



# Business Plan 2012



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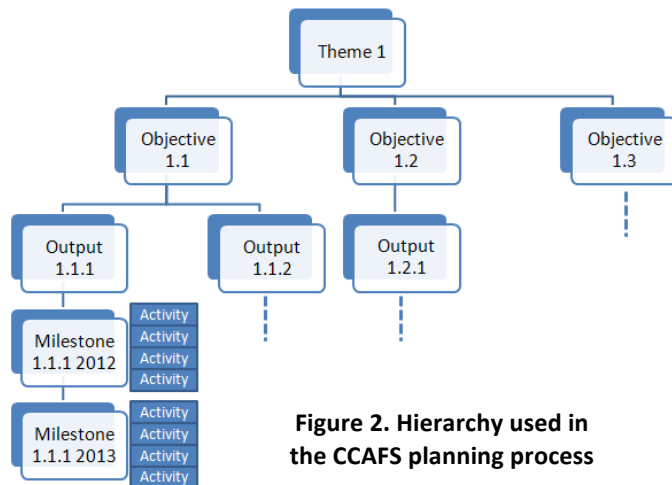
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## 1. Overview

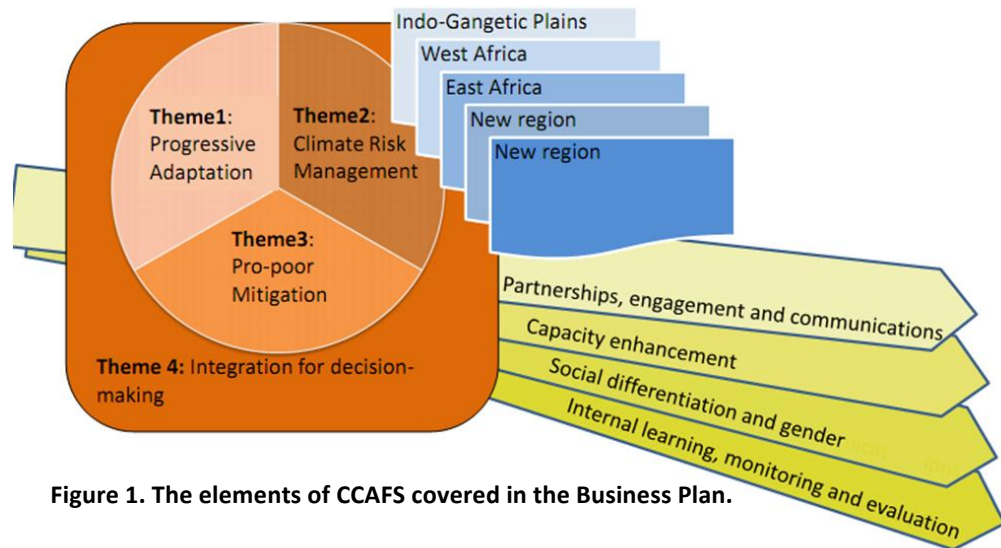
### Background

2012 will be the second year of operation of the CGIAR research program on Climate Change, Agriculture and Food Security (CAAFS). The 2012 business plan lays out the key activities in 2012, situated within the larger strategic framework of CCAFS. At the time of writing, many of the overarching principles for the operation of CGIAR Research Programs (CRPs) are still being produced by the Consortium Office (e.g. monitoring and evaluation strategy), so some of the proposed activities in 2012 may need to be modified as the year unfolds.

CAAFS consists of four Themes (Figure 1). While the Themes are global in character, there is a concentration of effort in targeted regions. At the time of writing there are three regions, with two new regions to be initiated in 2012. In addition to the thematic and regional work, a series of cross-cutting issues are addressed in the business plan, as shown in Figure 1.



**Figure 2. Hierarchy used in the CCAFS planning process**



**Figure 1. The elements of CCAFS covered in the Business Plan.**

### The CCAFS hierarchy in the planning process

The hierarchy used in the CCAFS planning process (Objective, Output, Milestone, Activity) is based on the currently discussed model for the CGIAR in the “One Common System”. Each Theme has three Objectives (and an associated proposed Outcome) (Figure 2). Each Objective consists of a number of Outputs – products derived from work over a number of years. Progress towards the Output is measured by annual Milestones. Milestones average about \$1 million (in a particular year), inclusive of all costs including overheads (the range is from \$500,000 to \$2 million). The unit below Milestone is “Activities”. Activities

average about \$250,000/annum (range from about \$150,000 to \$400,000). Centers have “Centre Activity Plans” and an associated budget. Theme Leaders and Regional Program Leaders also have budgets. In the Business Plan, only the 2012 Milestones are presented, with Centre Activity Plans in the annex to the Business Plan.

### **Changes made to Objectives, Outputs, Milestones**

One major change to Objective level is noted under Theme 1. All Themes made changes to Outputs and Milestones to get them more in line with the thinking in the “One Common System” (a CGIAR-wide attempt to get standardised procedures). These changes related to trying to standardise the investment size of each Milestone. Smaller Milestones were amalgamated with others; and some Outputs that were too limited in scope were combined with others. None of these changes represented a significant change in strategy.

### **Major issues that need to be tackled going forward**

In the sections that follow key issues that need to be tackled going forward are highlighted. For the Themes and Regions there are a number of common issues. These are:

- a) CCAFS inherited many activities from on-going work at the Centers. There are gaps in the portfolio and work that is not yet aligned with CCAFS objectives. Non-priority work will be phased out as current commitments to bilateral donors (and staff) are finalized; and new strategic activities will be initiated. CCAFS will support the transition in three ways: 1) develop common goals with centers through careful management and negotiation of work plans, 2) invest Theme Leader budgets to lead research and build capacity where CG activity is lacking; 3) start major initiatives as soon as funds are available from the phasing out of current non-strategic work. Major new initiatives to be started in 2012 are highlighted in the final sub-section for each Theme and Region.
- b) While we worked closely with Centers to fit their Activity Plans into the CCAFS strategy, more work is needed to coordinate activities across Centers to achieve the intended outcomes and impacts. Theme Leader resources are being invested to synthesize existing knowledge and inform strategy across Centers. Theme Leaders will focus on fostering coordination, knowledge sharing, and development of joint research strategies within communities of practice going into 2012 and beyond. For Centers that are heavily invested in a single CRP other than CCAFS there appears to be little incentive to commit activities or time to coordinate with CCAFS. The competition for resources among CRPs is high and reduces incentives for coordination and open communication. Better incentives for scientists and improving their access to CCAFS funds for research (as opposed to supporting center “overheads”) will support more collaboration.
- c) Building a coherent program across the CGIAR that reflects the CCAFS strategy still has some way to go. Key approaches that are under-represented in the CCAFS Center portfolio include attention to participatory action research (PAR) and gender. Attention to the trade-offs and synergies that occur between adaptation and mitigation at various time and space scales is not sufficiently well developed. We propose an additional investment in gender-related research and in getting centers better integrated in PAR in our baseline sites (see Theme 4 Objective 1). We will work with Centers in 2012 to get an improved focus on trade-offs and synergies.



