

## Annex 1: Logframe for CRP7 for Phase 1 (Year 1-5).

Outputs to be achieved by Year 5, Outcomes by Year 10 (\* = milestones carried forward from current Center activities; some will be phased out while others will be brought into line with the overall CRP7 strategy as implementation proceeds)

### Theme 1. Adaptation to Progressive Climate Change

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>Objective 1.1 Analyze and design processes to support adaptation of farming systems in the face of future uncertainties of climate in space and time</b>				
<b>Outcome 1.1: Agricultural and food security strategies that are adapted towards predicted conditions of climate change promoted and communicated by the key development and funding agencies (national and international), civil society organizations and private sector in at least 20 countries</b>				
<b>Output 1.1.1</b> Development of farming systems and production technologies adapted to climate change conditions in time and space through design of tools for improving crops, livestock, and agronomic and natural resource management practices				
Milestone 1.1.1.1 Platform established for multi-location trials of technologies and genotypes for GxE interaction analysis and the calibration and evaluation of crop models. (2011)	Number of unique geographic locations, where individual and multi site trials are carried out; assessment of related information and metadata collected; and exchange of derived information	Task report; CCAFS website/ AMKN platform	Willingness of partners to carry out the trials and share the trial data	CIAT and other CGIAR centers, CIRAD, JIRCAS, NARES (e.g. EIAR, KARI, NARO, IARI, CRIDA, BARC, BARI NARC, CILSS, etc) and other ARI institutions involved in agricultural trials
Milestone 1.1.1.2 Robust methods developed for calculating spatial and temporal analogues of climate. Partner co-authored peer-reviewable method(s) developed and tested codes using pattern-scaled HadCM3 climate output. (2011)	Methods developed and made publicly available through developed communication platforms	CCAFS website/ AMKN platform ; documentation for annual reporting	Robustness of testable methods using only climate model output (i.e. pattern-scaled HadCM3)	University of Reading, with guidance from University of Leeds + local partners (IGP) involved in the implementation phase and web interface development + CIAT
Milestone 1.1.1.3* One to five flagship technologies 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 (2015)	Technologies developed and made publicly available. Positive feedback and increased demand of new technologies by the clientele. Field validation and assessment during field visits by different stakeholders made as a part of 2015 visits	CCAFS 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' organisations
Milestone 1.1.1.4* 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 (2012)	Practices developed and made publicly available	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	WorldFish, NARES, ARIs, IWMI, ICRAF

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 1.1.1.5 Methodological framework developed for assessing the impact of new technologies which are adapted to climate change conditions; suitable framework selected by partners / an international panel. (2013)	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 1.1.1.6*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; Reviews of tools and guidelines, including links to individual guidelines and access to tools (2013)	Tools and guidelines developed, reviewed and made publicly available	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 1.1.1.7*(2012) Assessment of the potential for exploitation of ground water for crop production in at least three basins	Maps demonstrating the potential for groundwater exploitation, which take adequate account of uncertainty	Report, and potentially peer-reviewed paper	Sufficient groundwater available for exploitation at least some sites	IWMI, WRI-Ghana, PIK, ZEF, MRC, OSS
<b>Output 1.1.2</b> Building of regional and national capacities to produce and communicate appropriate adaptation and mitigation strategies for progressive climate change at the national level (e.g. through NAPAs)				
Milestone 1.1.2.1*New knowledge developed on (1) the potential application domains for agricultural practices, technologies and policies (including maps), and (2) best means of transferring these technologies and ensuring their adoption; findings synthesized and presented in report and journal articles (2012)	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 1.1.2.2 Community-based holistic adaptation options trialed in at least three sites, in order to understand the social, cultural, economic and institutional barriers to effective adaptation; outcomes presented in summary report (2014)	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
Milestone 1.1.2.3 Training workshop(s) organized and videos produced on the use of the Analogue methodology (for examining both spatial and temporal analogues based on multiple climate projections; see 1.1.1.2). Engagement of key IGP stakeholders such as national universities, NARC, ICAR (DWR), BARC, NGOs; Farmer exchanges convened among analogue sites (2011, 2012)	Two trainings (2011, 2012) delivered engaging 25 participants; min 2 videos produced; exchanges convened engaging farmers in 2 regions	CCAFS website; documentation for annual reporting; participant lists for film showings, trainings and exchanges		National universities, ICAR, BARC, NARC, NGOs

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Milestone 1.1.2.4 Regional training workshop on approaches and methods for evaluating cost/benefit of adaptation strategies on a national scale (2013)	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
<b>Output 1.1.3</b> New knowledge-synthesizing institutional arrangements, policies and mechanisms for improving the adaptive capacity of agricultural sector actors and those involved in managing the food system				
Milestone 1.1.3.1*Document produced that synthesizes institutional arrangements, policies and mechanisms for improving the adaptive capacity of agricultural sector actors (addresses what is working where, how and why, with disaggregation by gender and other social strata) (2011)	Document completed and disseminated	CCAFS website	Partners have sufficient incentives to engage and people trained remain in local institutions	African & South Asian University networks; development NGOs (e.g. CARE, Oxfam, ICCCAD), government, regional bodies
Milestone 1.1.3.2 Web-based platform established (Adaptation and Mitigation Knowledge Network) to share and exchange knowledge, linking farmers' realities and experiences on the ground with multiple and combined research outputs (2011)	Platform developed and made publicly available (cf <a href="http://www.sac.ac.uk/climatechange/armingforabetterclimate/">http://www.sac.ac.uk/climatechange/armingforabetterclimate/</a> ) Number of unique geographic locations, where individual and multi site trials are carried out; assessment of related information and metadata collected; and exchange of derived information	CCAFS website; documentation for annual reporting		
Milestone 1.1.3.3*Adaptation option portfolio (tool box) for aquaculture systems, options identified and disseminated in Vietnam, tool box disseminated in Bangladesh. Building capacity by creating information and working in partnerships. (2011)	Toolbox available and disseminated	Partners' documentation		WorldFish, MCD Vietnam, Cantho University ESSP partners IHDP/ZEF University of Bonn or/and SEA START RC
<b>Output 1.1.4</b> Testing of participatory methods that are sensitive to gender, livelihoods categories and other social differentiators, to apply globally				
Milestone 1.1.4.1 Socially disaggregated participatory methods tested for grounding climate change model results to community-level decision making processes that address food security issues (2014)	Methods tested and disseminated	CCAFS website	Cross-site and cross-continent applicability.	CIAT, Oxfam, CRS, Learning Alliance, Sustainable Food Lab, SAI
Milestone 1.1.4.2 Video testimonials produced on gender-specific farmer adaptation and mitigation strategies (including indigenous knowledge, coping mechanisms and current challenges) in 1-3 sites in each of the 3 initial target regions (2011, 2012)	Video testimonials produced and disseminated through the website	CCAFS website		

<b>Objective 1.2 Develop breeding strategies for addressing abiotic and biotic stresses induced by future climatic conditions, variability and extremes, including novel climates</b>				
<b>Outcome 1.2: Strategies for addressing abiotic and biotic stresses induced by future climate change, variability and extremes, including novel climates mainstreamed among the majority of the international research agencies who engage with CCAFS, and by national agencies in at least 12 countries</b>				
<b>Output 1.2.1 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 modelling, expert consultation and stakeholder dialogue</b>				
Milestone 1.2.1.1 Research and policy organizations actively engaged in setting research priorities; one regional breeding strategy workshop involving regional decision-making and priority setting bodies delivered in each of 3 initial target regions (2011)	Workshops held engaging 10-15 participants representing major regional and international breeding organizations and decision-making and priority setting bodies. List of research and policy organisations that have commented on, and contributed to, the research design	CCAFS website; workshop agendas and participant lists; documentation for annual reporting	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), donors, national governments
Milestone 1.2.1.2 Crop breeding institutions coordinated in development of climate-proofed crops for a 2030-2050 world; Document written jointly by CCAFS and crop breeding institutions outlining coordinated plans for breeding. (2012)	Plan document completed and disseminated	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, NARES), regional decision-making and priority-setting bodies (ASARECA, FARA, WECARD, SAARC), donors, national governments/National Biosecurity Agencies
Milestone 1.2.1.3 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 (2013)	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
Milestone 1.2.1.4 Detailed crop-by-crop strategies and plans of action for crop improvement developed, incorporating portfolio of national, regional and global priorities; findings presented in summary report (2015)	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	CG Centers, ARI modelling groups (e.g. Leeds University), NARES scientists

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Milestone 1.2.1.5 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 (2014)	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 1.2.1.6 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) (2015)	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
<b>Output 1.2.2</b> Breeding strategies disseminated to key national agencies and research partners				
Milestone 1.2.2.1 High-level meetings held with key stakeholders resulting in mainstreaming of new breeding strategies in work plans and existing breeding programs (2015)	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
Milestone 1.2.2.2 Global, regional and national policy briefs produced to guide best-value investments in climate-proofed crop breeding initiatives (2015)	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	Crop-breeding institutes (CG Centers, ARIs, NARES), regional decision-making and priority-setting bodies (ASARECA, FARA, WECARD, SAARC), donors, national governments
Milestone 1.2.2.3 (2015) One policy briefing meeting per region, based on the briefs in 1.2.2.2.	Attendance at meetings	Brief meeting report	Willingness of relevant organisations to attend	
<b>Output 1.2.3</b> Differential impact on different social groups of strategies for addressing abiotic and biotic stresses induced by future climate change, variability and extremes are identified, evaluated and disseminated				
Milestone 1.2.3.1 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 (2015)	Report completed and disseminated at 3 major international meetings; Report and policy briefs downloaded 200 times from web portal	CCAFS website; indigenous knowledge survey		

