3 key agricultural commodities and/or systems incorporated into strategic planning and policy dialog.	Good practice guidelines published and relevant stakeholders engaged (CIMMYT, ICARDA, ICRAF, WorldFish), and engagement verified by relevant stakeholders; Policy briefs, or reports of policy and planning dialogs, informed by analyses of climate-related vulnerabilities (AfricaRice, IRRI, IWMI).	CCAFS Website and degree of co-branding of CCAFS initiatives broadly across CRPs and external partners.	2015 milestone assumes good lessons come from sufficient cases in 2013.	CIMMYT, ICARDA, ICRAF, WorldFish, AfricaRice, IRRI, IWMI, regional (e.g. ECOWAS, IGAD in WA, AIC, ICAR in SA) and national policy decision makers (CNEDD-Mali, CONEDD-BF, CSE-Senegal, ANE-Mali in WA)
Milestone 2.1.1 2015. Lessons from CCAFS research on risk management innovations, and impacts across socially-differentiated groups and gender, synthesized, communicated widely, and incorporated into strategic planning and policy dialog.	Lessons embodied in tools and policy briefs, outlined in report and disseminated; Reports of engagement in policy and planning dialogs	CCAFS Website		CIMMYT, ICARDA, ICRAF, WorldFish, AfricaRice, IRRI, IWMI, regional (e.g. ECOWAS, IGAD in WA, AIC, ICAR in SA) and national policy decision makers (CNEDD-Mali, CONEDD-BF, CSE-Senegal, ANE-Mali in WA)
<b>Output 2.1.2</b> Analytical framework and tools to target and evaluate risk management innovations for resilient rural livelihoods and improved food security				

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
			2015 milestone of a useful targeting and evaluation tool or approach is dependent on tools standing up to scrutiny	
Milestone 2.1.2 2014. Methodology for designing and targeting comprehensive and equitable agricultural risk management strategies implemented, documented and applied at 4 locations; One model-based climate risk management decision support tool prototype developed.	Ex-ante evaluation of risk management strategies reported in 4 locations (ILRI, CIMMYT); Decision support tool prototype for diversification documented (Bioversity).	CCAFS Website		AfricaRice, CIMMYT, CIP, IFPRI, ILRI, WorldFish, CSIRO, NARES
Milestone 2.1.2 2015. Capacity to apply household, and intra-household modelling to target and evaluate risk management innovations, enhanced through curriculum and training. Use of model-based decision support tools for local climate risk management demonstrated in 4 countries.	Curriculum and two training events in each CCAFS region.	CCAFS Website and Training Event Reports		AfricaRice, CIMMYT, CIP, IFPRI, ILRI, WorldFish, CSIRO, NARES
<b>Output 2.1.3</b> Development; and demonstration of the feasibility, acceptability and impacts; of innovative risk management strategies and actions for socially-differentiated rural communities,				
Milestone 2.1.3 2014. Results, evidence and lessons, from participatory, gender-sensitive evaluation of impacts of promising risk management interventions (production technologies, production systems, institutional services, policy interventions) on rural communities documented at shared with relevant stakeholders at 6 locations; Potential up-scaling mechanisms and partners identified and engaged in 3 locations.	Reports completed for 6 locations (CIMMYT, CIP, ICRAF, ILRI, WorldFish); Engagement verified by partners.	CCAFS Website		CIMMYT, CIP, ICRAF, ILRI, WorldFish, local pilot project partners (NARES, development NGOs, farmer associations, other research partners)
Milestone 2.1.3 2015. Development and policy stakeholders engaged to apply lessons and evidence from participatory action research, and explore opportunities to scale up risk management interventions (production technologies, production systems, institutional services, policy interventions) with potential to equitably enhance resilience of rural livelihoods.	Findings and engagement verified by relevant stakeholders.	CCAFS Website and Web-based knowledge platform	Proposed conference will do more than focus on the milestone results in this Output. To attract a broader set of high level players other issues in risk management from other parts of the Theme will also be included.	ILRI, CIMMYT, ICARDA, ICRAF, ICRISAT, WorldFish, and Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations) developed for each benchmark location