## 2. Theme 1: Adaptation to Progressive Climate Change

**Theme Leaders:** Andy Jarvis (CIAT) and Andrew Challinor (University of Leeds)

**Background:** According to FAO, the world needs to produce 60-70% more food to support a growing and changing population, and this must happen under a more uncertain and potentially unfriendly climate. Many countries and communities are therefore asking: What does climate change imply to their specific context? What can be done to adapt? How much will it cost and how do I implement it? In Theme 1 we see that to adapt farming systems to a 2030 world we need to: **Close the yield gap** by effectively using current technologies, practices and policies in an adaptation context; **Increase the bar** by developing new ways to increase agricultural potential, especially to confront novel climates by supporting crop improvement to deliver farmers with varieties that can stand up to the many challenges of the future; and **Enable policies and institutions**, from the farm to national level, to ensure that change occurs.

### Objectives:

- ✓ **Objective 1.1: Adapted farming systems via integrated technologies, practices, and policies**
  - Intermediate indicator (3 year): One to five flagship technical and/or institutional approaches identified and developed with farmers, key development and funding agencies (national and international), civil society organizations and private sector in three regions, which would directly enhance the adaptive capacity of the farming systems to the climate change conditions
  - Key staff: Andy Jarvis (Theme Leader - 30%), Andy Challinor (Theme Leader – 5%), Osana Bonilla (Science Officer – 40%), Julian Ramirez-Villegas (CCAFS funded PhD student – 50%), Chase Sova (CCAFS fellow – 100%), Flora Mer (CCAFS fellow – 100%), Carlos Navarro (Climate data support – 50%)
  - Major partners and their roles: University of Oxford (community based adaptation planning); CARE International (SROI); ICT/KM (knowledge management); Sustainable Food Lab (value chains); IE University, Spain (GxE modeling); AgMIP (crop modeling)
- ✓ **Objective 1.2: Develop breeding strategies for addressing abiotic and biotic stresses induced by future climatic conditions, variability and extremes, including novel climates**
  - Intermediate indicator (3 year): Breeding strategies of regional and national crop breeding institutions in three target regions are coordinated, informed by CCAFS-led crop modeling approaches that are developed and evaluated for biotic and abiotic constraints for the period 2020 to 2050
  - Key staff: Michael Dingkuhn (shared position CCAFS-Grisp; co-leadership obj. 1.2 - 20%), Andy Jarvis (Theme Leader – 20%), Andy Challinor (Theme Leader – 15%), Osana Bonilla (Science Officer – 30%), Julian Ramirez-Villegas (CCAFS funded PhD student – 50%), Ann Kristin Koehler (CCAFS funded Post-Doc – 100%), Carlos Navarro (Climate data support – 50%). Joint CCAFS-CIRAD PhD TBD (to work on Sorghum); 100%.

- Major partners and their roles: CIRAD: (co-leadership Objective 1.2); Global Crop Diversity Trust (pre-breeding and crop wild relatives); NARS breeding groups in CCAFS regions

✓ **Objective 1.3: Integrate adaptation strategies for agricultural and food systems into policy and institutional frameworks**

- Intermediate indicator (3 year): Integrated adaptation strategies for agricultural and food systems inserted into policy and institutional frameworks at regional, national or sub-national level in 2 target regions. Policy makers and key stakeholders use CCAFS research outputs -guidelines, tools and methods- to support the development of NAPAS, sector specific adaptation plans, or germplasm benefit sharing policies.
- Key staff: Andy Jarvis (Theme Leader - 30%), Osana Bonilla (Science Officer – 20%), Flora Mer (CCAFS fellow – 50%).
- Major partners and their roles: CIAT (center activities in Latin America), ILRI (center activities in EA), IFPRI (center activities in IGP), IRRI (Mozambique), University of Oxford (social science support).

(in the following tables only the 2012 Milestones are shown)

OUTPUT	MILESTONES	PARTICIPATING CENTERS	REGION <sup>1</sup>
<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>Output 1.1.1. Development of farming systems and production technologies adapted to climate change conditions in time and space through design of tools for improving crops, livestock, agronomic and natural resource management practices.</b>	<b>Milestone 1.1.1 2012<sup>2</sup> (1)</b> Platform established for multi-location trials of technologies and genotypes for GxE interaction analysis and the calibration and evaluation of crop models.	CIAT, CIMMYT, IITA, Bioversity	EA, WA, IGP, Global
	<b>Milestone 1.1.1 2012 (2).</b> Robust method developed for calculating spatial and temporal analogue of climate. Partner co-authored peer-reviewable method developed and tested codes using pattern scaled HadCM3 climate output. Case studies conducted in at least 2 analogue sites in each region.	ICRAF, ICRISAT	EA, WA, SAsia
	<b>Milestone 1.1.1.2012 (3).</b> Practices developed that enhance the efficiency of water use in aquaculture and small scale irrigation (eg, increased productivity per unit use of water; increased irrigable area with same amount of water); Time series differential productivity and irrigated area analysis. The social and gender implications of applying these practices assessed...	IWMI, WorldFish	EA, Southern Africa
	<b>Milestone 1.1.1 2012 (4).</b> Assessment of the potential for exploitation of ground water for crop production in at least three basins.	IWMI	WA, EA and SSA at large, IGP (India),

<sup>1</sup> Region: This shows where this milestone work is being conducted. In some cases we can be specific, but in other cases we still await the final more detailed Center Activity Plans. EA: East Africa, WA: West Africa; IGP: Indo-Gangetic Plains; SEA: South-east Asia; LAC: Latin America and the Caribbean; SSA: Sub-Saharan

<sup>2</sup> Note numbering system: Milestone 1.1.1 2012, Milestone 1.1.1 2013, and so on. Where there are two milestones in a particular year then: Milestone 1.1.1 2012 (1), Milestone 1.1.1 2012 (2).

