Log frame– Year 2013 – 2015

Theme 1. Adaptation to Progressive Climate Change

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
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				
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				
Output 1.1.1 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 2013. Tools and guidelines developed to support the selection (and / or maintenance) of the most appropriate water storage options and/ or their combinations for river basin development planning under conditions of increasing climate variability; options most likely to benefit or adversely affect marginal social groups including women assessed. Reviews of tools and guidelines, including links to individual guidelines and access to tools, with explicit recognition of gender and social differentiation.	Tools and guidelines developed, reviewed and made publicly available. Hydro-economic and socio-economic methodologies to quantify climate change impacts at water shed and sub-basin level (IWMI). Brief on their use to promote gender and social inclusion.	CCAFS website; review documents	Willing uptake of tools and guidelines; sufficiently accurate predictions of future water storage deficits and needs	IWMI,WRI-Ghana,PIK,ZEF, MRC
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		Bioversity
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 reorts on analogues results published in CCAFS reports. Dissemination of results in targeted workshop at	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.

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
	national level.			
Milestone 1.1.1 2012 (3). Practices developed that enhance the efficiency of water use in aquaculture and small scale irrigation (eg, increased productivity per unit use of water; increased irrigable area with same amount of water); Time series differential productivity and irrigated area analysis. The social and gender implications of applying these practices assessed.	Practices developed and made publicly available to different types of beneficiary groups	CCAFS website; documentation for annual reporting	Existence of aquaculture farms and terrestrial agriculture in close proximity; Recyclable use of water between aquaculture and field agriculture, including tree crops	CCAFS, NARES, ARIs, IWMI, ICRAF
Output 1.1.2 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)				
Milestone 1.1.2 2013 (1). New knowledge developed on (1) the potential application domains for agricultural and water management practices, technologies and policies (including maps), prioritized on the basis of their potential benefits for marginal social groups, especially women and (2) best means of transferring these technologies and ensuring their adoption to gender and socially-differentiated beneficiary groups; findings synthesized and presented in report and journal articles	Synthesis report and journal articles completed and disseminated	CCAFS website; Journal publishers' websites	Availability of sound climate projections to 2030 and beyond	CGIAR Centers, ESSP (e.g. Leeds University), NARES and ARIs
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		MS Swaminathan Research Foundation, India; Local Initiative for Biodiversity, Research and Development (LI-BIRD), Nepal; PROINPA, Bolivia; Semongok Agriculture Research Centre (ARC), Sarawak Malaysia

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 1.1.2 2013 (2). Research and development partners (especially female and young scientists) in at least 11 countries **trained** in using new monitoring and modelling tools for climate change adaptation for different crops including underutilized species; outcomes summarized in report	Reports completed and disseminated; training materials developed and delivered; young and female scientists actively using new tools	CCAFS website		Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), Uganda; International Foundation for Science (IFS), Sweden; African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE), Kenya; Institut de Recherché et de Développment sur la Biodiversité des Plantes Cultivées, Aromatiques et Médicinales (IRDCAM), Benin; Plant Genetic Resources Research Institute (PGRRI), Ghana; University of Nairobi, Kenya; LI-BIRD, Nepal; MS Swaminathan Research Foundation, India; PROINPA, Bolivia
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 strategy document, journal article.	Strategy document 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
Milestone 1.1.2 2013 (3). Capacities raised in at least 6 countries to assess the impacts of climate change on crops and identifying pro-poor and gender-responsive adaptation strategies at the subnational scale using crop models and gender-differentiated local knowledge (links with T4.2). Additional case studies on climate analogues initiated in at least 12 more analogue sites.	Capacity building workshops on crop modeling, climate change scenarios; case studies commissioned on simulation of impacts; case studies on climate analogues extended to more sites	National workshops, CCAFS reports.	Suitable data available for assessing socially-differentiated impacts	University of Oxford, ICRISAT, CIAT, ICRAF, NARES, Intl NGOs.
Output 1.1.3 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.				

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 1.1.3 2013 (1). Germplasm (wild and domesticated) with traits important for adapting to climate change and traits with potential benefits for different user groups conserved in local, national and regional ex situ collections and made available to target users; findings presented in peer-reviewed journal articles and genebank reports; databases augmented	Collections and databases expanded and made publicly available; reports completed and disseminated; journal articles published	Germplasm collection records; CCAFS website; Journal publishers' websites; documentation for annual reporting	Partners willing to share germplasm and knowledge; Farmers are willing participate in household surveys; local seed suppliers are willing to adopt locally adapted varieties; Rural radio partners are a credible source of information. Farmers have access to radios	Institute of Biodiversity and Conservation, Ethiopia; National Agricultural Research Institute, PNG; Institut d'Economie Rurale, Mali; Indian Council of Agricultural Research, India; Millennium seed bank; BGCI; Members of the Musa Taxonomy Advisory Group
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
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

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
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 georef erenced 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 2013 (2). Farmers' traditional, gender-differentiated knowledge on use of diversity and climate change adaptation documented and made available in at least 3 countries; findings presented in databases, reports and peer- reviewed article	Databases produced and made publicly available; reports completed and disseminated; journal articles published	CCAFS website; Journal publishers' websites; documentation for annual reporting		Institute of Biodiversity and Conservation, Ethiopia; National Agricultural Research Institute, PNG; Institut d'Economie Rurale, Mali; Indian Council of Agricultural Research, India
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;			
Milestone 1.1.3 2013 (3). Data gathered on how communities enhance conservation and use of local biodiversity within the climate change context, disaggregated by gender and other social strata; findings summarized in technical reports, factsheets and journal articles	Technical reports, fact sheets including implications for pro-poor and gender-responsive conservation and use 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