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Objective 2.2 Identify and test tools and strategies to use advance information to better manage climate risk through food delivery, trade and crisis response				
Outcome 2.2: Better climate-informed management by key international, regional and national agencies of food crisis management, and food trade and delivery in at least 12 countries				
Output 2.2.1 Enhanced knowledge, tools and evidence to support improved management of the food system (e.g., food delivery, trade, crisis response, post-crisis recovery) in the face of climate fluctuations				
			Capable food security and trade organizations available to participate. Adequate market, climate and livelihood data are available. Appropriate capacity for assessing social and gender impacts deployed	
Milestone 2.2.1 2014. Enhanced food system interventions or information systems for responding to climate shocks tested in four countries; Integration of new climate-related information or decision support tools into national food security decision-making processes.	Reports evaluating new tools or interventions, and potential for up-scaling in cooperation with strategic partners, in 4 countries.	CCAFS Website		IRRI, CIMMYT, GEOSAS, WFP, FAO, UNDP, Strategic Asia, FEWSNET, relevant line ministries (e.g. MoA, MoE), other relevant regional and national food system and food security response organizations
Milestone 2.2.1 2015. Up-scaling and mainstreaming results of research and evaluation related to constraints and opportunities posed by climate variability on food systems at national, regional, and global scales, including food delivery, trade, crisis response, post-crisis recovery, and social protection and their implications for different population segments including women and the poor.	Improved food security information, response strategies or policies in 6 countries reported.	CCAFS Website		IRRI, CIMMYT, GEOSAS, WFP, FAO, UNDP, Strategic Asia, FEWSNET, relevant line ministries (e.g. MoA, MoE), other relevant regional and national food system and food security response organizations
Objective 2.3 Support risk management through enhanced prediction of climate impacts on agriculture, and enhanced climate information and services				
Outcome 2.3 Enhanced uptake and use of improved climate information products and services, and of information about agricultural production and biological threats, by resource-poor farmers, particularly vulnerable groups and women, in at least 12 countries				
Output 2.3.1 Improved, value-added climate information products, knowledge, tools, methods; and platforms for monitoring and predicting impacts of climate fluctuations on agricultural production and biological threats; to support management of agricultural and food security risk				
			Review will identify suitable opportunities to enhance early warning and management of strategic climate-sensitive biological threats. NMS and regional	

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Milestone 2.3.1 2014. Crop and rangeland production forecasting platform, documentation and training materials developed and disseminated; Accuracy of crop forecasting methods assessed and reported; Crop and rangeland forecasting capacity developed in 6 countries or regional institutions; Tools developed and institutional capacity enhanced to downscale seasonal forecasts for local agricultural decision-making in 2 countries or regional institutions.	Report and journal paper on crop forecasting accuracy; Crop forecasting development activities in 3 regions; Training of decision makers on the use of downscaled seasonal forecast information in 2 regions.	CCAFS Website	climate centers participate and share data.. Availability of data. Effective collaboration with food security early warning organizations. Uptake by key food security, trade and index insurance users.	CIMMYT, ICRISAT, AGRHYMET, ACMAD, CEREGE, ANAMS (Senegal), IRI, AgMIP, BARC, NARC, ICAR, FAO, JRC, MP3-RTB, ICIPE
Milestone 2.3.1 2015. Improved, downscaled seasonal forecast products, tailored to agricultural and food security decision-making, operational in 2 countries or regional institutions; Improved crop forecasting methodology operational in 2 countries or regional institutions.	Seasonal forecasting, crop/rangeland forecasting, and/or biological threat early warning systems operational in 2 regions; Evaluation of forecasting systems reported.	CCAFS Website and co-branded systems housed at national or regional bodies	Demonstrated feasibility of forecasting strategically important biological threats	CIMMYT, ICRISAT, AGRHYMET, ACMAD, CEREGE, ANAMS (Senegal), IRI, AgMIP, BARC, NARC, ICAR, FAO, JRC, MP3-RTB, ICIPE
<b>Output 2.3.2</b> Synthesized knowledge and evidence on institutional arrangements and communication processes for enhancing climate services for agriculture and food security, including services that reach marginalized farmers and women				
			Capable and willing national and regional climate information providers and communication intermediaries	
Milestone 2.3.2 2014. Curriculum developed on designing and communicating salient climate information with rural communities, including overcoming gender and social inequities; Capacity of communication intermediaries enhanced at 4 locations; Demonstration and evaluation of gender- and socially-equitable climate service delivery for rural communities at 4 locations; Roadmaps developed for strengthening climate services for agriculture and food security in 2 regions;	Demonstration and evaluation reported with 4 countries or regional organizations; Curriculum on equitable climate services published; Training held in 2 regions; Regional stakeholder consultations for climate service roadmaps reported;	CCAFS Website		CIMMYT, ICRISAT, IWMI, ACMAD, AGRHYMET, ICPAC, national partners (NMS, NARES), USAID, WMO, Climate Services Partnership, IRI



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Milestone 2.3.2 2015. Demonstration and evaluation of gender- and socially-equitable climate service delivery at 3 additional locations; Roadmaps developed for improving climate information services for agriculture and food security in 2 additional regions; Up-scaling of improved climate information services demonstrated in 2 countries or regions.	Evaluation of equitable climate services in 3 additional regions reported; Regional stakeholder consultations for climate service roadmaps reported; Up-scaling of climate services for agriculture and food security reported.	CCAFS Website		CIMMYT, ICRISAT, IWMI, ACMAD, AGRHYMET, national partners (NMS, NARES), WMO, World Vision, Climate Services Partnership, IRI