Objective 1.3 Identify and enhance deployment and conservation of species and genetic diversity for increased resilience and productivity under conditions resulting from climate change				
Outcome 1.3: Portfolio of information sources, guidelines and germplasm available for using genetic and species diversity to enhance adaptation and resilience to changing climate are adopted and up-scaled by national agencies in at least 20 countries and by international organization for the benefits of resource poor farmers				
Output 1.3.1 New knowledge, guidelines and access to germplasm are provided for using genetic and species diversity to enhance adaptation, productivity and resilience to changing climate				
<p>Milestone 1.3.1.1*Accessions identified with potential adaptive traits for climate change adaptation for at least 5 priority crops using innovative methods. 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 (2011, 2014)</p>	<p>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). Methodology developed and made publicly available</p>	<p>CCAFS website; journal publishers' websites</p>	<p>Adaptation traits easily identifiable and availability of sufficient data. Good Georeferenced data for accessions are available. Exchange of germplasm supported by participating countries. Sufficient data points and comparative conditions to compare the resilience of diversified as compared to simpler systems in the face of variable and changing conditions. 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. Genetic resources policy permits movement of germplasm to pilot sites</p>	<p>International Center for Tropical Agriculture (CIAT), Colombia; Institute of Biodiversity and Conservation, Ethiopia; National Agricultural Research Institute, Papua new Guinea (PNG); Institut d'Economie Rurale, Mali; Indian Council 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</p>
<p>Milestone 1.3.1.2*Approaches, methods and tools for participatory assessment of where and when biodiversity rich practices facilitate adaptation to climate change reviewed ; findings summarized in report (2011)</p>	<p>Consultation workshops; report completed and disseminated. number of communities and individuals surveyed, number of methods and tools tested</p>	<p>CCAFS website; documentation for annual reporting; workshop agendas and participant lists</p>		<p>International Union for Conservation of Nature (IUCN), Switzerland; PROINPA, Bolivia; LI-BIRD, Nepal; MS Swaminathan Research Foundation, India; German experts (incl. Prof. K. Hammer); FAO, the International Treaty on Plant Genetic resources for</p>

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				Food and Agriculture (ITPGRFA), Italy; University of Perugia, Italy; University of Basilicata, Italy; Regione Abruzzo and Regione Basilicata, Italy)
Milestone 1.3.1.3.*Evaluation of germplasm of cereals and food legumes for resistance to insect pests and diseases under variable temperature regime; strategy for targeted collection for sampling landraces and wild relatives in dry and hot areas (ICARDA) (2012)	Evaluation and strategy published	ICARDA website		
Milestone 1.3.1.4. Methods and tools for participatory monitoring of deployment of biodiversity and knowledge by communities for climate change adaptation tested out in at least 5 countries (including community surveys); findings synthesized in report (2012) Multi location trials of identified local varieties carried out (2014)	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 agricultural Research, India; LI-BIRD, Nepal; MS Swaminathan Research Foundation, India; PROINPA, Bolivia
Milestone 1.3.1.5. 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. (2013)	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 1.3.1.6. Assessment of the contribution of crop, livestock, fish diversity to climate change adaptation carried out; findings summarized in reports, case study narratives (2015)	Reports and case study narratives completed and disseminated	CCAFS website		Institute of Biodiversity and Conservation, Ethiopia; International Livestock Research Institute (ILRI ) Ethiopia (TBC)
Milestone 1.3.1.7 Climate change impact on key global commodities (major Musa groups, cocoa, coconut) and selected pest and diseases modelled and reviewed by commodity network country partners and possible response strategies identified (2015)	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; International Center for Tropical Agriculture (IITA), Nigeria; CIAT, Colombia; University of Western Australia; Queensland Department of Primary Industries, Australia; CacaoNet, COGENT (including participating countries by

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				region: LAC - Costa Rica, Brazil, Trinidad, Mexico; SSA - Cote d'Ivoire, Ghana, Nigeria, Cameroon, Tanzania; APO - India, Sri Lanka, Indonesia, Philippines, Malaysia), Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), France; IITA, Nigeria; CIAT, Colombia; Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), Costa Rica; South Pacific Commission (SPC), Fiji; United States Department of Agriculture (USDA), USA; University of Queensland, Australia; Reading University, UK; World Cocoa Foundation; APCC
<b>Output 1.3.2</b> New information, knowledge, guidelines and germplasm are made available to farmers, breeders, local communities and scientists and promoted through knowledge sharing, peer reviewed articles, information systems and media				
Milestone 1.3.2.1. Germplasm (wild and domesticated) with traits important for adapting to climate change 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 (2013)	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 agricultural Research, India; Millennium seed bank; BGCI; members of the Musa Taxonomy Advisory Group
Milestone 1.3.2.2. Farmers' traditional 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 (2013)	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 agricultural Research, India
Milestone 1.3.2.3. Research and development partners (especially 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 (2013)	Reports completed and disseminated; training materials developed and delivered	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



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				Resources Education (ANAFE), Kenya; Institut de Recherché et de Développement 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 1.3.2.4. Guidelines for enhanced seed systems to accelerate adaptation and for building up community-based participatory monitoring of conservation and use of agricultural biodiversity at community level in the IGP region and East Africa produced and disseminated (2013)	Guidelines developed and disseminated	CCAFS website		LI-BIRD, Nepal; MS Swaminathan Research Foundation, India; PROINPA, Bolivia
Milestone 1.3.2.5. Germplasm information integrated in global information systems including: (1) Databases of priority collections augmented with georeferenced passport data and trait information useful to the diversity analysis for climate change impacts and adaptation effectively linked to global system, (2) Accession level information with quality georeferences, (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, (6) 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 (2015)	Databases, accession information, data, training materials, lists developed and made publicly available. Databases of priority collections augmented with georeferenced passport data and trait information useful to the diversity analysis for climate change impacts and adaptation effectively linked to global system; accession level information with quality georeferences; data on duplication to global collection and important trait information published in GENESYS; complementary data sources on wild species identified through GBIF; training materials. List of and information on newly and already collected germplasm (domesticated and wild) adapted to climate change	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
<b>Output 1.3.3</b> Policies to enable access to and use of genetic resources for climate change adaptation research, and diffusion of adapted germplasm				
Milestone 1.3.3.1* Baseline survey and analysis of centers' and partners' acquisitions, and distributions of adapted germplasm carried out; Comparative survey and analysis conducted; findings summarized in reports (2011, 2014)	Reports completed and disseminated. Survey documents developed, Data collected Draft reports circulated or approval/comment Publication of reports	CCAFS website		CGIAR Centers; Institute of Biodiversity and Conservation, Ethiopia; National Agricultural Research Institute, PNG; Institut d'Economie Rurale, Mali; Indian Council Agricultural Research, India

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<p>Milestone 1.3.3.2*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) (2012)</p>	<p>Guidelines finalized and distributed to centers and partners</p>	<p>CCAFS website; documentation for annual reporting</p>	<p>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</p>	<p>CGIAR Centers; Semongok Agriculture Research Centre (ARC), Sarawak Malaysia; PROINPA, Bolivia</p>
<p>Milestone 1.3.3.3 Case studies documented of potential role of informal seed systems for diffusion of adapted germplasm; Analysis of institutions and policies that impact on the flow of adapted materials through those 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 to improve existing policies, local management and seed systems to facilitate diffusion and uptake of adapted germplasm (2013, 2015)</p>	<p>Case studies, analysis, national strategies and policy options developed and disseminated</p>	<p>CCAFS website</p>		<p>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 Agricultural Research, India</p>
<p>Milestone 1.3.3.4*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 and policy briefs developed for intergovernmental meetings including the CGRFA, ITPGRFA, CBD; journal article published on options to reform international policies to reflect increased interdependence of countries on GRFA as a result of climate change; Book published on assessing international policy options to support collective pooling and facilitated use of GRFA published (2011, 2013, 2015)</p>	<p>Papers, policy briefs, Journal article and book published</p>	<p>CCAFS website; Journal and book publishers' websites</p>		<p>CGIAR Centers; representatives of regional groups attending intergovernmental fora, secretariats of relevant international agreements</p>

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Milestone 1.3.3.5. 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 monitoring of livelihood and conservation strategies in target countries) (2015)	Policy paper completed and disseminated	CCAFS 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 Agricultural Research, India
<b>Output 1.3.4</b> Identification and evaluation of the differential roles of women and men, and other social groups, in strategies for conservation and use of species and genetic diversity; and the impact of those strategies on those different groups, are integrated into knowledge sharing and other activities to achieve outcomes				
Milestone 1.3.4.1. 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 (2013)	Technical reports, fact sheets 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
Milestone 1.3.4.2. 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 (2014)	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 1.3.4.3. Researchers and development agents trained on socially sensitive strategies for the conservation and use of local biodiversity within the climate change context (2014)	Trainings held engaging at least 20 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
Milestone 1.3.4.4. 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 (2015)	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 Agricultural Research, India

## Theme 2. Adaptation through Managing Climate Risk

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>Objective 2.1 Identify and test innovations that enable rural communities to better manage climate-related risk and build more resilient livelihoods</b>				
<b>Outcome 2.1: Systematic technical and policy support by development agencies for farm- to community-level agricultural risk management strategies and actions that buffer against climate shocks and enhance livelihood resilience in at least 20 countries</b>				
<b>Output 2.1.1</b> Synthesized knowledge and evidence on innovative risk management strategies that foster resilient rural livelihoods and sustain a food secure environment				
Milestone 2.1.1.1 Report of priority knowledge and methodology gaps produced for index-based risk transfer products; and Program value-addition and partnership strategy (2011)	Report and journal article completed and disseminated	CCAFS website; Journal publisher's website	Effective, equitable participation of 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	Key CG (ILRI, IFPRI, CIAT) and other organizations (e.g., WF, WB-CRMG, USAID BASIS CRSP) working on insurance for agriculture, 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 2.1.1.2 Synthesis report produced on options and approaches for reducing risk and enhancing livelihood resilience through cultivar, farm and livelihood diversification; modeling tool developed. *Documentation of how agro-pastoralists are coping with climate risk in West and Southern Africa, and piloting options as to how they may cope with increased climate risk in the future (ILRI) *Review of adaptation experiences and options in coastal and aquatic food production systems (WorldFish) * Characterization of climate-related risk, and survey of current formal and informal responses to risk with potential for transfer and up scaling; Upgrade to the ICARDA Agroclimate Tool (ICARDA) (2012)	One report and functional modeling tool completed and disseminated; Earthscan book chapters (WorldFish)	CCAFS website; Earthscan website	can be engaged in each region. Partners willing to share findings through platform. Will be replicated in other research locations as they are established in each region. Value addition to other index insurance initiatives; resource-poor farmers have access to index-based risk transfer products	Bioversity International & partners (TBD); ICRAF & partners (VI; CARE; RF; CAS; BMZ; ZALF; COMART); CIMMYT & partners (NARS in Ethiopia, Kenya, India, Bangladesh, Nepal; SIMLESA project, IRRRI; Cereal Systems Initiative for South Asia); * PIK, University of Kassel, IER (Mali), IIAM (Mozambique), IFPRI; USDA ARS Lubbock, NARS of Cyprus, Egypt, Ethiopia, Syria