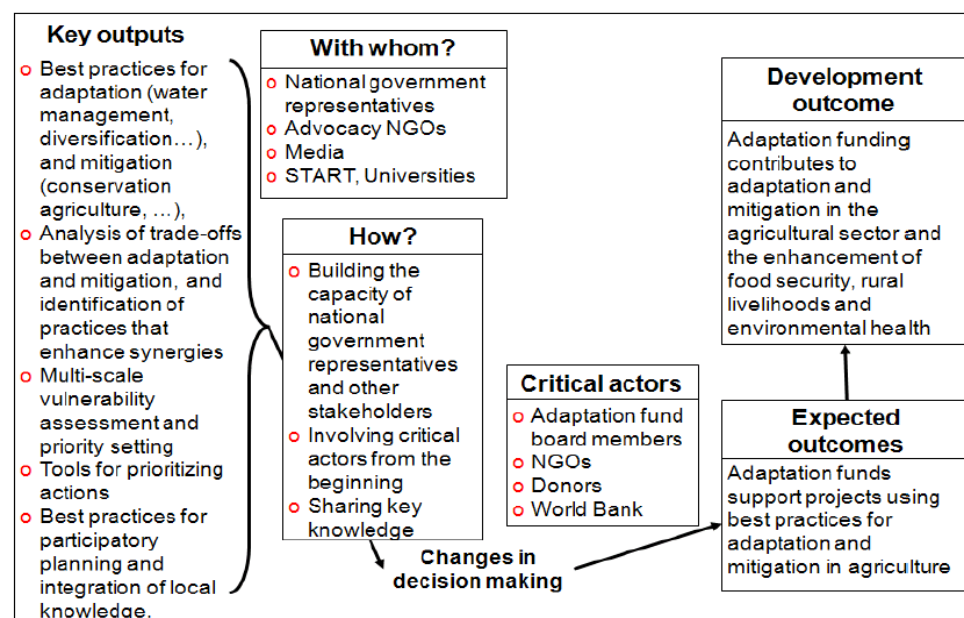
OUTPUT	MILESTONES	PARTICIPATING CENTERS	REGION <sup>1</sup>
			Australia
Output 1.1.2 Building of regional and national capacities to produce and communicate socially inclusive adaptation and mitigation strategies for progressive climate change at the national level (e.g. through NAPAs).	<b>Milestone 1.1.2 2012 (1).</b> At least 10 countries capacitated to spatial and temporal analogues in EA, WA and IGP. 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 milestone 1.1.1 2012 (2)). Engagement of key IGP stakeholders such as national universities, NARC, ICAR (DWR), BARC, NGOs; Farmer exchanges including at least 40% women convened among analogue sites integrating analysis of social, cultural and gender–disaggregated barriers to adaptation.	CIAT, ICRISAT, U. of Greenwich, U. of Oxford, ICAR (DWR), BARC, National Universities, NARS, NGOs	IGP, EA, WA
Output 1.1.3 New knowledge, guidelines and access to germplasm are provided for using genetic and species diversity to enhance adaptation, productivity and resilience to changing climate with benefits for socially marginal groups	<b>Milestone 1.1.3 2012 (1).</b> Approaches, methods and tools for gender and socially-sensitive participatory assessment of where and when biodiversity rich practices facilitate adaptation to climate change reviewed; findings summarized in report <b>Milestone 1.1.3 2012 (2).</b> 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.	Bioversity  Bioversity	LAC, IGP, + Other  EA, IGP, possibly WA, LAC, East Asia
<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>			
Output 1.2.1 Understanding and evaluating the response of different varieties/crops to climate change in time and space, and generating comprehensive strategies for crop improvement through a combination of modeling, expert consultation and stakeholder dialogue	<b>Milestone 1.2.1. 2012 (1).</b> 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.	CIAT, IRRI, CIMMYT, Africarice, ICRISAT	Global
Output 1.2.2 Breeding strategies disseminated to key national agencies and research partners <sup>3</sup>			
<b>Objective 1. 3: Integrate adaptation strategies for agricultural and food systems into policy and institutional frameworks</b>			
Output 1.3.1 Improved institutional arrangements and socially differentiated	<b>Milestone 1.3.1 2012 (1).</b> Document produced that synthesizes institutional arrangements, policies and mechanisms for improving the adaptive capacity of	CIAT, ILRI	EA, IGP, LAC

<sup>3</sup> This Output will have Milestones in future years.

OUTPUT	MILESTONES	PARTICIPATING CENTERS	REGION <sup>1</sup>
adaptation planning approaches at the local level to enable farming system adaptation	agricultural sector actors (addresses what is working where, how and why, with disaggregation by gender and other social strata). <b>Milestone 1.3.1 2012 (2).</b> 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.	CIAT	EA, WA, IGP
Output 1.3.2 Public and private sector policies and strategies at the national level to enable farming communities and the food system to adapt to predicted future conditions.	<b>Milestone 1.3.2. 2012 (1).</b> Baseline national adaptation policy and plans evaluated in at least 5 target countries and published in a synthesis report and policy brief	CIAT, ILRI	EA, WA
Output 1.3.3 Policies to enable access to and use of genetic resources for climate change adaptation research, and diffusion of adapted germplasm			

**Changes made to Objectives, Outputs, Milestones:** Theme 1 is suggesting the change of an Objective/Outcome. While this appears a major revision, in actual fact many of the changes are cosmetic and designed to improve the clarity in explaining the theme, and facilitate greater outcomes and impacts through greater integration with the theme's planned impact pathways. It is proposed that Objective 1.3 be changed from "Identify and enhance deployment and conservation of species and genetic diversity for increased resilience and productivity under conditions resulting from climate change" to "Integrate adaptation strategies for agricultural and food systems into policy and institutional frameworks". This makes a more explicit and concrete focus on policies and institutions, which will be crucial for the delivery of planned CCAFS impacts. Furthermore, work on species and genetic diversity is implicit already within Objectives 1.1 and 1.2; and so the content of the former 1.3 is moved under these objectives. The new Objective 1.3 focuses on three outputs which operate on three distinct scales (1.3.1 on local level institutional mechanisms and community-based; 1.3.2 on national-level policies and strategies; 1.3.3 remains the same as in the previous logframe, at the international level). In addition to these major changes, some minor changes in wording have been made to 5 Milestones, and 2 Milestones of 2011 have been passed to 2012 due to the late start due to funding uncertainty during 2011 (Analogue training and videos, Breeding institutions coordination).

**Key pathways to impact:** In 2012, the key impact pathway we will focus on is that related to getting best practice funded through Adaptation funds. This will involve the cost-benefit analysis of adaptation options and insertion of results into national plans, in at least 1 country. This pilot will then be replicated in other countries in 2013 and beyond.



**Figure 3. Theme 1 Key Pathways to impact**

**Major communications efforts:** Theme 1 will continue to promote the development of the Adaptation and Mitigation Knowledge Network (AMKN), our ambitious and comprehensive portal that aims to become the “go-to” place to share and access adaptation and mitigation knowledge in agriculture. This unique tool initially used as a public awareness channel for research on adaptation and mitigation on the basis of farmers’ stories and solid science, will further become a means to strengthen knowledge sharing and collaborations both within the CCAFS research community and with diverse stakeholders across the target regions. The platform will expand and its community of users will be developed from that of information users into one of information providers that generate new knowledge in the form of data, videos and stories. All research and communication outputs will be widely disseminated through this channel.

**Major issues that need to be tackled going forward:** Significant gaps in the Theme 1 portfolio existed in 2011. These included: Participatory research and good social sciences directed to adaptation research, and policy engagement with respect to climate-smart adaptation strategies. In 2012 one of these gaps, that related to participatory research, will be filled through the initiation of a new Activity on this topic. More is needed to improve the center-based workplans, which are strong on problem diagnostic, moderately strong on evaluation of individual adaptation options, but very weak on the integration of adaptation options into plans and strategies that will have scalable impacts. This latter gap is of most concern, and so in 2012 incentives will be sought to ensure centers develop inter-centre programs of work that in 2013 and 2014

integrate adaptation options into more holistic adaptation strategies. We propose 250k of funds be made available to centers to kick start this in 2012.