### Theme 3. Pro-Poor Climate Change Mitigation

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>Objective 3.1</b> Inform decision makers about the impacts of alternative agricultural development pathways				
<b>Outcome 3.1:</b> Enhanced knowledge and tools about agricultural development pathways that lead to better decisions for climate mitigation, poverty alleviation, food security, and environmental health, used by national agencies in at least 20 countries				
<b>Output 3.1.1</b> Analysis of agricultural development pathways and trade-offs				
Milestone 3.1.1 2014. Comparative analysis of mitigation trade-offs for agricultural development pathways across 3-6 countries (IFPRI, CIAT, ICRAF, T3). Linked to CRP6 and CRP5.	<i>Analysis of results for low emissions development, adaptation and sustainable intensification pathways.</i> Comparative analysis of adaptation-mitigation trade-offs, with additional case from India; research priorities shared in reports, workshops (IFPRI); reports on low emissions development strategies for Bangladesh, Colombia, and Zambia (IFPRI with CIAT); modelling framework for ag intensification (LAM, WA) (IFPRI). Technical mitigation potential and trade-offs analysis of fruit tree, improved agroforestry, and silvopastoral systems in Colombia (contributing to NAMA), El Salvador, and Nicaragua; carbon footprinting of oil palm and fruit production in Colombia for international standards; report on trade-offs analysis and eco-efficiency metrics for agricultural intensification in East Africa (CIAT). Analysis and policy briefs on low-carbon, pro-growth agriculture in China & Mongolia; analysis of trade-offs in agricultural landscapes of Tanzania (ICRAF). Analysis of the impacts of smallholder mitigation on climate	CCAFS website	Development trajectories are realistic, data is available, policy maker will and capacity to pursue alternate pathways	NARS in Colombia, Nicaragua, El Salvador, Burkina Faso, Guinea and India; Ministry of Agriculture, Kenya, Sustainable Agriculture Initiative Platform., IIASA.

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
	targets, mitigation priorities (T3-IIASA).			
Milestone 3.1.1 2015. Policy engagement on synthesis of findings on low emissions agricultural development pathways (CIAT, IFPRI).	<i>Sharing of results for low emissions development, adaptation and sustainable intensification pathways</i> Engage with policy makers and develop plans and guidelines for (1) adaptation in agroforestry landscapes (Global); (2) national and regional low emissions development in 3 countries of LA (CIAT); (3) eco-efficient pathways that optimize soil C, seminar and briefs (CIAT); (4) analysis of adaptation and mitigation trade-offs (IFPRI with CIAT); and (5) policy briefs, national stakeholder platforms on high value biocarbon development (ICRAF).	CCAFS website	Development trajectories are realistic, data is available, policy maker will and capacity to pursue alternate pathways; This work will link with adaptation work in other themes to ensure political capita is maintained with key stakeholders who mostly see adaptation as the priority, not mitigation	NARS in Colombia, Nicaragua, Burkina Faso and Guinea; Ministry of Agriculture, Kenya,
<b>Output 3.1.2</b> Enhanced tools, data, and analytic capacity in regional and national policy and research organizations to analyse mitigation sectors and agricultural development options				
Milestone 3.1.2 2014.. Capacity building of decision makers and national stakeholders in use of appropriate tools, data, and knowledge (ILRI, T3).	Decision support tool for geographic optimization of mitigation options (T3). Case studies and framework for scaling up women's innovations in low-emissions agriculture (T3).			U. Aberdeen, Prolinnova, Global Research Alliance, WOCAN, U Virginia
Milestone 3.1.2 2015. Emissions factors and mitigation potentials for key categories, with a focus on intensification.	Emissions factors produced from protocol tests in EA and WA (ILRI).		Variation in sector can be adequately captured.	

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>Objective 3.2 Identify institutional arrangements and incentives that enable smallholder farmers and common-pool resource users to reduce GHGs and improve livelihoods</b>				
<b>Outcome 3.2: Improved knowledge about incentives and institutional arrangements for mitigation practices by resource-poor smallholders (including farmers' organizations), project developers, and policy makers in at least 10 countries</b>				
<b>Output 3.2.1 Evidence, analysis, and trials to support institutional designs, policy, and finance that will deliver benefits to poor farmers and women, and reduce GHG emissions</b>				
Milestone 3.2.1 2014 (1). Analysis of economic incentives and benefits for mitigation practices, including analysis of social and gender differentiation. Linked to Milestone 3.3.1 (2013-2015). (CIMMYT, IFPRI, IITA, T3)	<i>For conservation agriculture in rice-wheat systems in SA; sustainable land management in maize-legume systems and pastoral systems in EA, and cocoa and coffee in WA and EA.</i> Report on economic incentives from adoption of integrated practices, gender differentiated (CA, SLM, EA, and SA-India) (CIMMYT and IFPRI). Report on carbon costs across scales and collaboration with cocoa sector on REDD+ in WA (IITA). Distribution of climate finance (T3).	CCAFS website; Journal publisher's website	See Milestone 3.2.1 2013 (1)	SIMLESA Project (Africa) CSISA project (SA-Asia), IITA, ICARDA, ICAR, EIAR, KARI, UMB-USA, UMB-Norway, IFPRI and University of Michigan, Makerere University, local research partners in benchmark site countries, ClimateFocus
Milestone 3.2.1 2014 (2). Testing of institutional arrangements for carbon finance and markets and mitigation standards (T3, ILRI, ICRAF, IITA, CIAT) Linked to CRP6.4.	Report on institutional interventions for landscape governance in Indonesia and Brazil ; report and policy briefs on carbon project design; NAMA MRV options for Kenya (T3). Analysis of mitigation opportunities in coffee/cocoa product chain and input into Product Category Rules (IITA with CIAT). Feasibility analysis for fruit tree and silvopastoral systems to participate in carbon markets (Colombia) (CIAT). Feasibility of carbon credit mechanism for dairy (Kenya) (ILRI). Analysis of institutions and finance for biocarbon projects (WA, SA) (ICRAF). Cost of achieving 30% emissions reductions (T3).		See Milestone 3.2.1 2013 (2)	Vi, CARE, World Vision, EcoTrust, EcoAgriculture Partners, U Michigan; M of Agriculture, Kenya; Unique Forestry



MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 3.2.1 2015. Synthesis of knowledge on economic incentives and policy instruments for stimulating adoption of low emissions agriculture in EA and SA (CIMMYT, IITA).	Policy workshops to present findings and publications: incentive systems and policies for adoption of CA to reduce carbon footprints in wheat-rice systems in SA and maize-legume in EA (CIMMYT). Policy recommendation for cocoa and coffee (IITA).	Workshop agenda and participant lists CCAFS website.	See Milestone 3.2.1 2013 (1)	Ministries of agriculture and environment; climate secretariats
<b>Output 3.2.2</b> Improved capacity to increase the uptake and improve the design of incentives, mechanisms, and institutional arrangements to deliver benefits to poor farmers and women				
Milestone 3.2.2 2014. Decision-makers in target regions better informed about policy options and gender implications for incentivizing smallholders for GHG emission intensity reductions (EA, LA, T3)	Analysis of the barriers for the implementation of NAMAs in Colombia and recommendations to the Ministry of Agriculture (LA). Incentivizing emissions intensity reductions (EA) South-south NAMA learning (T3).	Website, participation lists of learning events.	See Milestones 3.2.1 2013 (1) and 3.2.1 2013 (2)	Ministries of Agriculture (Kenya, Colombia)
<b>Objective 3.3 Test and identify desirable on-farm practices and their landscape-level implications</b>				
<b>Outcome 3.3: Key agencies dealing with climate mitigation in at least 10 countries promoting technically and economically feasible agricultural mitigation practices that have co-benefits for resource-poor farmers, particularly vulnerable groups and women</b>				
<b>Output 3.3.1</b> Analysis of mitigation biophysical and socioeconomic feasibility for different agricultural practices and regions, and impacts on emissions, livelihoods, and food security				
Milestone 3.3.1 2014. Impact and trade-off analysis of farm management strategies, for C sequestration and nutrient management in rice-wheat and maize-legume systems (IGP, EA, Mexico) (CIMMYT); (ii) water and nutrient management and avoided straw burning in rice-based production systems (IRRI), (iii) coffee and cocoa agroforestry (IITA), (iv) pasture and coffee systems (CIAT, with IFPRI); (v) land use change, land rehabilitation, and peatland management under oil palm (CIFOR), (vi) wood energy and agroforestry, analysis of biomass for efficient pyrolysis liquid fuel production (ICRAF), low-input fruit production (CIAT); coffee and cocoa systems at landscape level (CIAT); and pasture, rangelands (ILRI).	Analysis of field data and simulation output for C sequestration (EA, IGP, Mexico) and nutrient management in CA-based intensification, field trials continued, economic analysis (IGP, Mexico); publications on (1) C sequestration and (2) nutrient management for CA-based intensification in rice-wheat and maize-legume systems (CIMMYT). Country specific action plans for CDM for rice growing regions, pilot projects for women's engagement, innovative instrumentation, refining CDM methods for avoided straw burning, socioeconomic analysis of women's involvement in natural resources, pilot of innovative approaches to MRV in	Project reports; CCAFS website.	Mitigation options for smallholders must yield livelihood benefits. A range of mitigation options will be required to achieve mitigation at scale among smallholders.	NARIs in each region

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
	rice (IRRI). Participatory trials for C footprint on coffee, cocoa, quantification of changes in C stocks and emissions from land use changes in Uganda (IITA), report on trade-offs of cocoa and coffee production in Africa with link to Central America systems (IITA with CIAT). Assessment of emissions from maize-chickpea systems (Global), participatory trials of CSA practices in Kenya (ICRISAT with ILRI, ICRAF, CIFOR). Reports and journal articles on best practices for pyrolysis, biochar woodfuels for bioenergy (EA) (ICRAF). Sharing of options and journal article for N <sub>2</sub> O and C sequestration in pasture, and reduced methane from improved forage, assessed LA; tradeoff analysis for mitigation, adaptation, and livelihoods for multiple systems (Global) (CIAT). 5 papers and 3 theses submitted; experiment data collected for GHG in oil palm (Indonesia), trials to increase soil carbon stocks (EA, IGP) (CIFOR). Data, models and tools for emissions reductions in livestock sector and synergies with animal health and productivity (ILRI).			
Milestone 3.3.1 2015 (1). Impact analysis, integrated assessment and management recommendations for: CA at regional scale for range of agroecosystems (CIMMYT); major crops of Sub-Saharan Africa; rice-based systems (IRRI), land use change, land rehabilitation, and peat land management under oil palm (CIFOR); rangelands (ILRI); and wood energy and agroforestry (ICRAF).	Final report extrapolating impacts of CA on emissions and livelihoods to larger scales (IGP, EA, Mexico) (CIMMYT). Implementation of action plans for CDM in rice growing regions, pilot projects, women's involvement in MRV, CDM for straw burning, nutrient cycles and ecosystem functions modeled (IRRI). Technological interventions for	Data and publications available.	Mitigation options for smallholders must yield livelihood benefits. A range of mitigation options will be required to achieve mitigation at scale among smallholders.	NARIs in each region