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 2.1.1.3 Synthesis of ongoing work on agronomic and NRM technologies for enhancing resilience of agriculture to climate variability reported. *Historical records on rice yield losses compiled for droughts (India, Thailand) and cyclones/ typhoons (Bangladesh, Philippines) (IRRI) (2012)	Report completed and disseminated	CCAFS website		Multiple CG Centers TBD; NARES in India, Bangladesh, Thailand, and the Philippines
Milestone 2.1.1.4 Report produced characterizing climate-related risks to key crops and farming systems (2012)	Report completed and disseminated	CCAFS website		CIP & partners (NARIS in target countries, U. Missouri); ICRAF & partners (KARI; WB; GEF; PRESA; VAAS; ZALF; PIK; TMA); IRRI & partners (NARES in India, Bangladesh, Thailand, Philippines);
Milestone 2.1.1.5 Current strategies for managing climate-related risk in agriculture synthesized in a report and journal paper; *Tools and guidelines 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 (IWMI) (2012)	Report and journal article completed and disseminated	CCAFS website; Journal publisher's website		ILRI & partners (PIK, U. Kassel, IER (Mali), IIAM (Mozambique), IFPRI); CIMMYT & partners (IFPRI Global Futures Project, SIMLESA project (Africa) CSISA project (IGP), IITA, ICARDA, ICAR, EIAR, KARI, UMB-USA, UMB-Norway)* WRI- Ghana, PIK, ZEF, MRC
Milestone 2.1.1.6 Report produced and journal article published on institutions and economic incentives that would allow the poor to gain more access and to better manage water across uses, space and time in the IGP (2012)	Report and journal article completed and disseminated	CCAFS website		IFPRI & partners (Departments of fisheries, Fresh Water Fisheries Research Center, Chinese Academy of Fishery Science, Inland Consortium in Mali, Ministry of Fisheries in Vietnam)
<b>Output 2.1.2 Analytical framework and tools to target and evaluate risk management innovations for resilient rural livelihoods and improved food security</b>				
Milestone 2.1.2.1 Framework report produced and prototype farm household modeling tools developed for evaluating impacts of climate risk and risk management interventions on livelihood resilience (2011)	Framework report and prototype tools completed and disseminated	CCAFS website	Same as Output 2.1.1	Resilience Alliance, ILRI, CIP, WorldFish
Milestone 2.1.2.2 Analytical methodology and robust tools developed for evaluating impacts of climate risk and risk management interventions on rural livelihood resilience (2012)	Functional modeling tools completed and disseminated	CCAFS website		Household bioeconomic modeling expertise TBD

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 2.1.2.3 Methodology for incorporating technology, diversification, climate-informed adaptive management, financial risk transfer and safety net interventions into comprehensive agricultural risk management portfolios that target particular farming systems and contexts (2014)	Methodology embodied in tools, outlined in report and disseminated	CCAFS website		Household bioeconomic modeling expertise TBD, relevant NARES
<b>Output 2.1.3</b> Development; and demonstration of the feasibility, acceptability and impacts; of innovative risk management strategies and actions for rural communities				
Milestone 2.1.3.1 Participatory pilot demonstrations initiated to develop and evaluate current and improved risk management strategies and actions with rural communities at benchmark locations in 2 countries each in EA, WA and IGP (2011)	Pilot demonstration sites and partners in 6 countries	Monitoring and evaluation reports from demonstration sites; progress reviewed in annual reporting	Same as Output 2.1.1	Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations) to be developed for each benchmark location
Milestone 2.1.3.2 Current strategies and actions for managing climate-related risk documented for rural communities at benchmark locations in EA, WA and IGP (2011)	Documentation completed and disseminated	CCAFS website		Pilot demonstration project teams at benchmark locations; ILRI & partners (PIK, U. Kassel, IER (Mali), IIAM (Mozambique), IFPRI); CIMMYT & partners (IFPRI Global Futures Project, SIMLESA Project, CSISA project, IITA, ICARDA, ICAR, EIAR, KARI, UMB-USA, UMB-Norway), IRD-France
Milestone 2.1.3.3 Participatory pilot demonstrations to develop and evaluate current and improved risk management strategies with rural communities at benchmark locations initiated in 6 additional countries (2012)	Pilot demonstration sites and partners in 6 countries	M&E reports from demonstration sites & progress reviewed in annual reporting		Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations) to be developed for each benchmark location
Milestone 2.1.3.4 Participatory evaluation of risk management interventions at initial set of pilot demonstrations at benchmark locations in EA, WA and IGP presented in report and journal paper (2013)	Report completed and journal paper published and disseminated	CCAFS website; Journal publisher's website		Pilot demonstration project teams at benchmark locations; CIMMYT & partners (NARS: EIAR (Ethiopia), KARI (Kenya), SIMLESA project, ICAR (India), BARI (Bangladesh), Nepal Agric. Res. Council; IRRI, Cereal Systems Initiative for South Asia)
Milestone 2.1.3.5 Model-based evaluation of impact of risk management interventions on household livelihood resilience within pilot demonstrations in EA, WA and IGP presented in report and journal paper (2014)	Report completed and journal paper published and disseminated	CCAFS website; Journal publisher's website		Pilot demonstration project teams, relevant bioeconomic modeling expertise TBD

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 2.1.3.6 Participatory evaluation of risk management interventions at second set of participatory pilot demonstrations presented in report and journal paper (2015)	Report completed and journal paper published	CCAFS website; Journal publisher's website		Pilot demonstration project teams (NMS, NARS, other research partners, development NGOs, farmer associations) to be developed for each benchmark location
<b>Output 2.1.4</b> Tailor and disseminate research results for evidence-based policy and technical support for farm- to community-level risk management strategies				
Milestone 2.1.4.1 Knowledge-sharing platform developed with active participation of other relevant initiatives working on agricultural risk management (2012)	Electronic platform completed with engagement by minimum 50 participants from the agricultural R&D community	CCAFS website; results summarized in annual reporting	Same as Output 2.1.1	Knowledge sharing expertise TBD
Milestone 2.1.4.2 Web-based platform to synthesize and exchange information about farmers' strategies for managing climate-related agricultural risk, closely coordinated or combined with platform developed in Theme 1 (2013)	Web-based platform publicly available	CCAFS website		Knowledge sharing expertise TBD
Milestone 2.1.4.3 Policy-oriented workshop delivered and summary report produced on scaling up pilot participatory action research activities and partnerships (2013)	Workshop held; 12-15 participants from NARS and agricultural development organizations; summary report completed and disseminated	Workshop agenda and participant lists; CCAFS website		Pilot demonstration project teams, others TBD
Milestone 2.1.4.4 Curriculum developed on targeting and evaluating comprehensive agricultural risk management strategies for rural communities (2015)	Curriculum completed, tested and disseminated	CCAFS website		Training and bioeconomic modeling expertise TBD
<b>Output 2.1.5</b> Identify and evaluate differential impact of agricultural risk management strategies on different social groups, particularly women and men, and communicate findings through technical and policy support activities				
Milestone 2.1.5.1 Guidelines developed for ensuring equitable participation of women and other socially disadvantaged groups in participatory action research on climate-related risk management. (2011)	Guidelines completed and disseminated	CCAFS website	Same as Output 2.1.1	Gender expertise TBD through competitive call
Milestone 2.1.5.2 Summary report of gender and social differentiation of current risk management strategies and access to associated information and services at benchmark locations in 2 countries each in EA, WA and IGP (2013)	Report completed and disseminated	CCAFS website		Gender consultant TBD; Pilot demonstration project teams for each benchmark location
Milestone 2.1.5.3 *Assessment framework to understand gender differences in climate risk perception, aversion and their influence on risk management (2015)	Framework completed and disseminated	CCAFS website		WorldFish & partners (Bangladesh Agric. U., Bangladesh Dep't. Fisheries, Integrated Coastal and Fisheries Governance, (ICFG) Project for Western Region of Ghana, Institut d'Economie Rurale Mali)

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>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</b>				
<b>Outcome 2.2: Better climate-informed management by key international, regional and national agencies of food crisis response, post-crisis recovery, and food trade and delivery in at least 12 countries</b>				
<b>Output 2.2.1</b> Enhanced knowledge of impacts of climate fluctuations on food security, and how to use advance information to best manage climate-related risk through food delivery, trade, crisis response and post-crisis recovery				
Milestone 2.2.1.1 Report and journal article on impacts of climate variability on components (e.g., production, prices, rural incomes, consumption, trade, humanitarian assistance) of food security; and review of policies to mediate impacts in EA, WA and IGP (2011)	Report completed and journal paper published and disseminated	CCAFS website; Journal publisher's website	Capable food security and trade organizations available to participate. Adequate market, climate and livelihood data are available	TBD through competitive call
Milestone 2.2.1.2 Analysis of drivers and impacts of food price volatility reported for 2 countries each in EA, WA, and IGP (2012)	One report for each CCAFS region (3) completed and disseminated	CCAFS website		TBD through competitive call
Milestone 2.2.1.3. Food security organizations engaged to explore and develop new response strategies based on long-lead prediction (2012)	Network of food security response organizations (3-5) in each CCAFS region (3)	Feedback from engaged organizations documented in annual reporting		Key food security (WFP, FAO, CARE, FEWSNet) and trade organizations, locally-relevant actors in food trade and crisis response, Tufts U.
<b>Output 2.2.2</b> Synthesized knowledge and evidence of the impacts of alternative risk management interventions within the food system on food security and rural livelihoods, to inform policy and practice				
Milestone 2.2.2.1 Report and policy brief on the costs associated with timing and targeting of alternative food crisis interventions (2011)	Report and policy brief completed and disseminated	CCAFS website	Same as Output 2.2.1	WFP, IRI
Milestone 2.2.2.2 Policy brief synthesizing state of knowledge on policy approaches for managing food crises and price volatility for key staple crops in EA, WA and IGP (2012)	Report completed and disseminated	CCAFS website		CIMMYT & partners (IFPRI Global Futures Project, SIMLESA Project, CSISA project, IITA, ICARDA, ICAR, EIAR, KARI, UMB-USA, UMB-Norway)
Milestone 2.2.2.3 Three response strategies tested and evaluated with partner crisis response organizations in selected areas in each CCAFS region; summarized in project report (2013)	3 response strategies tested in each CCAFS region; summary report completed and disseminated	Feedback from engaged organizations documented in annual reporting		Key food security response organizations TBD
Milestone 2.2.2.4 Report produced synthesizing evidence of impacts of national to regional-level food security and food market interventions on household-level food security and livelihoods, and on incentives for local agricultural market development, presented to relevant line ministries and international agencies working on food security in 6 CCAFS countries (2013)	Report completed and shared with target audiences	CCAFS website; feedback from engaged ministries and organizations documented in annual reporting		TBD through competitive call