**Budget:** The Theme 1 budget for 2012 is US\$26.4 million. The larger portion of the Center Activity budget goes to Theme 1 with a 49%. The table below shows the distribution of Theme 1 funds across CG Centers. The major portion of the budgeted contributions is concentrated in three Centers: Bioversity, CIAT and IWMI, being these three almost 60% of the Center total. The Theme Leaders total budget is shown separately as well as the Regional Program Leaders budgets which have been broken down into Themes in order to ensure that regional activities are implemented in line with the agreed agenda.

Center	Budget	Share (%)
AfricaRice	179	1%
Bioversity	5,869	26%
CIAT	3,662	16%
CIFOR	-	0%
CIMMYT	2,071	9%
CIP	1,087	5%
ICARDA	2,024	9%
ICRAF	983	4%
ICRISAT	1,738	8%
IFPRI	-	0%
IITA	517	2%
ILRI	157	1%
IRRI	470	2%
IWMI	3,271	15%
WorldFish	481	2%
<b>Center subtotal</b>	<b>22,507</b>	<b>100%</b>
Theme Leaders	2,163	
Regional Program Leaders	1,735	
<b>Total</b>	<b>26,406</b>	

**Table 1. Theme 1 2012 total budget**

Objective #	Budget	Share
Objective 1.1	13,009	49%
Objective 1.2	3,512	13%
Objective 1.3	9,885	37%
<b>Total</b>	<b>26,406</b>	<b>100%</b>

**Table 2. 2012 budget per Theme 1 objectives**

Shown is the budget per Theme objective. Within Theme 1 the largest budget goes to Objective 1.1 (Analyze and design processes to support adaptation of farming systems)<sup>4</sup>

<sup>4</sup> The Objective budgets for this Theme need revision because of the changes made in the Objectives; much of what is in the Objective 1.3 budget will be moved to Theme 1.1, once Centers have completed their budget revisions.



### 3. Theme 2: Adaptation through Managing Climate Risk

**Theme Leader:** James Hansen (IRI)

**Background:** Managing the risk associated with climate variability is integral to a comprehensive strategy for adapting agriculture and food systems to a changing climate. Since many of the projected impacts of climate change are amplifications of the substantial challenges that climate variability already imposes on agriculture, better managing the risk associated with climate variability provides an immediate opportunity to build resilience to future climate change. Theme 2 enables promising innovations for managing climate-related agricultural risk at local and regional levels, and addresses gaps and supports improvements to climate-related information products and services that enable a range of agricultural risk management interventions.

#### **Objectives:**

- ✓ **Objective 2.1: Identify and test innovations that enable rural communities to better manage climate-related risk and build more resilient livelihoods**
  - Intermediate indicator (3 year): One to five flagship risk management interventions evaluated and demonstrated by farmers and agencies at benchmark locations in three regions
  - Key staff: James Hansen, Research Scientist (33%) Kevin Coffey, Science Officer (33 %)
  - Major partners and their roles: Partners in Participatory Action Research: NARS in Ethiopia, Kenya, India, Bangladesh, Nepal, Ghana, and Senegal; Analysis and Synthesis: IRI-Columbia University; Cornell University, CGIAR Centers
- ✓ **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**
  - Intermediate indicator (3 year): Three food crisis response, post-crisis recovery, and food trade and delivery strategies tested and evaluated with partner crisis response organizations at benchmark locations in three regions
  - Key staff: James Hansen, Research Scientist (33%) Kevin Coffey, Science Officer (33 %)
  - Major partners and their roles: Food Security Information and Analysis: WFP, FAO, Food Security and Information Network, USAID – FEWSNET; Partners in testing and up-scaling interventions: relevant line ministries, local NGOs, Regional Outlook Forums, and regional bodies working on food security (e.g. SAARC)
- ✓ **Objective 2.3: Support risk management through enhanced prediction of climate impacts on agriculture, and enhanced climate information and services**
  - Intermediate indicator (3 year): National meteorological services and regional climate centers trained and equipped to produce downscaled seasonal forecast products for rural communities in two countries in each of three regions

- Key staff: James Hansen, Research Scientist (33%) Kevin Coffey, Science Officer (33 %)
- Major partners and their roles: Linking Analysis to Action and Regional Capacity Building: AGRHYMET and ACMAD; Technical Analysis (in cooperation with before mentioned partners) IRI-Columbia, Princeton University, University of Reading, and NASA-JPL

OUTPUT	2012 MILESTONES	PARTICIPATING CENTERS	REGION
<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>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	<b>Milestone 2.1.1 2012 (1).</b> Synthesis of knowledge and priority knowledge gaps reported for three risk management innovations (livelihood diversification, index-based insurance, local traditional risk management strategies), with clear analysis of likely impacts across socially differentiated groups and gender.	WorldFish, ICRISAT, ILRI, CIP, Bioversity, IRRI, ICARDA, IFPRI, ILRI, and ICRAF	IGP, EA, and WA
<b>Output 2.1.2</b> Analytical framework and tools to target and evaluate risk management innovations for resilient rural livelihoods improved food security	<b>Milestone 2.1.2 2012 (1).</b> Analytical framework reported, and household and intra-household-level modeling requirements specified for targeting and evaluating risk management interventions for climate-resilient rural livelihoods; Multi-scale structural modeling design for aggregate impacts of household and intra-household risk management changes; Evaluation and refinement of models for crop and water management in response to climate fluctuations.	ILRI, CIP, CIMMYT, IFPRI, AfricaRice, and WorldFish	IGP, EA, and WA
<b>Output 2.1.3</b> Development; and demonstration of the feasibility, acceptability and impacts; of innovative risk management strategies and actions for socially-differentiated rural communities	<b>Milestone 2.1.3 2012 (1).</b> Gender- and socially-equitable participatory pilot demonstrations of portfolios of agricultural risk management innovations and traditional local knowledge established, applying consistent methodology for diagnosis, prioritization based on potential benefits for different types of users and evaluation; and traditional local risk management strategies documented, in 5 countries in EA, WA and IGP.	ILRI, CIP, CIMMYT, IFPRI, AfricaRice, and WorldFish	IGP, EA, and WA
	<b>Milestone 2.1.3 2012 (2).</b> Practices, technologies and production systems selected for demonstration based on assessment of their acceptability to and positive impact on welfare of different user groups. Gender- and socially equitable participatory demonstration and evaluation of impacts of promising production and NRM technologies, and production systems, on livelihood risk and resilience in the face of climate variability, initiated or continued in 5 countries. .	ILRI, ICRAF, CIMMYT, ICARDA	IGP, EA, and WA
	<b>Milestone 2.1.3 2012 (3).</b> Gender- and socially equitable participatory demonstration and evaluation of impacts of social capital, institutional and	ILRI, ICRAF, CIMMYT, ICARDA	IGP, EA, and WA