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
	mitigation, productivity, adaptation (IITA). 8 papers, 2 theses, data analysis (CIFOR). Best management practices identified for food security, income and sustainable intensification (ICRISAT). Articles on best practices (ICRAF). Final report on opportunities for C credits from rangelands (ILRI).			
Milestone 3.3.1 2015 (2). Learning among national agencies to review farm-level mitigation options and their socially differentiated impacts. Linked to 3.1.2 2014 (1) and (2).	Synthesis reports. 50 national agency personnel reached per CCAFS region (T3). Evaluation report on current practices and incentives for low carbon agriculture across scales - presented to stakeholders to adapt technologies and policies (IITA). N <sub>2</sub> O and C sequestration potential of forage systems, including trees and shrubs, quantified; potentials for reduced methane emissions through improved forages defined; a journal article published on application of forage based mitigation options in systems. Impact (including gender analysis) of mitigation option through improved forages; Tool for social, environmental and economic trade-off analysis for forage-based mitigation; framework for adaptation, mitigation and livelihood trade-offs (CIAT).	Learning event participant lists. Published action plans. CCAFS website.	Same as 3.3.1 2013	TBC
<b>Output 3.3.2</b> Methods developed and validated for GHG monitoring and accounting at farm and landscape level to contribute to compliance and voluntary market standards				
Milestone 3.3.2 2014. Draft protocol and data for whole farm and landscape GHG emission quantification (ICRAF, ILRI, IRRI, CIMMYT, CIAT, T3). Linked to Milestones 3.3.1 2013-15 and T4.2.	Improved methodology tested, preliminary economic analysis, analysis of global emissions hotspots (ILRI, ICRAF, IRRI, CIMMYT, T3). Workshop on data-light methods (T3). Data quantifying emissions from and potential for emissions reductions from forage-based systems in LAM (CIAT).	CCAFS website	Simple methods can be devised for widespread application. Sufficient data exists to validate simulation models. Cost effective measures and MRV are possible. Uptake of	Colorado State University, T-AGG, Global Research Alliance, Karlsruhe Institute of Technology, Maseno University; NARS in Kenya, Philippines, and Vietnam, U. Edinburgh



MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
	Refinement of SHAMBA methodology for approval by Plan Vivo for smallholders (T3).		guidelines.	
Milestone 3.3.2 2015. Protocol and data for quantification of whole farm and landscape GHG emissions among smallholders. (ICRAF, ILRI, IRRI, CIMMYT, CIAT) Linked to 3.3.1 2013-15.	Guidelines and articles on methods and identifying mitigation options. Database. Workshop with representatives of 5 major data networks and standards (ILRI, ICRAF, IRRI, T3).	CCAFS website; workshop participant list.		World Bank, CCBA, Rainforest Alliance, VCS, Unilever, Colorado State University, T-AGG, Global Research Alliance, Karlsruhe Institute of Technology, Maseno University; NARS in Kenya, Philippines, and Vietnam.
<b>Output 3.3.3</b> Enhanced capacity for the use and development of monitoring and accounting methods and assessing feasibility and impacts in regional and national research institutions				
Milestone 3.3.3 2014. Regional working groups test and refine monitoring and measurement methods (EA, SA, T3).	Field-testing of methods completed. Regional reports on methods development and testing in SA (SA with CIMMYT and IRRI). Information kiosk on manure management for EA. Expansion of network sites (ILRI). Training of 8 PhD students in quantification of GHG emissions from farms and landscapes (T3 with CIAT, ILRI, ICRAF,; SA with CIMMYT, IRRI).	Workshop participant lists	Simple methods can be devised for widespread application. Sufficient data exists to validate simulation models. Cost effective measures and MRV are possible. Uptake of guidelines.	CCAC, Global Research Alliance, NARS in Mali, Ghana, Kenya, Ethiopia,
Milestone 3.3.3 2015. Regional working groups build capacity in national entities.	35 national agency personnel engaged in 1 training workshop per CCAFS region (EA, WA). 5 Student theses completed.	Workshop participant lists	Simple methods can be devised for widespread application. Sufficient data exists to validate simulation models. Cost effective measures and MRV are possible. Uptake of guidelines.	Global Research Alliance, NARS in Mali, Ghana, Kenya, Ethiopia, Bangladesh, and Nepal.