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Objective 1.2 Develop breeding strategies for addressing abiotic and biotic stresses induced by future climatic conditions, variability and extremes, including novel climates				
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				
Output 1.2.1 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 2013 (1). Methodological framework developed for assessing the impact of new technologies which are adapted to climate change conditions including their potential for positive social and gender-responsive impact; suitable framework selected by partners / an international panel.	Framework developed, reviewed and made publicly available	CCAFS website. Framework and review documents. Panel evaluation reports	Availability of frameworks and selection / composition of a generic one for the purpose allowing the flexibility in the implementation procedures	CGIAR Centers which are involved in the above activities and their NARES partners
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 2013 (2). Range of crop modeling approaches (to inform breeding) developed and evaluated for biotic and abiotic constraints for the period 2020 to 2050; findings presented in summary report and at key stakeholders' meetings ; *including modelling approaches to evaluate the impacts of climate change and the effects of adaptation technologies such as supplemental irrigation and water harvesting on water availability for crops and their productivity under decadal futures from 2020 to 2050.	Report completed and disseminated	CCAFS website	Robust climate projections (i.e. uncertainty does not dominate) and sufficient data on abiotic and biotic interactions with climate. Current crop models are capable of adequately simulating G*E*M interactions	Crop-based components of MP3, GCP, molecular and breeding platforms, ICARDA and other CG Centers, NARES, ARI breeding institutes, private sector breeding companies, Leeds University

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
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
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
Output 1.2.2 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

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
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
Objective 1.3 Integrate adaptation strategies for agricultural and food systems into policy and institutional frameworks				
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.				
Output 1.3.1 Improved institutional arrangements and socially differentiated adaptation planning approaches at the local level to enable farming system adaptation				
Milestone 1.3.1 2013. Socially and gender- differentiated knowledge developed on distribution of local seed material (seed systems) and its effectiveness in climate change adaptation strategies; findings summarized in reports, case study narratives and seed system maps.	Reports and case study narratives completed and disseminated; seed system maps developed and made publicly available	CCAFS website		REMERFI Partner (Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama); Laboratory of Applied Ecology, Faculty of Agronomic Sciences, University of Abomey-Calavi, Benin
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
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
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				

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 1.3.2 2012. Baseline national adaptation policy and plans evaluated in at least 5 target countries and published in a synthesis report and policy brief.				
Milestone 1.3.2 2013. Regional training workshop on approaches and methods for evaluating cost/benefit of adaptation strategies on a national scale.	Two trainings delivered engaging 25 participants total	CCAFS website; documentation for annual reporting; participant lists for trainings		Ministries of Agriculture and Environment, national NGOs, local government
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.			Socially and gender-differentiated data available for cost/benefit analysis	
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		
Output 1.3.3 Policies to enable access to and use of genetic resources for climate change adaptation research, and diffusion of adapted germplasm				
Milestone 1.3.3 2013. Policy guidelines produced for centers and partners to address challenges associated with obtaining, using and distributing germplasm as part of climate change related research (with particular focus on addressing challenges associated with access and benefit sharing, IPR, biosafety policies and laws).	Guidelines finalized and distributed to centers and partners	CCAFS website; documentation for annual reporting	Local seed providers ready to participate and collaborate with the project. Supportive government policies. Willingness of international bodies to revise policies related to germplasm access	CGIAR Centers; Semongok Agriculture Research Centre (ARC), Sarawak Malaysia; PROINPA, Bolivia
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	CCAFS website; Journal and book publishers' websites		CGIAR Centers; representatives of regional groups attending intergovernmental fora, secretariats of relevant international agreements.

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
	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			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 1.3.3 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
Objective 2.1 Identify and test innovations that enable rural communities to better manage climate-related risk and build more resilient livelihoods				
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				
Output 2.1.1 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 2013. Knowledge synthesis deepened, reported and communicated for three gender- and socially-equitable climate risk management interventions; Climate-related risks and vulnerabilities to four key agricultural commodities and /or systems reported.	Synthesis reports and journal articles completed and disseminated	CCAFS Website		Bioversity, ICARDA, ICRAF, IFPRI, ILRI, U. Florida, regional (e.g. ECOWAS, IGAD in WA, AIC, ICAR in IGP) and national policy decision makers (CNEDD-Mali, CONEDD-BF, CSE-Senegal, ANE-Mali in WA)
Milestone 2.1.1 2014. Knowledge synthesis products incorporated into good practice guidelines and research strategy that addresses social and gender equity; and communicated to development and policy stakeholders; Analyses of climate-related vulnerabilities of 4 key agricultural commodities and/or systems incorporated into strategic planning and policy dialog.	Good practice guidelines and policy brief published, and informing CGIAR and global change research initiatives and used to address social and gender equity issues; Reports of engagement in policy and planning dialogs.	CCAFS Website and degree of co-branding of CCAFS initiatives broadly across CRPs and external partners.		Bioversity, ICARDA, ICRAF, IFPRI, ILRI, regional (e.g. ECOWAS, IGAD in WA, AIC, ICAR in IGP) 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		Bioversity, ICARDA, ICRAF, IFPRI, ILRI, regional (e.g. ECOWAS, IGAD in WA, AIC, ICAR in IGP) and national policy decision makers (CNEDD-Mali, CONEDD-BF, CSE-Senegal, ANE-Mali in WA)
Output 2.1.2 Analytical framework and tools to target and evaluate risk management innovations for resilient rural livelihoods and improved food security				
			Same as Output 2.1.1	