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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>Output 2.2.3</b> Platform and tools for sharing knowledge and fostering improved coordination among food crisis response, the market-based food delivery system, and agricultural research and development				
Milestone 2.2.3.1 Report and policy brief of an international food system stakeholder consultation to develop a collaborative strategy for improving intervention, coordination, capacity to respond to improved climate-related information (2011)	Report completed and disseminated	CCAFS website	Same as Output 2.2.1	Relevant international food security early warning and response organizations, Tufts U.
Milestone 2.2.3.2 Study and stakeholder consultation on regional agricultural and food security contingency planning processes, current and potential use of climate-related information, and strategy for improving planning and coordination in EA, WA and IGP (2011)	3 workshops each engaging at least 10 participants; Study report completed and disseminated.	CCAFS website		Relevant regional and national food security, food trade, climate information, early warning and agricultural planning organizations
Milestone 2.2.3.3 Knowledge-sharing platform to foster partner engagement and coordination among actors on key issues/problems related to crisis response, food delivery, and agricultural R&D (2012)	Electronic platform completed with engagement by minimum 50 participants from the crisis response, food delivery, and agricultural R&D communities	CCAFS website; correspondence archived and summarized for annual reporting		Knowledge sharing expertise TBD
Milestone 2.2.3.4 Workshops held in two focus regions to develop a consensus roadmap for enhancing coordinated response of food delivery, trade, and crisis and post-crisis management, to climate fluctuations; strategy for maintenance of electronic platform developed (2014)	2 workshops held each with participation by at least six organizations; report on sustainability strategy completed and disseminated	CCAFS website		Relevant regional and national food security, food trade, climate information, early warning and agricultural planning organizations
<b>Output 2.2.4</b> Identify and evaluate differential impact of tools and strategies for climate risk management on different social groups, particularly women and men, and inject findings into support to agencies				
Milestone 2.2.4.1 Review paper produced on food security, social differentiation, and climate risk management with policy advice on how to enable equitable access for different social groups (2013)	Report completed and disseminated	CCAFS website	Same as output 2.2.1	TBD through competitive call

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 climate information tools and products to support management of agricultural and food security risk				
Milestone 2.3.1.1 Historic gridded daily rainfall dataset, combining observations and satellite images, developed and evaluated for 1 country each in EA and WA (2011)	Dataset for 2 countries completed and disseminated; evaluation report completed and disseminated	CCAFS website; results presented in annual reporting	Review will identify suitable opportunities to enhance early warning and management of strategic climate-sensitive biological threats. Institutional and technological capacity is sufficient to support widespread delivery of climate services. NMS and regional climate centers participate and share data.	U. Reading (TAMSAT), IRI, AGRHYMET, Ethiopia Nat'l Met. Authority
Milestone 2.3.1.2 Prototype seasonal forecast information products tailored and evaluated for local agricultural decision-making in 2 countries each in EA, WA (2011)	Tailored products developed for benchmark locations in 2 countries and made publicly available	CCAFS website; results presented in annual reporting	Full set of METEOSAT images processed and available. Availability of data.	Senegal Met. Authority, AGRHYMET, ACMAD, IRI, CEREGE, ICRISAT & partners (Zimbabwe Met. Dep., AGRITEX, NGOs)
Milestone 2.3.1.3 Historic gridded daily data set of meteorological variables required for agricultural modeling applications, developed, calibrated and evaluated in 1 country each in EA and WA (2012)	Dataset completed and evaluated for 2 countries and disseminated	CCAFS website; results presented in annual reporting	Participatory evaluation (under Objectives 1 and 2) will identify demand, relevant uses for climate-related information.	TBD through competitive call, relevant NMS
Milestone 2.3.1.4 System developed for downscaling seasonal forecast products onto gridded daily meteorological dataset for local agricultural decision-making in EA, WA (2014)	Tools and methodology made available for use by NMS and regional climate centers	Feedback from decision-makers documented in annual reporting	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	ACMAD, AGRHYMET, IRI, CEREGE
Output 2.3.2 Synthesized knowledge and evidence on institutional arrangements and processes for enhancing climate services for agriculture and food security				
Milestone 2.3.2.1 Report and journal article produced on synthesis and program strategy for needs, constraints and opportunities for enhancing climate services, and institutional and ICT-based information delivery	Report completed and journal paper published	CCAFS website; Journal publisher's website	Same as Output 2.3.1	ACMAD, IGP consultants, IRI

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mechanisms for agricultural risk management (2011)				
Milestone 2.3.2.2 Prototype climate information delivery mechanisms demonstrated and evaluated with rural communities at 2 benchmark locations each in EA, WA and IGP (2012)	Demonstration in 2 benchmark locations	Monitoring and evaluation reports from demonstration sites; progress reviewed in annual reporting		ICT partners, pilot demonstration project teams (NMS, NARS, NGOs, farmer association, research partners) to be developed for each benchmark location
Milestone 2.3.2.3 Protocols for communicating probabilistic climate forecast and early warning information demonstrated, refined and evaluated with rural communities at 2 benchmark locations each in EA, WA and IGP (2012)	Demonstration in 2 benchmark locations	Monitoring and evaluation reports from demonstration sites; progress reviewed in annual reporting		Pilot demonstration project teams for each benchmark location, IRI, ICRISAT, Emory U.
<b>Output 2.3.3</b> Improved knowledge, tools, data sets and platforms for monitoring and predicting agricultural production and biological threats, and informing management, in response to climate fluctuations				
Milestone 2.3.3.1 Proof-of-concept on remote sensing data assimilation for crop and rangeland production forecasting reported (2011)	Report completed and disseminated	CCAFS website	Same as Output 2.3.1	NASA-JPL, IRI, ICRISAT, IER (Mali)
Milestone 2.3.3.2 Predictability of crop production and prices from climate information in the IGP reported (2011)	Report completed and disseminated	CCAFS website		BARC, NARC, ICAR
Milestone 2.3.3.3 Synthesis report on climate-sensitive pest and disease modeling and early warning systems for agricultural and food security risk management (2011)	Report completed and disseminated	CCAFS website		Kansas State U.
Milestone 2.3.3.4 Crop and rangeland production forecasting platform, documentation and training materials developed (2013)	Electronic platform publicly available; summary document and training materials completed and disseminated	CCAFS website		FAO, JRC, ILRI, IRI, other partners TBD
Milestone 2.3.3.5 Report and journal article on accuracy and lead time of improved crop forecasting methods (2013)	Report completed and journal paper published	CCAFS website; Journal publisher's website		NARS, NMS in relevant country; FAO, JRC, IRI, other partners TBD
Milestone 2.3.3.6* Early warning systems developed for 2 major biological threats to agriculture (2013)	Early warning systems operational in 2 regions, in cooperation with 6 partner organizations	Results presented in annual reporting		CIP & partners (EMBRAPA, MP3-RTB, IITA, ICIPE-International Centre for Insect Physiology and Ecology); Others TBD through competitive call
<b>Output 2.3.4</b> Enhanced capacity of national and regional climate information providers, NARES and communication intermediaries to design and deliver climate information products and services for agriculture and food security management				
Milestone 2.3.4.1 Training and facilitation for NMS to develop and evaluate daily gridded historic rainfall data from station observations and satellite products upscaled in EA and WA (2012)	2 trainings, each delivered to 8-12 participants each	Training participant lists; Results documented in annual reporting	Same as Output 2.3.1	NMS, WMO, U. Reading, IRI

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Milestone 2.3.4.2 Training and facilitation to develop and evaluate daily gridded historic temperature from station observations and proxies in EA and WA (2012)	2 trainings, each delivered to 8-12 participants	Training participant lists; Results documented in annual reporting		NMS, WMO, research partners TBD through competitive call
Milestone 2.3.4.3 Tools and curriculum for meteorologists to produce downscaled seasonal forecast products tailored to needs of local agricultural decision-makers (2012)	Tools publicly available; Curriculum delivered to at least 2 organizations each in 3 regions	CCAFS website; Results documented in annual reporting		Training expertise TBD, ACMAD, AGRHYMET, IRI, CEREGE
Milestone 2.3.4.4 NMS, regional climate centers trained and equipped to produce downscaled seasonal forecast products for rural communities in 2 countries each in WA, EA and IGP (2013)	3 trainings delivered to 6-10 participants each	Training participant lists; Results documented in annual reporting		ACMAD, AGRHYMET, ICPAC, IRI, CEREGE
Milestone 2.3.4.5 Curriculum to train intermediaries to communicate probabilistic climate information with rural communities (2013)	6 trainings delivered to 12-15 participants each	Training participant lists; Results documented in annual reporting		Training and communication expertise TBD through competitive call
Milestone 2.3.4.6 Improved crop forecasting methodology incorporated into operational system in 2 countries (2014)	Methodology implemented in 2 national or regional operational crop forecasting systems	Review of inputs into regional forecasting system		National partners (NMS, NARS), ACMAD, AGRHYMET, CIRAD, FAO, others TBD
Milestone 2.3.4.7 Roadmap for improving climate information services for agriculture and food security in three initial target regions (2014)	Workshop and report completed for 3 regions and disseminated	CCAFS website		Regional climate centers, relevant national partners (NMA, farmer associations, NARES, food security planning, ICT4D), WMO, IRI
<b>Output 2.3.5 Identify and evaluate differential impact of climate information services on different social groups, particularly women and men, and inject findings into support to farmers</b>				
Milestone 2.3.5.1 Summary report on gender and social equity of climate information sources and delivery mechanisms and policy advice to enable equitable access (2012)	Report completed and disseminated	CCAFS website	Same as Output 2.3.1	Gender and communication expertise TBD
Milestone 2.3.5.2 Demonstration and evaluation of gender- and socially-equitable climate service delivery at 2 benchmark locations each in EA, WA, IGP (2013)	6 demonstrations in benchmark locations	Results documented in annual reporting		Pilot demonstration project teams for each benchmark location
Milestone 2.3.5.3 Curriculum developed for intermediaries on overcoming gender and social inequities in communicating climate information (2014)	Curriculum completed and disseminated	CCAFS website		Training and gender expertise TBD through competitive call