## Theme 4. Integration for Decision Making

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>Objective 4.1</b> Explore and jointly apply approaches and methods that enhance knowledge to action linkages with a wide range of partners at local, regional and global levels				
<b>Outcome 4.1:</b> Appropriate adaptation and mitigation strategies mainstreamed into national policies in at least 20 countries, in the development plans of at least five economic areas (e.g. ECOWAS, EAC, South Asia) covering each of the target regions, and in the key global processes related to food security and climate change				
<b>Output 4.1.1</b> Future economic development scenarios taking climate change into account, and vulnerability maps and analyses incorporating a changing climate and food security issues shared with decision-makers at national, regional and global levels and informing regional economic development and national food security plans and policies				
<b>Output 4.1.2</b> Evidence on, testing and communication of, successful strategies, approaches, policies, and investments contributing to improved science-informed climate change-agricultural development-food security policies and decision making				
Milestone 4.1.2 2014. Trainings and action research implemented in all regions, with continued learning & evaluation of climate smart village approach; hundreds of women's and other groups trained in CSA practices across 5 regions; development of scaling up of PAR approaches and synthesis of insights widely disseminated into regional and national policy processes, with explicit recognition of social differentiation and gender. Partners monitoring indicators measuring uptake and benefits of CSA practices.	Workshop reports, farmer organization documents, partner reports, blogs, media stories, policy briefs, farmers and other stakeholders scaling up PAR approaches . EAFF report on use of climate info tools among EA farmers' Unions.	CCAFS, and partner organizations' websites	PAR approaches developed are appropriate and transferable to other sites, regions; Partners and knowledge users have sufficient incentives to engage and people trained remain in local institutions in each region. Sponsors and funds for global conference found	Local and national NARS, NGOs, gov't agencies and University partners, PROLINNOVA, CARE, IUCN, World Vision, World Neighbors, most CG centers and CRPs; EA, WA farmers' organizations (EAFF, ROPPA). Mediae, AFRIN
Milestone 4.1.2 2015. New investments by at least 2 int'l development partners in CSA programs in CCAFS target countries. Synthesis of knowledge on men and women farmers' adaptation strategies disseminated and fed into adaptation and mitigation strategies and national policies and economic development plans in at least 3 regions. Tens of thousands of farmers (male and female) adopting CSA practices and strategies in 5 regions.	Workshop and synthesis reports, journal article submitted, policy briefs disseminated; partner strategy and policy publications citing CCAFS	CCAFS and partners' websites; national policy documents	Strategy formulators and key national policy makers have been sufficiently involved through engagement and communication efforts, and access and use CCAFS-generated knowledge	Local and national NARS, NGOs, gov't agencies and University partners, PROLINNOVA, CARE, IUCN, World Vision, World Neighbors, most CG centers and CRPs; EA, WA farmers' organizations (EAFF, ROPPA). Mediae, AFRIN
<b>Output 4.1.3</b> Analyses providing evidence of the benefits of, strategies for, and enhanced regional capacity developed in, gender and pro-poor climate change research approaches that will increase the likelihood that CCAFS-related research will benefit women and other vulnerable as well as socially differentiated groups				

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 4.1.3 2014. Regional capacity in gender and climate change action research, and new qualitative and quantitative tools being implemented by partners in at least 3 regions, and partner institutions implementing more gender and pro-poor targeted activities.	At least 2 international development agencies and several other CRPs using CCAFS gender tools to design and target programs. Local researchers trained in gender approaches (qual and quant) implementing new research in all CCAFS regions. Gender indicators being tracked by partners working in CCAFS sites. Many partners using CCAFS gender wiki.	CCAFS and partner websites, including gender Wiki site	Partners able to inform and implement appropriate CC/gender analyses across sites in all CCAFS regions; people trained remain in local institutions; partners fully engaging in learning events and sharing information on K platforms. Work on gender will be linked across the CCAFS themes to ensure consistency of approaches and comparability	FAO, CARE, IFAD, IFPRI, IWMI, ICRISAT, ILRI, CIAT, ICRAF, CGIAR Gender Program, national partner institutions (universities, NARS, gov't), GAP network, GFAR, UN Women K Gateway for Women's Economic Empowerment
Milestone 4.1.3 2015. International conference sharing CCAFS-catalyzed evidence from 3 regions on gender implications of climate smart agricultural options and approaches. Capacity enhanced and gender and social differentiation research tools being scaled out by partners in at least 20 countries and 5 regions.	International CCAFS-gender workshop/conference held (all themes, regions, most CG centers, several CRPs). 5 international development agencies/CCAFS partners using CCAFS gender tools and evidence to design and target equitable CSA-oriented programs and measure benefits to vulnerable groups. CCAFS report, journal article based on gender evidence from implementation of CCAFS gender tools. Evidence of shifts in gender norms in some CCAFS sites in media, blogs, CCAFS learning briefs.	Workshop report and media stories. CCAFS and partner websites, including gender Wiki site.	Partners able to inform and implement appropriate CC/gender analyses across sites in all CCAFS regions; people trained remain in local institutions; partners fully engaging in learning events and sharing information on K platforms. Work on gender will be linked across the CCAFS themes to ensure consistency of approaches and comparability	FAO, CARE, IFAD, IFPRI, IWMI, ICRISAT, ILRI, CIAT, ICRAF, CGIAR Gender Program, national partner institutions (universities, NARS, gov't), GAP network, GFAR, UN Women K Gateway for Women's Economic Empowerment
<b>Output 4.1.4</b> Strengthening capacities to effectively engage in global policy processes and mainstreaming risk, adaptation and mitigation strategies into national policies, agricultural development plans, and key regional and global processes related to agriculture and rural development, food security and climate change				
Milestone 4.1.4 2014 (1). Support to regional and global processes to clarify the ecological footprint of agriculture and the ways it can be reduced, without compromising poverty and equity objectives; and building the links to the post Rio+20 process. Many and diverse sub-nat'l and nat'l partners are using CCAFS scenarios and related K in adaptation and mitigation forward-planning exercises and in engagement in global climate change and food security	Regional and global workshop reports citing CCAFS	CCAFS website, AMKN, CDKN, and partner websites; policy documents and media articles	Regional and global CC processes include agriculture	CDKN, EAFF, ROPPA, IFFKO (regional farmers' organizations), EAC, ECOWAS, ASARECA, CORAF, INSAH, government agencies in target regions/countries