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 2.1.2 2013. Household modeling tools tested and adapted for evaluating impacts of climate risk and risk management interventions on rural livelihood resilience in 2 countries; Models for crop and water management applied to climate risk and its management in 4 countries.	Development and application of modeling tools for climate risk management in 6 countries reported.	CCAFS Website		AfricaRice, CIMMYT, CIP, IFPRI, ILRI, WorldFish, Pennsylvania State U., U. Tasmania,,NARES
Milestone 2.1.2 2014. Methodology for designing and targeting comprehensive and equitable agricultural risk management strategies implemented, documented and applied at 6 locations; Two model-based climate risk management decision support tool prototypes developed; Assessment framework to understand gender differences in climate risk perception and risk management.	Design and ex-ante evaluation of risk management strategies reported in 6 countries; Assessment framework for gender differences reported.	CCAFS Website		AfricaRice, CIMMYT, CIP, IFPRI, ILRI, WorldFish, Pennsylvania State U., U. Tasmania,,NARES
Milestone 2.1.2 2015. Capacity to apply household, and intra-household modeling 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, Pennsylvania State U., U. Tasmania,,NARES
Output 2.1.3 Development; and demonstration of the feasibility, acceptability and impacts; of innovative risk management strategies and actions for socially-differentiated rural communities,				
			Effective, equitable and representative participation of different social groups in rural communities, support of intermediaries. Stakeholders identify context-relevant risk management strategies, and participate in their improvement and testing. Capable NGOs partner. Access to relevant work across CG Centers and targeted NARES. Uptake of results by key agencies. Relevant information products, services, and uses can be engaged in each region. Partners willing	
Milestone 2.1.3 2013 (1). Gender- and socially-equitable participatory evaluation of risk management interventions, at 2 locations in each of EA, WA and SA; Assessment of transferability and equity of traditional risk management strategies and access to services at 2 locations each in EA, WA and SA; Methodology guidelines for participatory evaluation of climate risk management strategies and their gender and social equity; Methodology and lessons from initial sites applied to 4 additional locations.	Report completed and journal paper published and disseminated; PAR methodology guidelines published; New participatory pilot demonstration activities and partners in 6 countries.	CCAS Website		ILRI, CIMMYT, ICARDA, ICRAF, ICRISAT, WorldFish, U. Florida, and Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations) developed for each benchmark location
Milestone 2.1.3 2014 (1). Quantitative evaluation of impact of risk management interventions on household and intra-household livelihood resilience initiated within pilot demonstrations in EA, WA and SA; Potential up-scaling mechanisms and partners identified and engaged in EA, WA and SA; Participatory pilot demonstrations initiated at 2 locations each in SEA and LA.	Report completed and journal paper published and disseminated	CCAFS Website		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

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 2.1.3 2015 (1). Quantitative evaluation of impact of risk management interventions on household and intra-household livelihood resilience in EA, WA and IGP reported; Quantitative evaluation of impact of climate risk management interventions on household and intra-household livelihood resilience initiated within pilot demonstrations in SEA and LA; Lessons and evidence on gender- and socially-equitable climate risk management interventions synthesized across participatory pilot demonstrations, reported, and shared; Conference for cross-regional comparisons and lessons; Development and policy stakeholders engaged to explore opportunities to scale up successful interventions.	Report and evaluation completed with published examples of successful implementation and synthesis of lessons in 12 countries; Conference report;	CCAFS Website and Web-based knowledge platform	to share findings through platform. Appropriate capacity for social and gender analysis deployed	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
Milestone 2.1.3 2013 (2). Gender- and socially equitable participatory demonstration and evaluation of impacts of promising production and NRM technologies, and production systems, on livelihood risk and resilience in the face of climate variability, deepened in 5 countries.	Reports and journal papers.	CCAS Website		CIMMYT, ICARDA, ICRAF, ICRISAT, and Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations)
Milestone 2.1.3 2014 (2). Results, evidence and lessons, from participatory, gender-sensitive evaluation of impacts of promising production and NRM technologies, and production systems, synthesized across locations, and shared through a web-based knowledge management platform.	Synthesis published and disseminated	CCAFS Website and Web-based knowledge platform		CIMMYT, ICARDA, ICRAF, ICRISAT, and Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations)
Milestone 2.1.3 2015 (2). Development and policy stakeholders engaged to apply lessons from participatory, gender-sensitive action research, target appropriate technologies and production systems, and explore opportunities to scale up technologies and systems with the greatest potential to enhance resilience to climate variability and change, equitably across socially-differentiated groups and gender.	Findings verified by stakeholders	CCAFS Website and Web-based knowledge platform		CIMMYT, ICARDA, ICRAF, ICRISAT, and Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations)
Milestone 2.1.3 2013 (3). Gender- and socially equitable participatory demonstration and evaluation of impacts of social capital, institutional and financial services, and policy interventions, on livelihood risk and resilience in the face of climate variability, deepened in 5 countries.	Reports and journal papers.	CCAS Website		CIMMYT, ICRISAT, IFPRI, ILRI, WorldFish, and Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations)

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 2.1.3 2014 (3). Results, evidence and lessons, from participatory, gender-sensitive evaluation of impacts of social capital, institutional and financial services, and policy interventions, synthesized across locations, and shared through a web-based knowledge management platform.	Synthesis published and disseminated	CCAFS Website and Web-based knowledge platform		CIMMYT, ICRISAT, IFPRI, ILRI, WorldFish, and Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations)
Milestone 2.1.3 2015 (3). Development and policy stakeholders engaged to apply lessons from participatory, gender-sensitive action research, target appropriate interventions, and explore opportunities to scale up institutional and policy interventions with the greatest potential to enhance resilience to climate variability and change, equitably across socially-differentiated groups and gender.	Findings verified by stakeholders	CCAFS Website and Web-based knowledge platform		CIMMYT, ICRISAT, IFPRI, ILRI, WorldFish, and Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations)

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
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 2013. Policy-oriented analysis of climate impacts on food security components, and gender- and socially-differentiated costs and benefits of alternative food security interventions, communicated with key food system stakeholders; Food system decision makers enagaged in refining and testing disiion support tools for food security response strategies.	Testing and refinement of decision support tools with key food security decision-makers in three countries; Policy engagement on food system impacts from climate fluctuation with 6 national or international food-system organizations	CCAFS Website		ILRI, IFPRI, IRRI, GEOSAS, WFP, FSIN, UNDP, NDRI, Strategic Asia, SPRI FEWSNET, relevant line ministries (e.g. MoA, MoE), other relevant regional and national food system and food security response organizations
Milestone 2.2.1 2014. Evaluation of national to global food system interventions in the face of climate fluctuations, and policy implications; Synthesis of knowledge and policy guidance on gender- and socially-differentiated impacts of food system climate risk management interventions and policies; Integration of decision support tools into national food security decision-making processes.	Report evaluating intervention results and potential for up-scaling in cooperation with strategic partners in 12 countries	CCAFS Website		ILRI, IFPRI, IRRI, GEOSAS, WFP, FAO, FSIN, 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 12 countries reported.	CCAFS Website		ILRI, IFPRI, IRRI, GEOSAS, WFP, FSIN, 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	