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

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>Objective 3.1 Inform decision makers about the impacts of alternative agricultural development pathways</b>				
<b>Outcome 3.1: Enhanced knowledge about agricultural development pathways that lead to better decisions for climate mitigation, poverty alleviation, food security and environmental health, used by national agencies in at least 20 countries</b>				
<b>Output 3.1.1</b> Analysis of agricultural development pathways and the trade-offs among mitigation, poverty alleviation, food security and environmental health				
Milestone 3.1.1.1 Report on potential emissions reductions from technical options compatible with maintaining food supply (2011)	Report completed and disseminated	CCAFS website	Agricultural intensification will be necessary to meet future food demand. Mitigation will be possible among resource-poor farmers. Preliminary data ready from PhD network (Objective 2)	Winrock, Applied Geosolutions, BIDS, BCAS
Milestone 3.1.1.2*Report on potential emissions reductions from technical options compatible with maintaining food supply under alternative intensification scenarios. (2011)	Report completed and disseminated	CCAFS website		IFPRI, NARS in Ghana, Senegal, Mali, Uganda, Kenya, India, Nepal, Bangladesh
Milestone 3.1.1.3 Report on mitigation implications of alternative adaptation strategies (2013)	Report completed and disseminated	CCAFS website		Tender (NARS in Kenya, Ethiopia, Ghana, Senegal, Bangladesh, India, ASARECA, CORAF, Centre de Suivi Ecologique (CSE))
Milestone 3.1.1.4. Synthesis report and scientific article on transformative agricultural development pathways (2013)	Report and journal article completed and disseminated	CCAFS website		Winrock, Applied Geosolutions, BIDS, BCAS, Terrestrial Carbon Group, National agricultural research institutes
Milestone 3.1.1.5. Assessment report on regional and national agricultural development policies, mitigation policies and mitigation projects and their implications for mitigation, poverty alleviation and food security (2011)	Assessment report completed and disseminated	CCAFS website		ECOWAS, UEMOA, CILSS, CORAF, ASARECA, South Asia (TBC)
<b>Output 3.1.2</b> Enhanced tools, data and analytic capacity in regional and national policy and research organizations to analyze the implications of different development scenarios and mitigation strategies				
Milestone 3.1.2.1 *Framework for comparison of environmental footprint of agricultural systems (ILRI) (2011)	Framework completed and disseminated	CCAFS website	Same as Output 3.1.1	TBC

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 3.1.2.2 *Synthesis reports on sectoral mitigation potentials and emissions factors for IPCC and national and regional bodies covering: (i) cereal-based intensive agriculture (CIMMYT); (ii) livestock, analyzed by country (ILRI); (iii) aquaculture sector, analyzed through supply chain (WorldFish)(2012)	Synthesis reports completed and disseminated, database available	CCAFS website, database on CCAFS or partner website		IFPRI (Global Futures Project), SIMLESA Project (Africa) CSISA project (IGP-Asia), IITA, ICARDA, ICAR, EIAR, KARI, UMB-USA, UMB-Norway, IIAA, FAO
Milestone 3.1.2.3 *Options for mitigation in each sector identified and shared with policy makers, researchers and actors in the sector through consultations, workshop, analysis and syntheses (2013)	Consultations provided to 50 individuals. 3 workshops engage 100 participants.	CCAFS website; workshop agendas and participant lists; documentation for annual reporting		TBC, CARE, OXFAM
Milestone 3.1.2.4 Capacity building of 300 decision makers in use of appropriate tools and data in three initial regions (2012)	300 decision makers trained using tools	Monitoring and evaluation reports		START, WOCAN, FAO
Milestone 3.1.2.5 Cross-sectoral synthesis report and policy briefs completed and shared in major global fora on climate change and food security (2013)	Report and policy briefs disseminated at 3 major international meetings. Report and policy briefs downloaded 200 times from web	meeting agendas, web portal statistics		TBC (scenario experts and NARS)
<b>Output 3.1.3 Analysis of the gender and social differentiation implications of alternative agricultural pathways and findings built into communications and capacity building activities</b>				
Milestone 3.1.3.1 Global expert workshop on the impacts of alternative mitigation scenarios on women and marginalized farmers (2012)	Workshop held; 12-15 participants representing major regional and international organizations dealing with gender issues	workshop agenda; feedback from participants documented in annual reporting	Same as Output 3.1.1	FAO, WOCAN, ICRW
Milestone 3.1.3.2 Synthesis report on the impacts of alternative agricultural development scenarios on women and marginalized farmers (2013)	Synthesis report completed and disseminated	CCAFS website		FAO, WOCAN, ICRW
Milestone 3.1.3.3 Findings on differential impact incorporated in global forums, capacity building events and websites (2013)	Synthesis report disseminated at 3 major international meetings and included in at least 1 capacity building event in each region. Report downloaded 200 times from web portal	meeting agendas, M and E reports, web portal statistics		FAO, WOCAN, ICRW

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 3.2.1.1 Reviews of promising incentives, institutions, market-based mechanisms and policies at project and national scales, in three initial target regions, including (i) carbon as co-benefit to more productive agricultural practices, (ii) carbon markets, (iii) corporate social responsibility technical assistance, (iv) carbon labelling, summarized in four articles, policy briefs and posted on webpage (2011)	4 policy briefs and scientific articles completed and disseminated. Webpage developed.	CCAFS website; Journal publisher's website	Carbon market participation and potential benefits will be uneven among regions and farmers. Likely positive benefits of conservation agriculture for mitigation. Resource-poor farmers will participate in carbon markets if incentives are sufficient. Investors see agriculture-based markets as profitable. Institutional arrangements, market-based instruments, policies and incentives exist and have had sufficient experience to show results	FAO, World Bank, BRAC, Pradan, Nature Conservation Research Centre, IIED, IFPRI, ICRA, EcoAgriculture Partners, Ecotrust, Sustainable Food Lab, Unilever, Vi Agroforestry, World Bank, and NARS
Milestone 3.2.1.2 Experts workshop to identify the design and monitoring requirements of finance and institutional arrangements to better benefit poor farmers and women (2011)	Workshop held; 12-15 participants representing major international and regional organizations dealing with gender issues; Expert consultation completed and summarized; report disseminated	CCAFS website		CarbonBenefits, FAO, Vi Agroforestry, CARE, Ecotrust, EcoAgriculture, World Bank, IIED, CLUA, NARS
Milestone 3.2.1.3 *In-depth analysis of the economic incentives and benefits to farmers for integrated practices (conservation agriculture, sustainable land management, and agroforestry) in three initial target regions, linked to Milestone 3.3.1.1 and 3.3.2.2(CIMMYT, IFPRI) (2012)	Journal article completed and disseminated	CCAFS website; Journal publisher's website		IFPRI (Global Futures Project), SIMLESA Project (Africa) CSISA project (IGP-Asia), IITA, ICARDA, ICAR, EIAR, KARI, UMB-USA, UMB-Norway
Milestone 3.2.1.4 *Innovative institutional arrangements and incentive mechanisms developed and tested for 1000 smallholders in 9 benchmark sites, (together with testing of MRV methods in 3.3.2.2.) (ICRAF), (2013)	Contracts with 1000 farmers, summary document completed and disseminated; webpage developed; 1 workshop per CCAFS region	CCAFS website		Local research partners in benchmark site countries, Vi, CARE, TIST, Mali/Guinea/Asia partners

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Milestone 3.2.1.5 *Synthesis report of underlying factors affecting sustainable land management across case study countries (including Kyrgyzstan, Nigeria, Mali, Southern Africa) with attention to gender issues, distribution of assets, and land markets (IFPRI) (2012)	Synthesis report completed and disseminated	CCAFS website+F11		INERA, CG Centers, Kyrgys Research Institute of Agriculture, SOFESCA, IER (Mali), PAC, NFDO, GRADE, NARO
<b>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</b>				
Milestone 3.2.2.1 Decision-makers in target regions better informed re options and policy choices for incentivizing and rewarding smallholders for GHG emission reductions (2013)	Consultations with 30 decision-makers across target regions	Workshop participation lists	Same as Output 3.2.1	Gov't agencies, University networks (RUFORUM, ANAFE, SCARDA)
Milestone 3.2.2.2 *Publication, story and films showcasing barriers to entry and factors affecting access to the carbon market for differentiated social groups, including women and the range of emerging institutional arrangements and incentives for better inclusion and benefits (ICRAF) (2012)	Publication, story and films completed with Vi, CARE, TIST	Publication, story and films on website with Vi, CARE, TIST		Vi, CARE, TIST, CarbonBenefits, FAO, Vi Agroforestry, CARE, Ecotrust, EcoAgriculture, World Bank, IIED, CLUA, NARS
Milestone 3.2.2.3 Training for project implementers on designing finance and institutional arrangements and safeguards specifically to benefit poor farmers and women (2013)	Workshops provide training to 50 individuals per CCAFS region (3)	Workshop participation lists		CarbonBenefits, FAO, Vi Agroforestry, CARE, Ecotrust, EcoAgriculture, World Bank, IIED, CLUA, NARS



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				
<p>Milestone 3.3.1.1 *Assessment of feasibility and impacts of mitigation practices for (i) conservation agriculture and sustainable land management (CIMMYT, IFPRI) in rice-wheat and maize-legume systems in 3 target regions, (ii) rice production through improved irrigation and fertilizer management (IRRI), (iii) dryland cropping systems (ICRISAT), (iv) agroforestry and complex agro-ecosystems (ICRAF), (v) livestock (ILRI), (vi) potatoes and sweet potatoes (CIP), (vii) N<sub>2</sub>O emissions from land use change and peatland conversion to plantation agriculture in 3 target regions of SE Asia (CIFOR), (viii) charcoal as energy alternative (ICRAF) (2012)</p>	<p>Multi-year farm trials, datasets, 7 scientific articles, 7 policy briefs and dissemination</p>	<p>CCAFS and partners websites; journal website</p>	<p>Interest and willingness of partners to contribute findings to platform. Simple methods can be devised for widespread application. Improved carbon balances are possible in these food systems. Strong participation from all partners. Cost effective measures and MRV are possible. Sufficient data exists to validate simulation models. Practices that increase mitigation, livelihood benefits and environmental benefits are possible. Uptake of guidelines</p>	<p>NARES in India, Indonesia, Vietnam, and Philippines, ARI in Japan, Germany, USA, Australia; WWF; UNEP; MSU; CSU; CORNELL, VI Agroforestry; RF; CCAFS; CARE, IIASA, FAO, Ethiopian Institute of Agricultural Research (EIAR); Kenyan Agricultural Research Institute (KARI); Sustainable Intensification on Maize-Legume Systems in Eastern and Southern Africa (SIMLESA) project; Rutgers University, Indian Council for Agricultural Research (ICAR); Bangladesh Agricultural Research Institute (BARI); Nepal Agricultural Research Council; IRRI; Cereal Systems Initiative for South Asia (CSISA); Instituto Nacional de Investigación Forestal, Agrícola y Pecuaria, INERA, CG Centers, Kyrgyz Research Institute of Agriculture, SOFESCA, IER (Mali), PAC, NFDO, GRADE, NARO, JKUA; DENR; UPLB; COMART, IFPRI (Global Futures Project), SIMLESA Project (Africa) CSISA project (IGP-Asia), IITA, ICARDA, ICAR, EIAR, UMB-USA, UMB-Norway, African Conservation Tillage Network (ACT), Global Research Alliance</p>