	financial services, and policy interventions, on livelihood risk and resilience in the face of climate variability, initiated or continued in 5 countries.		
<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>Output 2.2.1</b> Enhanced knowledge, tools and evidence to support improved management of the food system (e.g., food delivery, trade, crisis response, post-crisis recovery) in the face of climate fluctuations	<b>Milestone 2.2.1 2012 (1).</b> National to global food system stakeholders engaged to identify and explore potential improved response strategies in the face of climate fluctuations; Impacts of climate variability on components (e.g., production, prices, rural incomes, consumption, trade, humanitarian assistance, ,social and gender equity) of food security reported, and policies to mediate impacts reviewed in EA, WA and IGP.	ILRI and CIMMYT	IGP, EA, and WA
<b>Objective 2.3: Support risk management through enhanced prediction of climate impacts on agriculture, and enhanced climate information and services</b>			
<b>Output 2.3.1</b> Improved, value-added climate information products, knowledge, tools, methods; and platforms for monitoring and predicting impacts of climate fluctuations on agricultural production and biological threats; to support management of agricultural and food security risk	<b>Milestone 2.3.1 2012 (1).</b> Crop and rangeland production forecasting methodology review and platform design; Feasibility of reconstructing historic daily meteorological data required for agricultural modeling demonstrated and evaluated in two countries or regional institutions; Capacity on seasonal forecasting enhanced in 6 countries..	ICRISAT, CIP, and CIMMYT	IGP, EA, and WA
<b>Output 2.3.2</b> Synthesized knowledge and evidence on institutional arrangements and communication processes for enhancing climate services for agriculture and food security, including services that reach marginalized farmers and women	<b>Milestone 2.3.2 2012 (1).</b> Prototype gender- and socially-equitable climate information delivery mechanisms demonstrated and evaluated with representative socially and gender-differentiated user groups in rural communities at 2 locations each in EA, WA and IGP. Social and gender-differentiated demand for and use of different types of climate-information content and its presentation assessed and implications for design of delivery mechanisms identified..	ICRISAT and CIMMYT	IGP, EA, and WA

**Changes made to Objectives, Outputs, Milestones:** Revisions were made primarily to standardize the size of Milestones and Outputs across CCAFS. Considering the size of the Theme 2 annual budget, the number of Outputs was reduced to six. Two Milestones from 2011 were incorporated into 2012 Milestones, Milestone 2.1.2 2012 and Milestone 2.2.1 2012.

**Key pathways to impact:** Outputs of Objective 1 will contribute to climate-resilient rural livelihoods. A combination of place-based participatory action research, strategic research and synthesis will provide a foundation of knowledge and evidence to support promising climate risk management interventions such as anticipatory management using advance information, livelihood diversification and index-based insurance. Outputs of Objective 2 will contribute to improved food security and more climate-resilient food systems. Humanitarian organizations and other key actors in the food system will identify and test promising strategies for using improved information to improve interventions in the face of climate fluctuations. Improved advance information about climate impacts on food production and food security, and platforms for knowledge-

sharing and coordination, will contribute to timelier and better-targeted food crisis response; which will decrease long-term livelihood impacts of crises, reduce disincentives to agricultural producers and markets, and reduce cost of assistance. Under Objective 3, improving climate information products, removing communication bottlenecks and strengthening climate service institutional processes will enable improved management of agricultural risk at the multiple levels addressed by Objectives 1 and 2. Participating regional climate centers and national meteorological services will improve information and services for agriculture and food security. Partnering with climate services such as the Global Framework for Climate Services and ClimDev-Africa offers a mechanism to upscale enhancements in climate information services. In 2012, results from participatory action research, initiated in 2011, will include expanded engagement with government partners to explore avenues for up-scaling research results. Further, government partners and international humanitarian aid organizations will play an increasing role in Objective 2, as part of a joint costing study on the value of climate information for decision making.

**Major communications efforts:** Theme 2 will work closely with the CCAFS Communications team and build upon potential synergies with communication teams at IRI and the Earth Institute at Columbia University to reach a broader community and maximize the potential impact of our work. We plan to use the Adaptation and Mitigation Knowledge Network (AMKN) site to share knowledge and videos from the field, and promote the CCAFS blog and website to make findings and experiences available to a wide audience. Starting in 2012, we will also develop new communications platforms based on the “Community of Practice” model to bring CGIAR scientists and Global Change Research partners, working on key thematic areas, together to share knowledge and best practices, identify gaps and opportunities, as well as establish common methodologies.

**Major issues that need to be tackled going forward:**

For Theme 2, the balance of effort across Objectives needs to be addressed. Objective 2.1 includes much of the traditional CGIAR work focused on production technologies and systems. The new areas of research and intervention (primarily Objective 2.2 and 2.3) present significant opportunity to strengthen the CGIAR climate adaptation portfolio. These Objectives are essential components of a holistic strategy to confront climate variability, but are not covered adequately in Center Activity Plans. Increasing interest, expertise and allocation of human and financial resources to Objectives 2.2 and 2.3 within the Centers is a high priority for Theme 2. A new investment of \$250,000 is proposed to strengthen IFPRI’s leadership within Objective 2.2. Comparable investment to strengthen Center leadership of Objective 2.3 will likely need to wait until one or more Centers demonstrate a vision to lead in this area, and develop the necessary connections with global or regional climate service initiatives. Exciting regional opportunities have already emerged through ongoing partnership efforts in these areas, including the possibility of working with Ethiopian government decision-makers to analyze and address barriers to earlier interventions when early warning information identifies production shortfalls (Objective 2.2), and a partnership with USAID to evaluate Mali’s innovative agrometeorological advisory program with a view toward up-scaling to pastoral systems and other countries (Objective 2.3).

**Budget:** The Theme 2 budget for 2012 is US\$11.6 million. 17% of the Center Activity budget goes to this Theme. The table below shows the distribution of Theme 2 funds across CG Centers. The major portion of the budgeted contributions is concentrated in three Centers: CIMMYT, CIP and ICRISAT, being these three almost 60% of the Center total. The Theme Leaders total budget is shown separately as well as the Regional Program Leaders budgets which have been broken down into Themes in order to ensure that regional activities are implemented in line with the agreed agenda.