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 2.3.1 2013. Historic gridded daily meteorological data sets developed and evaluated, and institutional capacity enhanced, in 2 countries or regional institutions; Crop/rangeland forecasting tools developed; Institutions in 4 countries engaged to develop and test crop forecasting tools tailored to priority crops and local needs.	Gridded historic datasets, capacity-development activities for 2 countries or regions; Initial crop/rangeland forecasting tools available; Crop forecasting capacity development activities with 4 countries in SA.	CCAFS Website	threats. NMS and regional 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. Demonstrated feasibility of forecasting strategically important biological threats.	CIP, CIMMYT, AGRHYMET, ACMAD, CEREGE, Ethiopia NMA, ANAMS (Senegal), Asia Risk Center, Washington State U., IRI, NASA-JPL, FutureWater, Kansas State U., BARC, NARC, ICAR, FAO, JRC, EMBRAPA, MP3-RTB, IITA, ICIPE
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 additional countries or regional institutions; Early warning systems developed for 2 major biological threats; 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; Early warning systems piloted and tested for 2 biological threats; Training of decision makers on the use of downscaled seasonal forecast information in 2 regions	CCAFS Website		CIP, CIMMYT, AGRHYMET, ACMAD, CEREGE, ANAMS (Senegal), Washington State U. IRI, NASA-JPL, FutureWater, Kansas State U., BARC, NARC, ICAR, FAO, JRC, EMBRAPA, MP3-RTB, IITA, 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; Biological threat early warning systems implemented and tested 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 and early warning systems reported.	CCAFS Website and co-branded systems housed at national or regional bodies		CIP, CIMMYT, AGRHYMET, ACMAD, CEREGE, IRI, FutureWater, Kansas State U., BARC, NARC, ICAR, FAO, JRC, EMBRAPA, MP3-RTB, IITA, ICIPE
Output 2.3.2 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				
Milestone 2.3.2 2013. Evaluation of agrometeorlogical advisory services in 2 countries; Tested protocols for designing and communicating salient climate information with rural communities, with attention to the needs of women and socially marginalized; Summary report on gender and social equity of climate information sources and delivery mechanisms, and policy advice to enable equitable access; Synthesis report on status, gaps, opportunities for climate services for agriculture and food security in EA, WA, SA.	Agrometeorological advisory service evaluation reports; protocols for communication published	CCAFS Website		CIMMYT, ICRISAT, IWMI, USAID, India Meteorological Department, Meteo-Mali, IER (Mali), World Vision, pilot demonstration project teams (NMS, NARS, NGOs, farmer association, research partners) to be developed for each benchmark location

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
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 in EA, WA, IGP; 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
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
Objective 3.1 Inform decision [i]makers about the impacts of alternative agricultural development pathways				
Outcome 3.1: 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				
Output 3.1.1 Analysis of agricultural development pathways and trade-offs				
Milestone 3.1.1 2013. Analysis of mitigation trade-offs for agricultural development pathways in 3-6 countries (CIAT, IFPRI, T3).	*Data collected for adaptation, ecoefficiency, low emissions development pathways, and food-energy trade-offs.* Report completed on assessment of pressure on forest and conservation areas due to shift in perennial cropping (Global); paper on social and environmental costs and benefits of mitigation options (Colombia); report on metric for ecoefficiency pathways based on soil and land condition in EA or LA (CIAT). 2 case studies on adaptation-mitigation tradeoffs in Burkina Faso, Guinea, and Nicaragua (IFPRI with CIAT). NAMA option assessment in Kenya (T3). Low emissions development pathways with case in SA (T3). Report on food-energy trade-offs (T3).	CCAFS website, partner interviews	Development trajectories are realistic, data is available, policy maker will and capacity to pursue alternate pathways	NARS in Colombia, Nicaragua, Burkina Faso and Guinea; Ministry of Agriculture, Kenya
Milestone 3.1.1 2014. Comparative analysis of mitigation tradeoffs for agricultural development pathways across 3-6 countries (CIAT, IFPRI, T3).	*Analysis of results for adaptation, ecoefficiency and low emissions development pathways.* Implications of shift in perennial cropping for REDD+; model and report on trade-off analysis among social, environmental, and economic indicators; case study reports and article to evaluate ecoefficency pathways for mitigation potential (EA, LAM, SEA) (CIAT). Comparative analysis of adaptation-mitigation tradeoffs, with additional case from India; research priorities shared in reports, workshops (IFPRI with CIAT).	CCAFS website	See 3.1.1 2013	NARS in Colombia, Nicaragua, Burkina Faso, Guinea and India; Ministry of Agriculture, Kenya.