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<b>Output 3.3.2</b> Methods developed and validated for GHG monitoring and accounting at farm and landscape level to contribute to compliance and voluntary market standards				
Milestone 3.3.2.1 Expert and stakeholder consultations on methods appropriate for smallholder farmers through one global workshop and workshops in each of the 3 initial target regions (2011)	Workshops engage 25 participants each. Consultations completed and summarized.	workshop agendas and participant lists; CCAFS website	Same as Output 3.3.1	U. of Aberdeen, Sustainable Food Lab, X-AGG, Duke University, CORAF, ASARECA, RWC, Global Research Alliance
Milestone 3.3.2.2 *Data and methods for carbon measurement and monitoring for integrated agricultural systems (complex landscapes, integrated agriculture, forestry and aquaculture, rangeland and livestock) (ICRAF, WorldFish, ICARDA, ILRI); includes equipment validation for soil carbon field assessments (CIP) (2013)	Data, methodologies, tools and guidelines shared through websites, policy briefs and scientific article	CCAFS website; Journal publisher's website		WWF; UNEP; MSU; CSU, Embrapa, Centre of Excellence on Environmental strategy for GREEN business (VGREEN-KU) Kasetsart University, Thailand; ARIs, NARS and universities in the CWANA region, Global Research Alliance, , Princeton University, German Marshall Fund
Milestone 3.3.2.3 Field research initiated at benchmark sites to assess trade-offs for different sectors of agricultural mitigation (livestock, soil carbon, agroforestry) based on biophysical and livelihood outcomes (2012)	Field trials in operation in 10 CCAFS benchmark sites across 3 initial target regions	Benchmark sites M and E reports		Partners at CCAFS benchmark sites
Milestone 3.3.2.4 Network of PhD students launched for studying GHGs in developing country agriculture to test methods and develop further innovations, linked to Milestone 3.3.2.2 and 3.3.2.3 (2011)	20 PhD students engaged in network per CCAFS region	M and E reports of research network		Copenhagen University, ASARECA, CORAF
Milestone 3.3.2.5 *Assessment reports on technical and institutional capacity for national-level measurement and monitoring in 3 target countries (CIFOR) (2012)	Assessment reports completed and disseminated	CCAFS website		CIFOR and NARS
Milestone 3.3.2.6 *Scientific papers and report on issues in estimating and managing carbon stocks in rural landscapes through participatory, community-based monitoring (CIFOR) (2012)	Report completed and journal articles published and disseminated	CCAFS website; Journal publisher's website		CIFOR and NARS
Milestone 3.3.2.7 *Training material and online tutorials on estimating and managing carbon stock provided in three target countries (CIFOR) (2013)	Training material completed and disseminated; online tutorial publicly available	CCAFS website		CIFOR and NARS
Milestone 3.3.2.8 Project design and monitoring guidelines for smallholder agriculture in developing countries produced and contributing to global standards (2013)	Guidelines completed and disseminated	CCAFS website		CIFOR, VCS, ACR, CAR
Milestone 3.3.2.9 Workshop with standard-setting bodies (VCS, ACR, etc) to share methods synthesis guidelines for smallholder agriculture in developing countries (2013)	Workshop engages representatives of 5 major offset markets	workshop participant lists		X-AGG, VCS, CCBA, Rainforest Alliance, Unilever

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<b>Output 3.3.3</b> Synthesis of understanding about the direct and indirect economic and environmental costs and benefits from agricultural mitigation				
Milestone 3.3.3.1 Analysis and report on direct and indirect economic and environmental costs and benefits from agricultural mitigation (2013)	Workshop and synthesis report completed and disseminated	CCAFS website	Same as Output 3.3.1	see 3.3.2.1, 3.3.2.2, 3.3.2.3
Milestone 3.3.3.2 Web-based communications platform and clearinghouse launched identifying mitigation impacts of on-farm practices and their landscape-level implications (2013)	Platform and clearinghouse developed and made publicly available	CCAFS website		FAO, University of Kansas, Global Research Alliance
Milestone 3.3.3.3 Workshop for national agencies to review mitigation options and their impacts (2013)	50 national agency personnel engaged in 1 workshops per CCAFS region	Workshop participant lists		FAO, Global Research Alliance
<b>Output 3.3.4</b> Analysis of impacts of on-farm and landscape level practices on women and poor farmers				
Milestone 3.3.4.1 Research report on D38 (2013)	Report completed and disseminated	CCAFS website		Research partners in benchmark site countries and U Michigan

## Theme 4. Integration for Decision Making

MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>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</b>				
<b>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</b>				
<b>Output 4.1.1</b> For each region, coherent and plausible futures scenarios to 2030 and looking out to 2050 that examine potential development outcomes under a changing climate and assumptions of differing pathways of economic development; developed for the first time in a participative manner with a diverse team of regional stakeholders				
Milestone 4.1.1.1 Capacity built among three regional teams of diverse stakeholders trained in scenarios approaches and engaging with policymakers in their countries/regions and in global CC processes and with the ESSP community; Methodological briefs, papers (2011)	Regional scenarios partners actively participating in regional food security debates and global CC processes (e.g. UNFCCC negotiations and COP). Number of partners using/citing scenarios; No. of regional partners trained in scenarios participating in regional FS debates and global CC processes	CCAFS and partner websites and reports; Newspaper and other media reports	Partners remain engaged and help communicate scenario research results widely and to inform key decision makers	Regional Ag Research Orgs (incl. NARS): ASARECA (EA); CORAF, AMCEN (WA); RWC (IGP); Regional policy orgs: NEPAD, CAADP; Int'l NGOs: CARE Int'l; Oxfam; Regional NGOs: Ecotrust (EA); SahelEco, AMEDD (WA); CEAPRED & FPRO (IGP); Private Sector: Katoomba Grp (EA); Technico Pty Limited (IGP); Farmers Orgs: EAFF (EA); ROPPA (WA), IFAP (Int'l); Regional Meteo Orgs: ACMAD, AGRHYMET, ICPAC
Milestone 4.1.1.2 Three sets of prototype regional scenarios produced (main regional uncertainties identified, initial regional storylines developed, reports and initial scoping for model analysis). Article on effectiveness of scenarios as a 'boundary object' (2011)	Scenarios reports for EA, WA and IGP available on CCAFS and partners websites; Local media reports from each region	CCAFS website; Newspaper and other media reports	Local media find futures scenarios worthy of reporting; local and regional partners actively participate	Regional Ag Research Orgs (incl. NARS): ASARECA (EA); CORAF (WA); RWC (IGP); Regional policy orgs: NEPAD, CAADP; Int'l NGOs: CARE Int'l; Oxfam; Regional NGOs: Ecotrust (EA); SahelEco, AMEDD (WA); CEAPRED & FPRO (IGP); Private Sector: Katoomba Grp (EA); Technico Pty Limited (IGP); Farmers Orgs: EAFF (EA); ROPPA (WA), IFAP (Int'l); Regional Meteo Orgs: ACMAD, AGRHYMET, ICPAC
Milestone 4.1.1.3 Larger public in the three CCAFS regions made aware of climate change and regional food security realities through communication efforts associated with scenarios (2012)	Development of a radio drama, newspaper articles, and brochures	Radio stations relay the drama	Local media find futures scenarios worthy of reporting; local and regional partners actively participate	CCAFS, Panos

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<b>Output 4.1.2</b> Global and regional maps, tables and associated syntheses, showing current vulnerable agricultural and fishing populations in relation to food security to 2030 and 2050				
Milestone 4.1.2.1 Vulnerability assessment and maps from the three CCAFS regions published and widely disseminated in a paper, policy briefs, conference presentations, workshops, web materials, media stories, inputs to the ag work program/ UNFCCC negotiations, global and regional CC conferences (e.g. COP), contributing to strengthening regional climate and agricultural knowledge platforms/networks and improved CCAFS-related science-user information flows (2012-2013)	Rural ag and fishery community concerns included in UNFCCC negotiations. New regional CCAFS-related working groups and gov't units created in at least 3 regions. CCAFS outputs cited by partners at national, and regional levels. Number of downloads and requests from regional partners for CCAFS products. Number of partners/events in the 3 regions applying processes, tools, approaches bringing together CC-Ag-FS communities in dialogue; number of new projects/programs following these approaches	CCAFS website; Newspaper and other media reports. Partner reports citing CCAFS; presentations and media coverage at ARDD and Ocean Days at COP	Incentives against new interdisciplinary-cross gov't dep't CCAFS-oriented groups aren't too strong.	FANRPAN; START; Africa Acpat; WeAdapt; JotoAfrica; ICAR; BARC; NARC; CAN; CDKN; Harvard Sust. Science program; ICRAF
<b>Output 4.1.3</b> Evidence on, testing and communication of, successful strategies, approaches, policies, and investments contributing to improved science-informed CC-ag development-food security policies and decision making				
Milestone 4.1.3.1 A new competitive small grants program established for gender-responsive CCAFS research, and funding going to regional female scientists doing research on CCAFS priorities (2011)	Competitive grants program announced on CCAFS and partners websites; female researchers in each region funded through CCAFS	CCAFS and G&D websites; newspaper and other media reports	Local institutions are supportive of female scientists doing CCAFS-related research	ASARECA, CORAF, Gender & CC network; CGIAR Gender & Diversity Program; START; RUFORUM and other regional Univ. networks
Milestone 4.1.3.2 Analysis of lessons learned in a synthesis paper re: Linking knowledge with action from various engagement and communications approaches tested in CCAFS (2012)	Number of downloads of synthesis paper, briefs, blogs; evidence of partners applying such approaches	CCAFS and partner websites; citations of paper, links on partner websites	Partners contribute lessons from being involved in various CCAFS-sponsored engagement processes	Univ. of Oxford, Harvard Univ, ASARECA, CORAF, ICAR, BCAS, CEAPRED, FPRO
Milestone 4.1.3.3 Drawing on Theme 1 and Theme 2, collation of current knowledge on poor farming households' adaptation strategies to climate risk and change in terms of improved crops, livestock, agronomic practices, water, agroforestry and natural resource management across CCAFS baseline sites in 3 regions. Synthesis report and journal article; policy briefs (2015)	Number of technological innovations adopted by farmers; Number of downloads of synthesis paper, policy brief; media reports	Through NARS, extension service agencies, media.	Farmers are willing to learn and adopt new ways to tackle climate change	CGIAR centers, NARES, local NGO and farming organization partners in all sites
Milestone 4.1.3.4 A global conference on synergies between adaptation, risk, and mitigation reflecting on socio-economic issues such as governance, social networks, land tenure, migration, and weather insurance and how they have helped reduce poverty and hunger is held (2012)	Special issue on socioeconomics of climate change, agriculture, and food security; and handbook on methods and indicators to measure poverty and hunger through a socio-economic lens	Special issue and handbook produced		CG Centers, IDS, IIED, FAO