Center	Budget	Share (%)
AfricaRice	238	3%
Bioversity	-	0%
CIAT	-	0%
CIFOR	-	0%
CIMMYT	2,234	29%
CIP	1,229	16%
ICARDA	606	8%
ICRAF	491	6%
ICRISAT	1,000	13%
IFPRI	750	10%
IITA	234	3%
ILRI	191	2%
IRRI	28	0%
IWMI	-	0%
WorldFish	713	9%
<b>Center subtotal</b>	<b>7,715</b>	<b>100%</b>
Theme Leader	1,797	
Regional Program Leaders	2,090	
<b>Total</b>	<b>11,602</b>	

**Table 3. Theme 2 2012 total budget**

Objective #	Budget	Share
Objective 2.1	5,597	48%
Objective 2.2	2,008	17%
Objective 2.3	3,998	34%
<b>Total</b>	<b>11,602</b>	<b>100%</b>

**Table 4. 2012 budget per Theme 2 objectives**

Shown is the budget per Theme objective. Within Theme 2 the largest budget goes to Objective 2.1 (Identify and test innovations that enable rural communities to better manage climate-related risk)

#### 4. Theme 3: Pro-poor Climate Change Mitigation

**Theme Leader:** Lini Wollenberg (University of Vermont)

**Background:** Theme 3 examines how to achieve climate change mitigation in ways that benefit poor farmers and examines the trade-offs that mitigation may involve, especially with the intensification of agriculture. Two windows of opportunity exist for pro-poor mitigation. The first is the design of low net emissions agricultural development pathways. The second is increasing the capacity of the poor (including men and women) to benefit from carbon financing, including carbon markets. While the largest potential for agricultural mitigation is among smallholders in developing countries, smallholders usually cannot afford the up-front costs of a transition in practices or carbon market project development, data is often not available, and farmers manage diversified mixed crop-livestock systems for which emissions are poorly understood and emissions accounting systems do not yet exist. CCAFS has a comparative advantage in investigating agricultural mitigation's synergies with adaptation, developing generalizations for across a range of agro ecosystems and regions, and developing integrated whole-farm and landscape approaches.

**Objectives:**

✓ **Objective 3.1: Inform decision makers about the impacts of alternative agricultural development pathways**

- Intermediate indicators (3 year): Findings and evaluation tools on mitigation and livelihoods benefits of alternative agricultural development pathways used by global agencies and decision-makers in two countries in each of the three regions
- Key staff: Lini Wollenberg (Theme Leader - 33%), Michael Misiko (Science officer - 33%)
- Major partners and their roles: CG centres - IITA, IFPRI (research); Winrock, Applied Geosolutions (trainings, data sets, methodology development); WOCAN, FAO, various universities, NGOs in the three regions involved in the CCAFS competitive small grants program (gender and social differentiation)

✓ **Objective 3.2: Identify institutional arrangements and incentives that enable smallholder farmers and common-pool resource users to reduce GHGs and improve livelihoods**

- Intermediate indicators (3 year): Decision-makers in three regions better informed re options and policy choices for incentivizing and rewarding smallholders for GHG emission reductions
- Key staff: Lini Wollenberg (Theme Leader - 33%), Michael Misiko (Science officer - 33%)
- Major partners and their roles: Ecotrust, Vi Agroforestry, CARE, TIST (institutional designs, policy and finance; capacity building, trial of finance/incentive mechanisms) ICRAF, EcoAgriculture Partners (research)

✓ **Objective 3.3: Test and identify desirable on-farm practices and their landscape-level implications**

- Intermediate indicators (3 year): Project design and monitoring guidelines for smallholder agriculture in developing countries produced and contributing to global standards



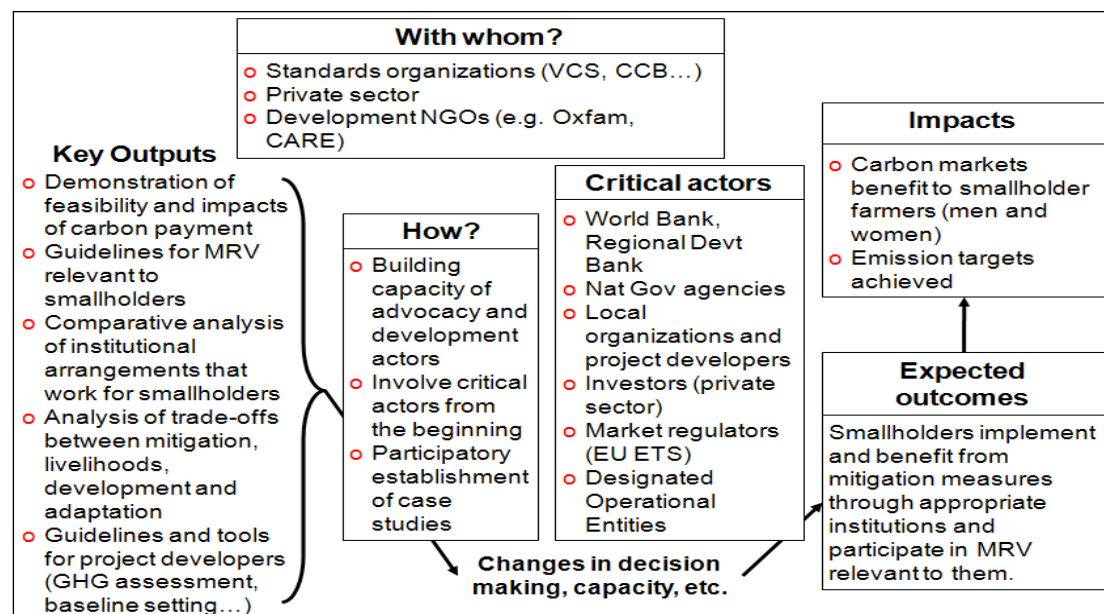
- Key staff: Lini Wollenberg (Theme Leader - 33%), Michael Misiko (Science officer - 33%)
- Major partners and their roles: CG centers - IFPRI, IITA, ICRAF (Mitigation feasibility); FAO, Colorado State University, Unique Forestry, Duke University, Winrock international, Applied GeoSolutions, Global Research Alliance, UNEP (methods for GHG monitoring and accounting roles; Analysis of economic and environmental costs and benefits from agricultural mitigation)

OUTPUT	MILESTONES	PARTICIPATING CENTERS	REGION
<b>Objective 3.1. Inform decision makers about the impacts of alternative agricultural development pathways</b>			
<b>Output 3.1.1 Analysis of agricultural development pathways and trade-offs</b>	<b>Milestone 3.1.1 2012 (1).</b> Analysis and frameworks for planning low carbon agricultural development and understanding trade-offs, including ensembles of global integrated assessment models to examine food-energy trade-offs and social returns of investments in mitigation, ex-ante impacts assessed of options with different trade-offs for men, women and the poor (ILRI- linked to T4, CIAT-Colombia, T3).	CIAT, CIMMYT IFPRI,	All CCAFS regions
<b>Output 3.1.2 Enhanced tools, data and analytic capacity in regional and national policy and research organizations to analyze mitigation sectors and agricultural development options</b>	<b>Milestone 3.1.2 2012 (1).</b> Synthesis reports and data for IPCC and national and regional bodies on sectoral and cross-sectoral mitigation potentials: (i) livestock, agriculture and forestry (ILRI); (ii) aquaculture sector, analyzed through supply chain (WorldFish). Includes differentiation of livestock, crops, agroforestry and aquaculture systems of known importance to women and the poor. Includes capacity building of decision makers in inventories and use of appropriate tools and data in three initial regions (ILRI, ICRAF, T3). See also 3.3.1 2012-15 for sectoral data from on-farm trials.	ILRI, WorldFish, ICRAF	All CCAFS regions
<b>Objective 3.2: Identify institutional arrangements and incentives that enable smallholder farmers and common-pool resource users to reduce GHGs and improve livelihoods</b>			
<b>Output 3.2.1 Evidence, analysis and trials to support institutional designs, policy and finance that will deliver benefits to poor farmers and women, and reduce GHG emissions</b>	<b>Milestone 3.2.1 2012 (1).</b> Review of economic incentives and benefits to socially and gender differentiated farmers and other stakeholders for adoption of integrated practices in two regions (conservation agriculture in rice-wheat systems in IGP, sustainable land management in maize-legume systems and agroforestry in EA). (CIMMYT, T3). Development of comparative framework. Linked to Milestone 3.3.1 (2013) and 3.3.1 2012-2015...	CIMMYT, IRRI, ICRAF	IGP, EA
	<b>Milestone 3.2.1 2012 (2).</b> Synthesis and development of novel institutional options for mitigation payments to farmers which have been assessed for the potential distribution of their benefits among different social groups, including women and the poor: PES for livestock (ILRI), bundling of ecosystem services (IFPRI), national carbon offsets (WorldFish), carbon market project design in EA (T3).	ILRI, IFPRI, WorldFish	IGP, EA