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 3.1.1 2015. Policy engagement on synthesis of findings on low emissions agricultural development pathways (CIAT, IFPRI, T3).	*Sharing of results for adaptation, ecoefficiency, low emissions development and high value carbon pathways.* 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) ecoefficient pathways that optimize soil C, seminar and briefs (CIAT); (4) analysis of adaptation and mitigation trade-offs (IFPRI with CIAT); (5) NAMA country report and workshop for policy makers (T3, EA); and (6) Policy briefs, national stakeholder platforms on high value biocarbon development (ICRAF).	CCAFS website	See 3.1.1 2013	NARS in Colombia, Nicaragua, Burkina Faso and Guinea; Ministry of Agriculture, Kenya.
Output 3.1.2 Enhanced tools, data, and analytic capacity in regional and national policy and research organizations to analyze mitigation sectors and agricultural development options				
Milestone 3.1.2 2013 (1). Capacity building of decision makers and national stakeholders in use of appropriate tools, data, and knowledge (ILRI, T3).	Training workshops on GHG inventories for livestock systems in 3 CCAFS regions (ILRI); Supporting women's innovations in benchmark sites (T3); Global review of national mitigation planning (T3).	Monitoring and evaluation reports	Analysis of livestock GHG emissions will contribute to knowledge for GHG inventories in cropping systems. Inventory methods will help benefit management by smallholders.	Global Research Alliance. NARIs, University of California Berkeley, Prolinnova, WOCAN, Unique Forestry
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
Objective 3.2 Identify institutional arrangements and incentives that enable smallholder farmers and common-pool resource users to reduce GHGs and improve livelihoods				
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				
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				
Milestone 3.2.1 2013 (1). Research established on economic incentives and benefits for mitigation practices (CIMMYT, ILRI, IITA). Linked to Milestone 3.3.1 (2013-2015).	*For conservation agriculture in rice-wheat systems in IGP; sustainable land management in maize-legume systems and pastoral systems in EA; and cocoa and coffee in WA and EA*. Analytical framework and methods established for adoption of integrated practices in EA and IGP (CIMMYT). Report on incentives for pastoralists to modify rangeland management in EA (ILRI). Evaluation of current practices and incentives for low emissions agriculture in coffee and cocoa (IITA). See also T4 household economic modeling.	CCAFS website; Journal publisher's website	Incentives for adoption of practices that reduce climate impacts are a key bottleneck.	SIMLESA Project (Africa) CSISA project (IGP-Asia), IITA, ICARDA, ICAR, EIAR, KARI, UMB-USA, UMB-Norway, IFRI and University of Michigan, Makarere University, local research partners in benchmark site countries.
Milestone 3.2.1 2013 (2). Testing of institutional arrangements for carbon finance, markets and mitigation standards (T3, IFPRI) Linked to CRP6.4.	*For agroforestry and sustainable land management, biochar, and alternative mitigation practices*: Report on 2 cases, protocols and training on access to carbon markets for biochar and alternative mitigation practices (Kenya and Ghana), reports on readiness lessons from REDD+ for agriculture and scope of corporate social responsibility programs (IFPRI, T3). Case studies for landscape governance and avoided deforestation from oil palm in Indonesia and livestock in Brazil (T3).		Carbon market projects continue to be relevant, albeit as a niche market.	NARS, IPAM, FOE, University of Michigan, IFRI, GAR, Greenomics
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).	*For conservation agriculture in rice-wheat systems in IGP; sustainable land management in maize-legume systems and pastoral systems in EA, and cocoa and coffee in WA and EA*. Report on economic incentives from adoption of integrated practices (CA, SLM, EA, and IGP) (CIMMYT). Report on carbon costs	CCAFS website; Journal publisher's website	See Milestone 3.2.1 2013 (1)	SIMLESA Project (Africa) CSISA project (IGP-Asia), IITA, ICARDA, ICAR, EIAR, KARI, UMB-USA, UMB-Norway, IFRI and University of Michigan, Makarere University, local research partners in benchmark site countries.

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
	across scales (IITA).			
Milestone 3.2.1 2014 (2). Testing of institutional arrangements for carbon finance and markets and mitigation standards (IFPRI, T3) Linked to CRP6.4.	Report and workshops on regional options for climate finance for mitigation (IFPRI). Report on institutional interventions for landscape governance in Indonesia and Brazil, workshops (T3). Report and policy briefs on carbon project design (T3).		See Milestone 3.2.1 2013 (2)	Vi, CARE, World Vision, EcoTrust, EcoAgriculture 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 IGP (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 IGP 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
Output 3.2.2 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 reductions (EA, SEA, LA)	3 workshops for policy makers and practitioners. Consultations with 30 decision-makers across target regions (EA, SEA, LA).	Workshop participation lists	See Milestones 3.2.1 2013 (1) and 3.2.1 2013 (2)	Government agencies, University networks
Milestone 3.2.2 2015. Decision-makers in target regions better informed regarding policy options and gender implications for incentivizing and rewarding smallholders for GHG emission reductions (ICRAF).	Action plan for business model for regional biocarbon support mechanism in WA (ICRAF).	CCAFS website	See Milestones 3.2.1 2013 (1) and 3.2.1 2013 (2)	Government agencies, Biocarburant
Objective 3.3 Test and identify desirable on-farm practices and their landscape-level implications				
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				
Output 3.3.1 Analysis of mitigation biophysical and socioeconomic feasibility for different agricultural practices and regions, and impacts on emissions, livelihoods, and food security				

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 3.3.1 2013. Assessment of feasibility and impacts for mitigation practices on farms: (i) soil carbon dynamics under different management practices (EA, IGP, Mexico) and irrigated farming systems in rice-wheat and maize-legume systems (IGP, Mexico) (CIMMYT); (ii) water and nutrient management and avoided straw burning in rice-based production systems (IRRI); (iii) agro- silvi- horti- pastoral farming systems in India (ICRAF); (iv) major crops of Subsaharan Africa, coffee and cocoa agroforestry (IITA); (v) dryland Jatropha sites (ICRISAT); (v) pasture and coffee systems (CIAT, with IFPRI); (vi) land use change, land rehabilitation, and peatland management under oil palm (CIFOR); (vii) biochar, integrated smallholder agroforestry, smallholder biofuel production (ICRAF); and (viii) livestock, rangelands (ILRI). See also 3.2.1 2013 (2) on biochar (IFPRI).	Database established, models identified; analytical framework for assessing management practices (CIMMYT). MRV guidelines, strategies for women's engagement, protocols for instrumentation, fine-tuned mitigation strategies, submitted methodology for straw burning, trials and model development for nutrient cycling and ecosystem services (IRRI). Reports on C footprint quantification for cassava, cowpea, soybean on 4 sites in WA, EA; policy recommendations for coffee and cocoa sector (IITA). Paper on social and gender relations and trade-offs, trade-offs and mitigation potential of biochar vs. alternative mitigation practices; 4 case studies, dissemination of research results at 2 international meetings (IFPRI). 2 journal articles and report (ICRAF). Baselines for LUC and biomass production in 5 countries of WA, flux tower equipment installed (ICRISAT). Testing potentials for N_2O and C sequestration in pasture, and reduced methane from improved forage, assessed LA; tradeoff analysis for mitigation, adaptation and livelihoods for coffee for LA (CIAT). Articles, datasets and experiments established (CIFOR). Papers on biochar mitigation potential in EA, C sequestration in India, report and articles on sufficient biomass for biofuels (ICRAF). Report on diet intensification for livestock in EA, WA, IGP; report on effects of fire and grazing on soil C (WA, EA) (ILRI).	CCAFS website, framework downloaded 200 times.	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
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	Analysis of field data and simulation output for C sequestration (EA, IGP, Mexico) and nutrient management in CA-based intensification, field trials	Project reports; CCAFS website.	Same as 3.3.1 2013	NARIs in each region