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 4.1.3.5 Exchange of views on best practices of adaptation, risk management and mitigation between at least 15 farmers associations leading to awareness of farming practices around the world (2013)	6 films documenting how farmers adapt, manage risks, and participation in mitigation schemes which are shown through various farmers associations	Through farmers associations that show the film	Farmers are interested in learning about other farmers in different parts of the world	CGIAR Centers, Panos
<b>Output 4.1.4</b> Analyses providing evidence of the benefits of, strategies for, and enhanced regional capacity 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 4.1.4.1 Drawing on Theme 3, CARE-CCAFS report on potential impacts on women and vulnerable groups of new carbon payment schemes; FAO/CCAFS report on gender & climate change issues across CCAFS regions, informing new CCAFS gender strategy (2011)	Number of downloads of CCAFS gender-related reports, briefs, blogs; CCAFS gender work cited in partners' reports/strategies and gender highlighted in national/regional climate, ag and food security strategies	CCAFS, CARE, FAO websites; links on partner websites	Partners able to inform and implement appropriate CC/gender analyses across sites in all CCAFS regions	CARE Int'l; FAO; CGIAR Gender & Diversity Program
Milestone 4.1.4.2 At least 15 partner dialogues on gender and CC issues held and evidence shared in partners' workshops (presentations, maps, papers contributed at their events) (2013)	Number of presentations at partner institutions, mentions of CCAFS-catalyzed information in their reports and websites	Partner events, websites, reports, media reports of national, regional and international CCAFS-related and influenced events	Partners invite CCAFS participation and help share knowledge generated through various means	Regional Ag Research Orgs (incl. NARS): ASARECA (EA); CORAF (WA); RWC (IGP); Regional policy orgs: NEPAD, CAADP; Int'l NGOs: CARE Int'l; Oxfam; Regional NGOs: Ecotrust (EA); SahelEco, AMEDD (WA); CEAPRED & FPRO (IGP); Private Sector: Katoomba Grp (EA); Technico Pty Limited (IGP); Farmers Orgs: EAFF (EA); ROPPA (WA), IFAP (Int'l); Regional Meteo Orgs: ACMAD, AGRHYMET, ICPAC
Milestone 4.1.4.3 A global conference on gender and climate change held pooling together work on gender and engagement in mitigation activities, abiotic stress, conservation of species, genetic diversity, risk management strategies, and impact of climate information in the three CCAFS regions (2012)	A book on gender, climate change, agriculture and food security	Published book	Gender will still be high on the agenda	CGIAR Centers, FAO
<b>Output 4.1.5</b> Mainstreaming adaptation 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 4.1.5.1 Twenty scenario and vulnerability-focused food security dialogues and new national and regional agricultural policies incorporating climate change (2013)	Number of new national and regional policies and agricultural sector strategies that incorporate CC concerns	National agricultural sector strategies, policy documents, regional partner strategy documents	Decision-makers are informed by, and empowered to use research results to inform new policies, programs and pro-poor and pro-environment strategies	ASARECA, CORAF, Ministries of Ag, CC-units, poverty units

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 4.1.5.2 A paper analyzing boundary processes, organizations and approaches tested in CCAFS to assess the extent to which partnerships have helped to link knowledge with action and mainstream strategies (2013)	A journal article analyzing the role of boundary organizations, processes and boundary objects that have been developed in the CCAFS program	Published article	There have been many multi-stakeholder platforms organized by CCAFS	CCAFS
<b>Output 4.1.6</b> Building of capacities to engage in global policy making processes and adopt risk management strategies				
Milestone 4.1.6.1 Three trainings sessions are held for a wide variety of stakeholders on UNFCCC negotiation process and policy frameworks such as NAPAs and NAMAs (2011)	Numerous stakeholders are trained in at least 20 countries	Number of certificates of training given	NAPAs and NAMAs are still important policy frameworks	UNFCCC, UNDP, AMCEN
<b>Objective 4.2 Assemble data and tools for analysis and planning</b>				
<b>Outcome 4.2 Improved frameworks, databases and methods for planning responses to climate change used by national agencies in at least 20 countries and by at least 10 key international and regional agencies</b>				
<b>Output 4.2.1</b> Integrated assessment framework, toolkits and databases to assess climate change impacts on agricultural systems and their supporting natural resources				
Milestone 4.2.1.1 Regional site characterization and baseline data collection completed and analysed in three target regions at three levels: household, village, and institution; Synthesis report presents results of baseline survey of farming households re: soil, land, water, livestock, fisheries and agroforestry management strategies for adapting to a changing climate, and climate-related information access, needs and uses, implemented across 12 countries in over 200 villages and 5,000 households. Synthesis report of institutional-level baseline work. (2011-2012)	13 site reports from baseline surveys made available on CCAFS and partner websites; baseline data shared widely and available on CCAFS website; synthesis CCAFS report and journal article submitted	CCAFS and partner websites	Trained local partners are not hampered by insecurity or other crises/unforeseen events and implement the survey	Univ. of Reading Statistical Group, ASARECA, CORAF, INSAH, ICRAF, ICRISAT, ILRI, IWMI, CEAPRED (Nepal), FPRO (India), BCAS (Bangladesh), CARE Int'l, NARS from Mali, Senegal, Burkina, Niger and Ghana; Univ of Dar & Salian Center (Tanz), Makerere Univ & NARO (Uganda); KARI (Kenya); Managing Risk for Improved Livelihoods (MARIL, Ethiopia)
Milestone 4.2.1.2. Priorities derived for downscaling needs based on an overview of current downscaling initiatives; New products based on innovative methods commissioned and tested, and methods compared and evaluated; Research reports produced on novel downscaling methods and their evaluation; at least one peer-reviewed paper published on comparison of different methods for agricultural impact modelling; * Proof of concept for climate downscaling methodology developed based on wavelets, multifractals and neural networks (CIP) (2012-2013)	Two new products tested and evaluated. Two research reports completed and disseminated. Peer-review paper published. Proof-of-concept completed and disseminated	CCAFS and partner websites; Journal publisher's website	Downscaling methods can be meaningfully evaluated and compared	CIAT, CIP, ILRI, University of Oxford, University of Cape Town, WCRP, IRI, University of California at Santa Barbara

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 4.2.1.3 Suite of downscaled climate data for the 2030s to 2090s, first from the AR4 climate models and then from CMIP5, for homogenized applications in the Program. *Online data repository of downscaled 1km present and future climate projections (CIAT) *Climate projection maps to evaluate future crop suitability (Bioversity) (AR4, 2011; CMIP5, 2012)	Datasets available for download via CCAFS website with appropriate documentation	CCAFS and partner websites	Appropriate CMIP5 data can be accessed and utilised	CIAT, ILRI, University of Oxford, University of Leeds, Waen Associates. *Stanford University, Generation Challenge Programme (GCP)
Milestone 4.2.1.4 Regional climate characterization and evaluation of global and regional climate model performance for the three initial target regions (2011)	Regional reports that evaluate different climate models, for the three initial target regions, from the perspective of agricultural impacts modelling	CCAFS and partner websites	Climate models can be evaluated appropriately on a regional basis	University of Oxford
Milestone 4.2.1.5 Regional climate characterization and evaluation of global and regional climate model performance for additional target regions. *Remote sensing databases and maps of vegetation conditions and recent historical changes in Africa developed (ICRAF) (2013)	Regional reports that evaluate different climate models, for additional target regions, from the perspective of agricultural impacts modelling	CCAFS and partner websites	Climate models can be evaluated appropriately on a regional basis	University of Oxford and others to be decided. *AFSIS
Milestone 4.2.1.6 Databases for soils, historical weather, agricultural systems, and natural resources in the target regions evaluated, gap-filled, collated and made available on the web, following the development and implementation of an appropriate data management policy. *Working version of crop production surfaces developed to model biophysical responses to environmental change (IFPRI). *Enhanced niche-based approaches developed and published for analysis of climate change impacts on major/minor crops (CIAT) *Simulation models on yields and emissions in rice production systems assessed for their use in decision support systems (IRRI) (2012-2014)	Data reports are written up and made available on CCAFS website, for the following: soils profile information; historical daily weather data; global agricultural systems data layers updated and refined; and agricultural systems data collected and collated for several hundred households at the CCAFS sites	Databases on CCAFS and partner websites	Data are accessible	CG centers, all regional partners, selected ARIs. *NARES in India
Milestone 4.2.1.7 Scoping studies undertaken on agricultural impact model gaps and needs, particularly at plot and landscape scales, and development and testing work commissioned and evaluated; Synthesis and research reports developed on key gaps and needs, and model documentation (2012-2013)	Model documentation, synthesis and research reports completed and disseminated	CCAFS and partner websites	Agreement can be reached on a global agricultural impacts modelling agenda	CG centers, ARIs, AgMIP (Agricultural Modelling Intercomparison and Improvement Project). *University of Leeds; World Bank
Milestone 4.2.1.8 Innovative decadal/near-term climate products developed to improve near-term climate prediction and needs and opportunities summarized in research reports (2015)	Model documentation, synthesis and research reports completed and disseminated	CCAFS and partner websites	New approaches to near-term climate prediction can be developed and implemented in appropriate tools	IRI, NCAR, UK Met Office, Universities of Oxford & Leeds;