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
processes.				
Milestone 4.1.4 2015. Network further expanded to help inform national, regional and global players of the opportunities for a UNFCCC Agreement on Agriculture and Climate Change, options developed for national policy processes	Regional and global workshop reports citing CCAFS; CCAFS engagement, communication and learning approaches synthesized and documented	CCAFS website, AMKN, CDKN, and partner websites; policy documents and media articles	Regional and global CC processes include agriculture	Global Adaptation FUND, UNREDD, the World Bank, IPCC, UNFCCC/SBSTA, key bilateral donors developing adaptation and mitigation strategies, large international NGOs, key regional and national actors, research for development agencies, national, regional, and international planning agencies, researchers on climate change impacts on agriculture and natural resource management
<b>Objective 4.2 Assemble data and tools for analysis and planning</b>				
<b>Outcome 4.2 Improved frameworks, databases and methods for planning responses to climate change used by national agencies in at least 20 countries and by at least 10 key international and regional agencies</b>				
<b>Output 4.2.1 Integrated assessment framework, toolkits and databases to assess climate change impacts on agricultural systems and their supporting natural resources</b>				
<b>REGIONAL SITE AND BASELINE CHARACTERIZATION</b>				
Milestone 4.2.1 2014 (1). Regional site characterizations and baseline data analyses completed and cross-regional comparisons initiated including all five target regions at three levels: household, village, and institution	Baseline survey reports for two new regions finalized, and reports made available. Synthesis CCAFS report and journal articles drafted, and M&E implementation coordinated	Reports on CCAFS and partner websites	Trained local partners are not hampered by insecurity or other crises/unforeseen events and implement the survey, regional partners engaged. Sites in new regions have been selected. Appropriate theme/regional input on characterization needs. CO M&E plan available	Univ. of Reading Statistical Group, regional partners TBD, CGIAR centers, CO
Milestone 4.2.1 2015 (1). Midline surveys implemented in three initial target regions, revisiting the same sites as the first round and initial analyses across time	Midline surveys in three initial target regions implemented, and data analysis plan developed, and M&E implementation coordinated	Reports on CCAFS website	Second round of baseline work (midline surveys) is feasible and desirable in specific sites in the CCAFS	Univ. of Reading, CGIAR centers, CO