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
and avoided straw burning in rice-based production systems (IRRI), (iii) major crops of Subsaharan Africa, 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) response to N fertilizers, biochar, manure, soil and water conservation in dryland Jatropha sites (ICRISAT), (vii) 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); land use change, land rehabilitation, and peat land management under oil palm (CIFOR); and pasture, rangelands (ILRI).	continued (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, trials for nutrient cycling and ecosystems services (IRRI). Participatory trials for C footprint on coffee, cocoa, cassava, soybean, and cowpea; report on carbon costs of cocoa and coffee production (IITA). Best management practices identified; continued monitoring; modeling mitigation potentials in WA (ICRISAT). Reports and journal articles on best practices (ICRAF). Sharing of options and journal article for N_2O 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). 6 papers and 3 theses submitted; experiment data collected (CIFOR). Initial report on improved pasture for mitigation and land sparing in LA, report on opportunities for C credits from rangelands (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 Subsaharan Africa; rice-based systems (IRRI), land use change, land rehabilitation, and peat land management under oil palm (CIFOR); nutrient management and soil and water conservation in dryland Jatropha sites across an agroecological gradient (ICRISAT); rangelands (ILRI); and	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	Data and publications available.	Same as 3.3.1 2013	NARIs in each region

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
wood energy and agroforestry (ICRAF).	(IRRI). Technological interventions for 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_2O 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
Output 3.3.2 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 2013. Research established to develop a protocol for quantification of whole farm and landscape GHG emissions among smallholders (ICRAF, ILRI, IRRI, CIMMYT, CIAT, T3). Linked to Milestones 3.3.1 2013-15, 3.2.1 2013 and T4.2.	Methodology established, website compilation of "best" methods, regional trials, data. Results shared through websites, policy briefs and scientific articles (ICRAF, ILRI, IRRI, CIMMYT, CIAT, T3). Special issue of ERL on methods for GHG quantification (T3).	CCAFS website; journal publisher's 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 guidelines.	Colorado State University, T-AGG, Global Research Alliance, Karlsruhe Institute of Technology, Maseno University, NARS in Kenya, Philippines, and Vietnam, Duke University.

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 3.3.2 2014. Draft protocol for whole farm and landscape GHG emission quantification (ICRAF, ILRI, IRRI, CIMMYT, CIAT). Linked to Milestones 3.3.1 2013-15 and T4.2.	Improved methodology tested, preliminary economic analysis (ILRI, ICRAF, IRRI, T3).	CCAFS website	Same as Milestone 3.3.2 2013	Colorado State University, T-AGG, Global Research Alliance, Karlsruhe Institute of Technology, Maseno University; NARS in Kenya, Philippines, and Vietnam.
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.
Output 3.3.3 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 2013. Working groups and networks established in three regions to develop methods for management and MRV of GHG emissions (EA, WA, IGP).	Three regional workshops, network established in WA, EA, IGP (ILRI). Student research conducted for CLIFF.	CCAFS website	Same as Milestone 3.3.2 2013	Global Research Alliance, NARS in Mali, Ghana, Kenya, Ethiopia, Bangladesh and Nepal, Aaarhus University, CLIFF PhD student network.
Milestone 3.3.3 2014. Regional working groups test and refine monitoring and measurement methods (EA, WA, IGP).	Field-testing of methods completed. Regional reports on methods development and testing. Global workshop. (EA, WA). Expansion of network sites (ILRI). 5 Student theses completed.	Workshop participant lists	Same as Milestone 3.3.2 2013	FAO, Global Research Alliance, NARS in Mali, Ghana, Kenya, Ethiopia, Bangladesh, and Nepal.
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	Same as Milestone 3.3.2 2013	FAO, 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
Objective 4.1 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				
Outcome 4.1: 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				

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Output 4.1.1 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				
Milestone 4.1.1 2013. EA and WA regional scenarios finalized in a process that has developed capacity in key national and regional agencies, and policy advisors using the scenarios, or lessons learned through developing them, in informing forward-looking agricultural development, food security, and climate change-related policies and programs. Scenarios partners and processes launched in Latin America and South Asia.	EAC, ECOWAS reports/strategy documents; UNFCCC document citing CCAFS /scenarios research; Report completed and disseminated; journal article published; new networks linking scenarios experts with policymakers established; Journal article submitted; workshop reports; films, blogs, briefs produced; publications citing CCAFS	EAC, ECOWAS, CCAFS websites, UNFCCC website;, Oxford, GEC partner, USAID websites; national policy documents; AMKN, FAO websites; ASARECA, CORAF, EAFF, ROPPA websites; newspaper and other media articles; UNFCCC reports; presentations and media coverage at COP	Capable partners remain engaged and help communicate scenario research results widely and to inform key decision-makers. Partners have sufficient incentives to engage and people trained remain in local institutions. Uptake of results by key agencies. Relevant information products, services, and users are engaged in each region. Partners willing to share findings through platforms.	GEC, USAID, ILRI, PANOS, FAO, ASARECA, EAC, ECOWAS, CORAF, EAFF, ROPPA
Output 4.1.2 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 2013. First results from PAR, including gender analyses, are published and fed into national and regional policy processes; Synthesis and research reports developed on lessons from linking land health and soil carbon measures with socioeconomic information from CCAFS sites; Local institutional capacity strengthened in land health surveillance methods including soil carbon measurement in additional regions	CCAFS actively engaged with many partners in developing outcome and impact pathways and jointly designing and implementing pro-gender and pro-poor research in CCAFS sites, testing CSA interventions, and communicating outcomes and data through various media. Number of local scientists trained and implementing latest land health surveillance approaches; Article published	Outcome and impact pathways maps for CCAFS sites and regions on CCAFS and partner websites; workshop reports; national and regional strategy documents. AFSiS, CIAT, AMKN, websites and reports	Relevant information products, services, and users are engaged in each region. Partners willing to share findings through platforms.	Local and national NARS, NGOs, gov't agencies and University partners, PROLINNOVA, CARE, CG Gender Network, most CG centers and CRPs, AFSiS/CIAT, EA, WA and SAsia farmers' organizations
Milestone 4.1.2 2014. Cross-site visits and 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. Land health and soil carbon measurement being used by partners to inform national and regional land, agriculture and climate change policies	Workshop reports, farmer organization documents; Special issue on socioeconomics of climate change, agriculture and food security; Resource book	CCAFS and farmer 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, CG Gender Network, most CG centers and CRPs, EA, WA and SAsia farmers' organizations