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 2012 (1).</b> Training for national policy makers, project implementers and communities on designing payments for carbon to benefit poor farmers and women	ICRAF	EA, WA, SEA
<b>Objective 3.3: Test and identify desirable on-farm practices and their landscape-level implications</b>			
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><b>Milestone 3.3.1 2012 (1).</b> Assessment of feasibility and impacts of mitigation practices on farms and different social groups within the rural population, including women and the poor for (i) conservation agriculture, sustainable land management and irrigated farming systems in rice-wheat and maize-legume systems in 3 target regions (CIMMYT, IFPRI), (ii) improved irrigation and fertilizer management of rice and the viability of region- specific approaches for CDM (IRRI), (iii) dryland cropping systems (ICRISAT), (iv) agroforestry and complex agro-ecosystems (ICRAF), (v) livestock (ILRI), (vi) potatoes and sweet potatoes (CIP), (vii) coffee and cacao agroforestry in EA and WA (IITA, ICRAF, CIAT) at crop system and landscape scales, (viii) biochar (IFPRI and ICRAF), (ix) cereal biomass production and SOC of contour ridge tillage (ICRISAT), (x) pasture (CIAT), (xi) low-input fruit systems (CIAT) and (xii) coffee systems for Central America (CIAT), (xiii) land use change, land rehabilitation and poplar agroforestry, (xiv) oil palm (CIFOR). Linked to 3.3.2 2013.</p> <p><b>Milestone 3.3.1 2012 (2).</b> Options for low climate impact sustainable agricultural intensification identified, tested and documented in at least 6 countries and tested on farms in at least 2 sites in each region: conservation agriculture, water management, agroforestry, sustainable land management, fertilizer micro-dosing. Linked to T1.</p>	CIMMYT, IFPRI, ICRISAT, ILRI, CIFOR, ICRAF, CIP, IITA, CIAT, IRRI	All CCAFS regions, LAC, SEA
		TBD	EA, WA, IGP
Output 3.3.2. Methods developed and validated for GHG monitoring and accounting at farm and landscape level to contribute to compliance and voluntary market standards	<b>Milestone 3.3.2 2012 (1).</b> Review of methods for the quantification of agricultural greenhouse gases for smallholders, including needs of men and women users and recommendations for improvement; includes case study of methodology development for carbon analysis in landscapes and coffee farming systems in EA (T3, ICRAF).	ICRAF	EA
Output 3.3.3 Enhanced capacity for the use and development of monitoring and accounting methods and assessing feasibility and impacts in regional and national research institutions	<b>Milestone 3.3.3 2012 (1).</b> Assessment reports on technical and institutional capacity for national-level measurement and monitoring in 3 target countries (T3). Network of practice established for C sequestration in rangelands for Africa.	ILRI	EA, WA

**Changes made to Objectives, Outputs, Milestones.** To standardize the size of outputs and milestones across CCAFS, the number of outputs was reduced. Activities and milestones from the eliminated outputs were integrated into the revised set. A new Milestone was added on decision-making tools for low-climate impact agricultural development pathways to better articulate the need for methods under this Objective.

**Key pathways to impact:** Key pathways for pro-poor mitigation will be: (a) Linking farm- and national policy-level participatory action research to demonstrate viable options and translate lessons into public and private investments, infrastructure and policy. Collaboration with corporate social responsibility programs of agri-business (e.g. Unilever, Danone, Campbell's, Nestle) and key information networks (e.g. Food Climate Research Network) will enable more rapid sharing of innovations and scaling up of impacts; (b) Developing measurement methods by engaging leading international methods developers and users, together with standard-setting organizations such as the UNFCCC, FAO, Global Research Alliance, Verified Carbon Standard and the World Bank. (c) Synthesize the evidence needed to demonstrate the feasibility, impacts and required conditions for agricultural mitigation to advance international attention and frameworks for mitigation, with information shared especially with the Global Research Alliance, national policy makers, NGOs, and in COP and SBSTA meetings and with negotiators. Figure 4 provides an example of a more detailed pathway for improving smallholder participation in carbon markets.



**Figure 4. Impact pathway for influencing how carbon markets serve smallholder farmers**

Opportunities shaping Theme 3's plan for 2012 include (i) building on momentum created by REDD+ related to agriculture as a driver of deforestation and increasing interest in agricultural mitigation by the UNFCCC, multilateral organizations (World Bank-FAO) and the private sector; (ii) informing the IPCC Fifth Assessment Report (AR5); (iii) collaborating with the Global Research Alliance to enhance methods and national emissions management capacities. Theme 3's emphasis in 2012 is as follows: Objective 3.1: development and application of decision-making tools for identifying low climate impact agricultural development pathways; Objective 3.2: incentives and adoption for the adoption of mitigation technologies to supplement carbon market projects due to increasing likelihood of limited benefits from carbon projects; Objective 3.3: measurement and accounting to provide the tools necessary for managing emissions and establishing bilateral and international frameworks.

**Major communications efforts:** In 2012, two major CG-wide outputs will include (1) inter-comparison of global change models, including running a range of similar scenarios – led by IFPRI and ESSP (2) special journal issue on methods and data for emissions associated with different practices and agro-ecosystems – led by CIFOR and ICRAF. Other major communications will be on measurement and accounting methods and internal communications plans among CG scientists.

**Major issues that need to be tackled going forward:** (1) Better coordination between Theme 3 and CRP 6 is essential. Further work on building relationships, coordinating outputs and collaborative research with CRP6 and CIFOR in particular will be key in 2012. (2) The program faces challenges in that most of the focus of Centre work is on the technical development of practices that reduce GHGs or increase carbon sequestration. Mitigation impacts are often incidental to improving the crop system. Few centres' have staff dedicated to mitigation, and even fewer have staff working on incentives, institutional and policy issues. As a first step to rectify this an additional Activity on the social and adoption dimensions of mitigation will be added in 2012. (3) Big gaps also exist in the analysis of trade-offs, and integrated approaches to farm and landscapes. These will be addressed in 2013.