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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<p>Milestone 4.2.1.9 A loosely-integrated assessment toolkit developed and implemented that can be used to analyze likely effects of specific adaptation and mitigation options in 3 initial target regions; high-level engagement with key users to build capacity in use of tools and data. Reports and meta-databases developed of available models, tools and data. *GLOBIOM-Livestock model used for global integrated assessment of livestock issues (ILRI). *Enhanced/interlinked set of data and quantitative tools including spatial databases, detailed mapping of food system characteristics and human welfare, detailed characterization of impact of changes and uncertainty on global food systems (IFPRI). Integrated assessment framework and toolkit for analyzing likely effects of specific adaptation and mitigation options in three target regions (ICRAF) (2013)</p>	<p>Reports and meta-databases completed and made publicly available</p>	<p>CCAFS and partner websites</p>	<p>A loose assemblage of models and tools can cater to different needs and users</p>	<p>All partners, CG centers, ESSP partners, ARIs. *IIASA, ZALF, FANRPAN, ASARECA, ARIs, NARS, PIK; ASB; UNEP</p>
<p><b>Output 4.2.2</b> Socially-differentiated decision aids and information developed and communicated for different stakeholders</p>				
<p>Milestone 4.2.2.1 Studies completed in selected sites in 3 initial target regions, using different methodologies including visualisation techniques, that outline the perceptions of different stakeholders on climate change and the impacts it has had and may have in the future on the resources that they have control over; Pilot study reports on target groups' perceptions of climate change and other drivers of change in their locations (2012)</p>	<p>Pilot study reports completed and disseminated</p>	<p>CCAFS and partner websites</p>	<p>Perceptions of different groups can be appropriately elicited with minimal bias</p>	<p>National and regional partners, CG centers, IUCN, AGRHYMET, OSS.</p>
<p>Milestone 4.2.2.2 Studies completed with selected stakeholder groups in 3 initial target regions to identify engagement strategies that may be effective in their utilising climate and impact information for decision making; Pilot study reports produced on effective engagement strategies for exchange of information with and between different target groups (2013)</p>	<p>Pilot study reports completed and disseminated</p>	<p>CCAFS and partner websites</p>	<p>Different engagement strategies are appropriate for different stakeholders, and these can be adequately elucidated</p>	<p>Partners to be identified working in the social sciences and the psychology of choice and decision-making</p>
<p>Milestone 4.2.2.3 Decision aids developed and tested in selected sites in 3 initial target regions that build on the information needs of socially-differentiated target groups, including by gender (2015)</p>	<p>Six decision packs developed for pilot communities and disseminated</p>	<p>CCAFS and partner websites; CCAFS records</p>	<p>Decision packs can be developed that speak to the needs and perceptions of different target groups</p>	<p>National and regional partners, CG centers, and partners to be identified working in the psychology of choice and decision-making</p>

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 4.2.2.4. Collation of decision aids and tools for prioritizing adaptation and mitigation actions at national/sub-national scales, with pilot testing in IGP region (2015)	Decision aids and tools released and results of pilot testing shared among policy makers	CCAFS and partner websites; CCAFS records	Continued strong demand for these decision aids among national and sub-national decision-makers	National and sub-national governmental partners, NARS, CG and ESSP scientists
<b>Objective 4.3 Refine frameworks for policy analysis</b>				
<b>Outcome 4.3 New knowledge on how alternative policy and program options impact agriculture and food security under climate change incorporated into strategy development by national agencies in at least 20 countries and by at least 10 key international and regional agencies</b>				
<b>Output 4.3.1</b> Tools developed and climate change impacts assessed at global and regional levels on agricultural systems (producers, consumers, natural resources), national/regional economies, and international transactions				
Milestone 4.3.1.1 Broad-scale modeling tools developed to assess climate change impacts on yields, production, trade, prices, and various human well-being measures developed or enhanced; models structure design vetted by experts. (2011)	Initial set of modeling tools completed and made publicly available	CCAFS and partner websites; CCAFS records	Modeling expertise and data available to estimate parameters	GLP scientists, CG centers, other ESSP scientists, NARS scientists
Milestone 4.3.1.2 Global and regional assessments of climate change impacts on agricultural systems, national and international food security completed; Findings included in papers, reports, chapters in global (e.g. IPCC, Biodiversity integrated assessment) and regional (e.g. African Union) assessments (2012)	Papers and reports completed and disseminated. Citations of CCAFS outputs in partners' reports. Chapters of global and regional assessment reports integrate findings	CCAFS and partner websites; Major global and regional assessment reports	Appropriate data, tools, methods can be assembled	Global Adaptation FUND, UNREDD, the World Bank, IPCC, UNFCCC/SBSTA, key bilateral donors developing adaptation and mitigation strategies, large international NGOs, key regional and national actors, research for development agencies, national, regional, and international planning agencies, researchers on climate change impacts on agriculture and natural resource management
<b>Output 4.3.2</b> Likely effects of specific adaptation and mitigation options, national policies (natural resource, trade, macroeconomic, international agreements) analyzed				
Milestone 4.3.2.1 Report produced identifying and evaluating specific adaptation and mitigation options for (1) relevance to major climate change impacts and GHG emissions, (2) likely effects on producers, consumers, natural resources, economies and rural livelihoods. (2012)	Report completed and disseminated	CCAFS and partner websites	Same as Milestone 4.3.1.2	
Milestone 4.3.2.2 Report produced identifying and evaluating relevant possible national policies (related to natural resource, trade, macroeconomic and international agreements) for their potential to support implementation of appropriate adaptation and mitigation options. (2013)	Report completed and disseminated	CCAFS and partner websites		

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
Milestone 4.3.2.3. Collation of toolkit for prioritizing adaptation and mitigation actions at national/sub-national scale and its pilot testing in IGP region (2015)	Toolkit released and results of pilot testing shared among policy makers	CCAFS and partner websites; CCAFS records		
<b>Output 4.3.3</b> Differential impact on social groups (gender, livelihood category etc) of climate change adaptation and mitigation options identified, evaluated and communicated				
Milestone 4.3.3.1 Report produced identifying and evaluating adaptation and mitigation options and national policies for differential social impacts with recommendations to enable equitable access to technical and institutional assistance for adaptation and mitigation options (2014)	Report completed and disseminated	CCAFS and partner websites	Same as Milestone 4.3.1.2	
<b>Output 4.3.4</b> Likely effects of specific adaptation and mitigation options and national policies (including for socially differential groups) communicated to key local, national and regional agencies and stakeholders				
Milestone 4.3.4.1 Set of information products developed and disseminated to key agencies and stakeholders including (1) research monographs and policy briefs on climate change; (2) enhanced, and interlinked datasets and quantitative tools such as spatial databases, detailed mapping of food systems and characterization of likely climate change impacts on agricultural systems, and (3) promising adaptation and mitigation options and tools; Publications and tools delivered to individuals responsible for regional policy programs and interventions that foster climate change adaptation and mitigation (2012)	Research monographs and policy briefs completed and disseminated. Datasets and quantitative tools produced and made publicly available. Information products used in regional programs and policy strategies	CCAFS and partner websites; Strategy and program documents	Viable set of adaptation and mitigation policy and program options	National and regional partners, other MPs, HarvestChoice, CSI
Milestone 4.3.4.2 Capacity building of 300 scientists and decision makers in use of appropriate tools in three initial regions including (1) training and workshops on crop, and IMPACT model; (2) capacity strengthening activities with NARS that reflect needs of targeted individuals and institutions for meeting agricultural development, poverty, hunger alleviation and natural resource management (2013)	300 decision makers trained in crop models and IMPACT model	Training agendas and participant lists; documentation for annual reporting		Ministries of Ag, Environment, Natural Resources in target regions, Universities in target regions, Research Institutions
Milestone 4.3.4.3 Synthesis of data and maps and distribution via climate change information networks and CCAFS or other web site; Improved curricula, learning materials, and delivery methods in strengthening capacity for climate change research and policy analysis through open learning resources (2015)	Data and maps publicly available. Curricula, materials and methods developed and disseminated.	CCAFS or other CG center websites, open learning resources, and networks	Building on existing networks and regional bodies	Ministries of Ag, Environment, Natural Resources in target regions, Universities in target regions, Research Institutions

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MILESTONES (OUTPUT TARGETS)	PERFORMANCE INDICATOR	MEANS OF VERIFICATION	ASSUMPTIONS	PARTNERS
<p>Milestone 4.3.4.4 Major report targeted to COP17, that lays out climate change impacts, adaptation and mitigation options and national policies; Research monographs and policy briefs on climate change adaptation and mitigation developed; Materials disseminated at Ag &amp; Rural Development Day 2011 (2011) . * Input in the MP7 high level report on the agricultural work program; Platform to ensure coastal communities concern are included in UNFCCC negotiations (WorldFish) (2011)</p>	<p>Report, monographs, policy briefs completed and disseminated. Documentation of web traffic (<a href="http://webusage.cgnet.com/">http://webusage.cgnet.com/</a>); citations in press and scholarly articles</p>	<p>CCAFS websites; Publications citing CCAFS.</p>	<p>Case studies available</p>	<p>CGIAR centers (CIP, CIAT, IFPRI, ICRISAT, CIMMYT, ICRAF, IWMI, ICARDA, WorldFish) HarvestChoice, CSI</p>
<p>Milestone 4.3.4.5 Scenario and food security dialogues and new information partnerships (new CG/non-CG partner teams jointly use a range of models; new networks and groups work collaboratively on food security issues) developed and documented in 3 initial target regions. (2012)</p>	<p>Dialogues meetings convened engaging 300 participants representing 30 organizations. Partnership projects incorporate CCAFS-produced models and tools</p>	<p>Documentation for annual reporting; participant lists collaborative meetings</p>	<p>Strong cooperation and dovetailing with existing initiatives</p>	<p>National and regional research partners, and stakeholders</p>
<p>Milestone 4.3.4.6 To enable rural poor, women and men, to have better access to high value commodity markets for climate change mitigation and other environmental resources, support for up-scaling and follow-up investments including (1) implementation of household surveys, (2) development of modules to assess governance factors from the perspective of different value change actors, (3) identification of interventions to improve access to markets for climate change mitigation, (4) engagement with network or policy advisors, policy researchers and program implementers; (5) highlight the need to act on the climate challenge while supporting other important rural development and environmental goals through policy fora and dialogues (at Regional Fora and Launch Conference) (2015)</p>	<p>Surveys completed, summarized and results shared. Governance factor modules and interventions developed and disseminated. Briefings delivered to 300 individuals representing 30 organizations. CCAFS materials shared through 20 policy events</p>	<p>CCAFS website; documentation for annual reporting; Event agendas and participant lists.</p>		<p>National and regional research partners, and stakeholders</p>