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 4.1.2 2015. 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.	Workshop and synthesis reports, journal article submitted, policy brief disseminated; publications citing CCAFS	CCAFS and partners' websites	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, CG Gender Network, most CG centers and CRPs, EA, WA and SAsia farmers' organizations
Output 4.1.3 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				
Milestone 4.1.3 2013. Syntheses and other joint partner communication products based on findings from CCAFS work with women and marginalized groups	Synthesis report; briefs, TV episodes and related materials (leaflets, blogs, u-tube videos, etc) featuring CCAFS/CG/partner interventions and number of viewers, training materials	CCAFS websites and,links to CCAFS on partner websites; number of downloads of related CCAFS reports, articles, etc	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	CRP2, FAO, IWMI, ICRISAT, ILRI, ICRAF, CGIAR Gender Program, national partner institutions (universities, NARS, gov't)
Milestone 4.1.3 2014. Regional capacity in gender and climate change action research developed in at least 3 regions, and partner institutions implementing more gender and pro-poor targeted activities.	Number of trained partners and organizations undertaking gender analysis and targeted R4D activities	CCAFS and partner websites	Same as 4.1.3 2013	FAO, IWMI, ICRISAT, ILRI, ICRAF, CGIAR Gender Program, national partner institutions (universities, NARS, gov't)
Output 4.1.4 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 2013 (1). Support to negotiators, civil society and government agencies to fully contribute to the UNFCCC work program on agriculture, with explicit support to marginalized groups to build their capacity to participate in policy development to improve food security; Assessment of effectiveness of CCAFS learning approach and utilization by a diverse range of partners of CCAFS-generated knowledge.	Farmers' organizations' (including representatives of women's interests) participation in CCAFS-supported learning platforms and events, private sector partners' inviting CCAFS to their strategy and policy workshops, cites of CCAFS work on partner websites and in their strategies; policy briefs, presentations, papers; Number of CCAFS-supported documents, methods and training materials downloaded, number of local partners playing leadership roles in key regional and global CC and food security events and citing CCAFS documents/evidence	CCAFS and partner websites; AMKN, policy and strategy documents	Relevant information products, services, and users are engaged and evidence used by policymakers to inform strategies and policies aimed at enhancing sustainable agricultural development and food security	CRP6, CDKN, EAFF, ROPPA, IFFKO (regional farmers' organizations), EAC, ECOWAS, ASARECA, CORAF, INSAH, government agencies in target regions/countries; key private sector partners in each region

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
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	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
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 develop agencies, national, regional, and international planning agencies, researchers on climate change impacts on agriculture and natural resource management
Objective 4.2 Assemble data and tools for analysis and planning				
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				
Output 4.2.1 Integrated assessment framework, toolkits and databases to assess climate change impacts on agricultural systems and their supporting natural resources				
REGIONAL SITE AND BASELINE CHARACTERIZATION				
Milestone 4.2.1 2013 (1). Regional site characterizations and baseline data synthesized in cross-regional comparisons in the initial three target regions; Regional site characterizations and baseline data collection completed and initial analyses initiated in two additional target regions at three levels: household, village, and institution	Synthesis baseline reports finalized across three regions, and baseline survey data for two new regions collected and started to be made available. Regional characterization carried out for two new regions, and M&E implementation coordinated	Data and reports available on CCAFS/partner websites, journal articles	Trained local partners are not hampered by insecurity or other crises/unforeseen events and implement the survey, regional partners engaged. Appropriate theme/regional input on characterization needs. CO M&E plan available	University of Reading Statistical Group, CGIAR centers, regional partners (as last year); CSI, HarvestChoice, Met Services; AFSIS; IHDN
Milestone 4.2.1 2014 (1). Regional site characterizations and baseline data analyses completed and cross-regional comparisons initiated including all target regions at three levels: household, village, and institution	Baseline survey reports for two new regions finalized, and all reports made available. Synthesis CCAFS report and journal articles drafted, and M&E implementation coordinated	Reports on CCAFS and partner websites		Univ. of Reading Statistical Group, regional partners TBD, CGIAR centers, CO

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 4.2.1 2015 (1). Second round of baseline surveys implemented in three initial target regions, revisiting the same sites as the first round and initial analyses across time	Second round of baseline 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 is feasible in CCAFS regions	Univ. of Reading, CGIAR centers, CO
DOWNSCALED CLIMATE DATA				
Milestone 4.2.1 2013 (2). Downscaled climate data and methods available for application; and regional climate characterization and evaluation of global and regional climate model performance for two additional target regions.	Downscaling method comparison analysis completed and written up. Downscaled data resources updating and refining, including AR5 data with new emissions scenarios, and evaluation reports of different state of the art global & regional climate models from the perspective of agricultural impacts modeling	Reports, papers; software/model, datasets, documentation on CCAFS website and climate data portal	Climate models can be evaluated appropriately on a regional basis	CIP, CIAT, University of Cape Town, University of Oxford, Waen Associates; University of Reading, University of Leeds, INPE
Milestone 4.2.1 2014 (2). Downscaled climate data and methods are being applied in CCAFS regions	Downscaled data resources updating and refining further, possibly including spatial weather generators for regional applications developed. Detailed quality assessment of different AR5 GCMs and RCMs for CCAFS regions	Reports, journal articles, software, documentation; revised datasets available on CCAFS climate data portal		Waen Associates; University of Reading, University of Leeds, University of Oxford, University of Cape Town, CIAT, INPE
DATABASES AND DATABASE TOOLS				
Milestone 4.2.1 2013 (3). Databases and tools further elaborated and managed to enable stakeholders to assess impacts and evaluate options, including weather data products and household level agricultural systems data	Database, database tools, and crop model wiki site available to users with new features added	Report, meta-data documents and databases on web/Dataverse, Geo-wiki	Community of practice continues to be strengthened	FAO, ILRI, IIASA, IFPRI, University of Wisconsin, University of Reading, Met Services, WMO, UK Met Office, Harvard, CIAT, ICRAF, CIMMYT, ICRISAT; Hutton Institute, AgMIP
Milestone 4.2.1 2014 (3). Based on interaction with and feedback from users, the second generation of databases and tools is being redesigned to enable stakeholders to assess impacts and evaluate options	Second generation databases and database tools being tested	Meta-data documents, Dataverse CCAFS system, report documenting the 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
DECADAL/NEAR-TERM CLIMATE PRODUCTS				
Milestone 4.2.1 2014 (4). Innovative decadal/near-term climate products developed to improve near-term climate prediction	Near-term climate forecasts, 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, EQUIP, IRI
ASSESSMENT TOOLKITS				