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
			regions	
<b>DOWNSCALED CLIMATE DATA</b>				
Milestone 4.2.1 2014 (2). Downscaled climate data and methods are being applied in CCAFS regions to help set priorities and evaluate national and local impacts of climate change	Downscaled data resources further updated and refined. Quality assessment of different CMIP5 GCMs and RCMs for CCAFS regions	Reports, journal articles, software, documentation; revised datasets available on CCAFS climate data portal	Climate models can be evaluated appropriately on a regional basis	Wael Associates; University of Reading, University of Leeds, University of Oxford, University of Cape Town, CIAT, INPE, CIP
<b>DATABASES AND DATABASE TOOLS</b>				
Milestone 4.2.1 2014 (3). Based on interaction with and feedback from users, databases and tools are being modified to enable stakeholders to assess impacts of climate change and evaluate options for strengthening the resilience of agricultural and food systems	Modified databases and database tools being tested	Meta-data documents, Dataverse and other CCAFS portals, report on use and value of databases for assessing impacts and evaluating options	Community of practice continues to be strengthened	University of Reading, Met Services, WMO, UK Met Office, Harvard, CIAT, ICRAF, ILRI, CIMMYT, Hutton Institute, AgMIP, CIP, IRRI
<b>DECADAL/NEAR-TERM CLIMATE PRODUCTS</b>				
Milestone 4.2.1 2014 (4). Innovative decadal/near-term climate data products to improve near-term climate prediction investigated and developed	Near-term climate data products and scenarios development available for application in selected CCAFS target regions	Reports, papers, data	Climate science makes progress to provide useful information of value for decision making contexts	University of Cape Town, University of Leeds, IRI
<b>ASSESSMENT TOOLKITS</b>				
Milestone 4.2.1 2014 (5). Assessment toolkits being refined and starting to be used in target regions; engagement with key users initiated to build capacity in use of tools and data	Assessment methods developed, links with the regional scenario integrated assessment models explored, with the view to do ex-ante impact assessment of adaptation, risk-management and mitigation options, using a multi-scale approach. Socioeconomic scenarios for Central America and Andean countries (University for International Cooperation-UCI and UNEP, LAM)	Reports, journal articles; training modules developed	Integrated assessment models can be meaningfully compared. Buy-in of regional stakeholders remains high	IFPRI, ILRI, IIASA, PIK, AgMIP, IWMI, ICRISAT, regional partners, FAO, AfricaRice, IRRI, CIFOR, WorldFish, Bioversity, ICRAF, CSIRO, UNEP, regional partner UCI.
Milestone 4.2.1 2015 (5). Assessment toolkits utilized in target regions by national decision-makers and others; engagement with key users to build capacity in use of tools				



MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
and data				
<b>Output 4.2.2</b> Socially-differentiated decision aids and information developed and communicated for different stakeholders				
Milestone 4.2.2 2014. Selected approaches to information provision for making decisions evaluated at different scales in selected sites and countries in target regions that engage socially- and gender differentiated target groups as key stakeholders in the process	Evaluation of testing outcome-oriented social learning approaches in pilot communities in selected sites. Detailed scoping on national planning portal development, and implementation initiated if appropriate	Reports and learning briefs; community of practice on social learning is active, local social learning platforms inform outcome-oriented research	Social learning approaches are useful to enhance the performance of outcome-oriented agricultural research for development	National and regional partners, ILRI, other CG centers, IDS, IIED, Prolinnova, University of Reading, IDRC/CARIAA, CSIRO/ACIAR
Milestone 4.2.2 2015. Collation and dissemination of information and tools for prioritizing adaptation and mitigation actions at national/sub-national scales that engage socially- and gender-differentiated target groups in target regions	Use of information and tools monitored and results of pilot testing shared among policy makers	CCAFS and partner websites, surveys, reports and learning briefs	Continued strong demand for information and tools among national and sub-national decision-makers	National and sub-national governmental partners, NARS, IDS, IIED, Prolinnova, IDRC/CARIAA, CG partners, CSIRO/ACIAR
<b>Objective 4.3 Refine frameworks for policy analysis</b>				
<b>Outcome 4.3 New knowledge on how alternate policy and program options impact agriculture and food security under climate change incorporated into strategy development by national agencies in at least 20 countries and by at least 10 key international and regional agencies.</b>				
<b>Output 4.3.1</b> Climate change impacts assessed at global and regional levels on agricultural systems (socially and gender differentiated producers and consumers, and their natural resources), national/regional economies, and international transactions and potential of international and regional policy changes to enhance adaption and support agricultural greenhouse gas emissions mitigation.				
Milestone 4.3.1 2014. Report on new technologies and international policies to support their development for socially inclusive and gender-responsive adaptation and mitigation	Publication of the report and citations in national and international planning/strategy documents	Reports available on CCAFS and other websites.	Authors can be identified for study; Reviewers accept reports tool development in Output 4.3.1 and parts of theme 4.2 are successfully completed.	UN agencies e.g. UNFCCC, CGIAR centers, NARES, key bilateral donors developing adaptation and mitigation strategies, large international NGOs, key regional and national actors, research for development agencies, national, regional, and international planning agencies, researchers on climate change impacts on agriculture and natural resource management etc.
<b>Output 4.3.2.</b> Analyses of the likely effects of specific adaptation and mitigation options, national policies (natural resource, trade, macroeconomic, international agreements) including gender/livelihood groups, and communicated to key local, national and regional agencies and stakeholders.				

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 4.3.2 2014. National and regional studies complementary to the global technology policy study	Reports completed and disseminated	CCAFS and partner websites	Reviewers accept reports; authors can be identified for studies in later years; tool development in Output 4.3.1.	Regional organizations such as FANRPAN, ASARECA, CORAF, National country authors
<b>Output 4.3.3.</b> Capacity built at CGIAR, NARS, and international organizations to perform global and regional analyses of the effects of policy changes using tools developed in output 4.3.1.				
Milestone 4.3.3 2014. Activities held at NARS, and international organizations to build capacity to utilize the modeling tools developed under milestone 4.3.1 2013.	NARS partners in target countries capacity to analyze effects of policy change using modeling tools	Regional and national policies developed by local partners, national agencies that utilize the modeling tools	Physical and human resources are available in CGIAR, NARS to build local capacity for modeling	NARS and international organizations.