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 4.2.1 2013 (5). Assessment toolkit components further evaluated, refined and used to analyze likely effects of specific adaptation and mitigation options in target regions, with a focus on household and intra-household model data and testing and intercomparison of global and regional integrated assessment models	Household and intra-household model testing in selected CCAFS sites, and global integrated model intercomparisons, and initial evaluation of regional-scale models in selected CCAFS regions to assess different adaptation, risk management and mitigation options	Reports, journal articles; regional modeling framework made available and applied	Integrated assessment models can be meaningfully compared. Buy-in of regional stakeholders remains high	ILRI, IIASA, IFPRI, CSIRO, Wageningen University IIASA, PIK, AGMIP, PBL, University of Oxford, Global Futures, regional stakeholders, Food Economy Group, University of Natal, FAO, AfricaRice, IRRI, CIP, ICRISAT, IWMI
Milestone 4.2.1 2014 (5). Ensemble approach to assessment toolkits designed in target regions; engagement with key users initiated to build capacity in use of tools and data	Dynamic vulnerability 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 an ensemble approach	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, PBL, IWMI, ICRISAT, regional partners, Food Economy Group, University of Natal, FAO, AfricaRice, IRRI, CIP, ICRISAT
Milestone 4.2.1 2015 (5). Assessment toolkit ensemble utilized in target regions; engagement with key users to build capacity in use of tools and data				
Output 4.2.2 Socially-differentiated decision aids and information developed and communicated for different stakeholders				
Milestone 4.2.2 2013. Outcome-oriented approaches to decision aids developed in selected sites in 3 initial target regions that engage with socially- and gender differentiated target groups	Engagement with partners to implement the strategy for social learning and communication at the local level; testing of innovative social learning approaches to support local decision making for representative socially and gender differentiated groups in pilot communities in selected sites	CCAFS and partner websites report, workshops, CCAFS science meeting evaluations positive	Social learning approaches are useful to enhance the performance of outcome-oriented agricultural research for development; CO reward system for scientists includes criteria beyond peer-reviewed publications	National and regional partners, CG centers, ILRI, IDS, IIED, Prolinnova, University of Reading, and partners to be identified
Milestone 4.2.2 2014. Selected approaches to decision aids tested and evaluated in selected sites in target regions that engage socially- and gender differentiated target groups as key stakeholders in the process	Coordinating the implementation of strategy at selected sites; Evaluation of testing outcome-oriented social learning approaches in pilot communities in selected sites	Reports; community of practice on social learning is active, local social learning platforms inform outcome-orierented research	Social learning approaches are useful to enhance the performance of outcome-oriented agricultural research for development; CO reward system for scientists includes criteria beyond peer-reviewed publications	National and regional partners, CG centers, ILRI, IDS, IIED, Prolinnova, University of Reading, and partners to be identified
Objective 4.3 Refine frameworks for policy analysis				
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				

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
in at least 20 countries and by at least 10 key international and regional agencies.				
Output 4.3.1 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 2013 Improvements to a modeling environment for policy evaluation and ex-ante assessment of promising technologies related to climate change	CGE soft linkages with partial equilibrium models (particularly IMPACT) available as part of model runs. Improvements in aggregation, landuse, non-traded goods, and trade policies components of IMPACT. Crop modeling software improvements (DSSAT)	Integrated framework between CGE modeling and partial equilibrium modeling (particularly IMPACT) available for use. Main IMPACT software branch including improved code available for model runs. DSSAT crop modeling software that incorporates new and improved models for cassava, wheat, and sweet potatoes available for use		CGIAR centers (IFPRI, IRRI, ILRI, CIMMYT, ICRISAT, CIP, ICRAF), University of Florida, Global crop modeling community, FAO (tbc)
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 repot 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 develop agencies, national, regional, and international planning agencies, researchers on climate change impacts on agriculture and natural resource management etc.
Output 4.3.2. 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.				
Milestone 4.3.2 2013. Global model intercomparisons for analysis of climate change impact, related to mitigation and adaptation policy choices in the agricultural sector. Integration of modeling work into foresight and strategic scenarios building	Initialization and implementation of AgMIP Global Economic Model Intercomparisons (global and regional land use, production and trade models used for analysis of climate change impact, mitigation and adaptation in the agricultural sector: Economic Model intercomparison component) : Phase II, Integration of CRP7 Theme 4.3	Successful organization of two global workshops and one conference (tbc). Participation in CRP2 workshops/conferences. Working papers/ policy reports to be published	.	Global economic modeling community (University of Chicago, University of Sussex, MIT, Oregon State University, Purdue University, Wageningen UR, IIASA, ABARES, LEI, PIK, Pacific Northwest National Laboratory, USDA, NIES (Japan),

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
	work with CRP2 "Strategic Foresight" activities			PBL Netherlands Environmental Assessment Agency, DAFF (Australia), World Bank, EC, FAO, OECD), CGIAR Centers, other CRP2 partners, other International Organizations, key regional and national actors
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
Output 4.3.3. 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 2013. Collaboration with CGIAR centers, NARS, and international organizations to further increase capacity in utilizing and developing modeling tools, to perform global and regional analyses in the context of promising technologies related to climate change	CGIAR partners in target countries capacity to analyze effects of policy change using modeling tools	Submission in the form of working papers or journal publications of of advanced simulation analyses of virtual cultivars for suggested crops. Successful participation in one or more final/transition workshops Dissemination report to partners, donors, researchers, and policymakers providing details on modeling, impacts of different scenarios and preliminary conclusions and recommendations on effective policy interventions		CGIAR centers (IFPRI, IRRI, CIMMYT, ICRISAT, CIP, ICRAF), Bill & Melinda Gates Foundation
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.