**Budget:** The Theme 3 budget for 2012 is US\$11 million. 17% of the Center Activity budget goes to this Theme. Table 5 shows the distribution of Theme 3 funds across CG Centers. The major portion of the budgeted contributions is concentrated in three Centers: CIMMYT, ICRAF and IFPRI, these three being almost 60% of the Center total. The Theme Leaders total budget is shown separately as well as the Regional Program Leaders budgets which have been broken down into Themes in order to ensure that regional activities are implemented in line with the agreed agenda.

Table 6 shows the budget per Theme objective. Within Theme 3 the largest budget goes to Objective 3.3 (Test and identify desirable on-farm practices and their landscape-level implications)

Center	Budget	Share (%)
AfricaRice	384	5%
Bioversity	-	0%
CIAT	564	7%
CIFOR	725	9%
CIMMYT	952	12%
CIP	311	4%
ICARDA	-	0%
ICRAF	2,457	32%
ICRISAT	137	2%
IFPRI	1,000	13%
IITA	-	0%
ILRI	212	3%
IRRI	621	8%
IWMI	-	0%
WorldFish	296	4%
<b>Center subtotal</b>	<b>7,657</b>	<b>100%</b>
Theme Leader	1,763	
Regional Program Leaders	1,629	
<b>Total</b>	<b>11,049</b>	

**Table 5. Theme 3 2012 total budget**

Objective #	Budget	Share
Objective 3.1	2,447	22%
Objective 3.2	2,760	25%
Objective 3.3	5,842	53%
<b>Total</b>	<b>11,049</b>	<b>100%</b>

**Table 6. 2012 budget per Theme 3 objectives**

## 5. Theme 4: Integration for Decision Making

**Theme Leaders:** Philip Thornton (ILRI), Patti Kristjanson (ICRAF), Gerald Nelson (IFPRI)

**Background:** The research undertaken in this theme provides an analytical and diagnostic framework for the whole of CCAFS. It will address the need for methods, models, databases and system metrics aimed at two broad challenges: (1) enhanced assessment of the likely impacts of climate change on agricultural systems, particularly in the context of other social and economic changes; and (2) improved methodologies to assess the likely impacts of different policy and program interventions to foster adaptation and mitigation in terms of poverty alleviation, food security and environmental health. Theme 4 provides a critical integrative function for CCAFS. In response to demand from national and global policy makers, it will collate and generate standardized global datasets; and undertake scenario research to provide plausible futures and guide the development of new technologies and policies in the other Themes of CCAFS. It will provide methods to involve stakeholders in agenda setting for Themes 1–3 and communicate CCAFS individual and integrated outputs.

### Objectives:

- ✓ **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**
  - Intermediate indicators (3 year): Agriculture mainstreamed into the global climate change policies, and major international food security initiatives fully incorporate climate change concerns
  - Key Staff: Patti Kristjanson (Theme Leader 4.1 - 100%), Moushumi Chaudhury (Science Officer – 80%)
  - Major Partners and their roles: University of Oxford, Panos, ASARECA, IIASA, AgMip, ILRI (scenarios); University of KwaZulu Natal, Food Economy Group, FAO, University of Cornell, USAID, EAC, AU, ASARECA, CORAF (vulnerability maps); FAO, various universities and national agriculture research institutes in 3 CCAFS regions (gender & pro-poor Research)
- ✓ **Objective 4.2: Assemble data and tools for analysis and planning**
  - Intermediate indicator (3 year): Global databases and set of tools for climate-smart agriculture established and used by key international and regional agencies
  - Key staff: Philip Thornton (Theme Leader 4.2 - 80%); Wiebke Förch (Science Officer - 100%); Danny Martinez (Data Manager – 100%); Timothy Mulatya (Program Management Officer – 50%)
  - Major partners and their roles: University of Reading (support for baseline activities); ILRI (household model development, global integrated model comparisons, vulnerability assessments); U Cape Town (downscaling climate data and methods; regional climate characterization); Oxford University (regional scenarios and downscaling climate data and methods); IIASA (quantification of regional scenarios, global crop/rangeland extent data layers)



✓ **Objective 4.3: Refine frameworks for policy analysis**

- Intermediate indicator (3 year): New knowledge on how alternative policy and program options impact agriculture and food security under climate change incorporated into strategy development by at least 3 national agencies, and 3 key international and regional agencies
- Key staff: Gerald C. Nelson (Theme 4.3 - 50%), Science Officer TBD (100%)
- Major partners and their roles: IFPRI, Amsterdam Associates, U. of Florida, Oxford University, U. of Pretoria, World Bank, CRP2 (Tool development); World Bank, AgMIP, IPCC (Adaptation and mitigation policy options, globally); FANRPAN, ASARECA, CORAF (Adaptation and mitigation policy options, regionally).

OUTPUT	2012 MILESTONES	PARTICIPATING CENTERS	REGION
<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>Output 4.1.1</b> Future economic development scenarios taking climate change into account, and vulnerability maps and analyses incorporating a changing climate and food security issues shared with decision-makers at national, regional and global levels and informing regional economic development and national food security plans and policies	<b>Milestone 4.1.1 2012 (1).</b> Three regional teams produce prototype scenarios and vulnerability targeting products that are used in visioning and strategy exercises with key policymakers, private sector and NGOs	ICRAF, ILRI, IFPRI, ICRISAT, IWMI, CIAT	All CCAFS Regions
<b>Output 4.1.2</b> Evidence on, testing and communication of, successful strategies, approaches, policies, and investments contributing to improved science-informed climate change-agricultural development-food security policies and decision making	<b>Milestone 4.1.2 2012 (1).</b> Participatory Action Research process established in 13 sites and gender-sensitive activities related to risk management, adaptation and mitigation implemented, with engagement and communication strategies aimed at users of the knowledge generated pursued, and scaling up mechanisms in place	CIMMYT, ICRAF, ILRI, IFPRI, ICRISAT, IWMI, CIAT	All CCAFS Regions
<b>Output 4.1.3</b> Analyses providing evidence of the benefits of, strategies for, and enhanced regional capacity developed in, gender and pro-poor climate change research approaches that will increase the likelihood that CCAFS-related research will	<b>Milestone 4.1.3 2012 (1).</b> Tools for engagement to ensure gender and pro-poor outcomes, communication approaches and tools for understanding climate change-gender relationships tested and disseminated.	All centres active in CCAFS	All CCAFS regions

OUTPUT	2012 MILESTONES	PARTICIPATING CENTERS	REGION
benefit women and other vulnerable as well as socially differentiated groups.			
Output 4.1.4 Strengthening capacities to effectively engage in global policy processes and mainstreaming risk, adaptation and mitigation strategies into national policies, agricultural development plans, and key regional and global processes related to agriculture and rural development, food security and climate change	<p><b>Milestone 4.1.4 2012 (1).</b> Partner-led engagement and communication approaches, knowledge networks, and capacity of farmers' organizations, government and regional organization partners' strengthened for mainstreaming CCAFS-related, gender disaggregated research evidence.</p> <p><b>Milestone 4.1.4 2012 (2).</b> Local institutional capacity strengthened in land health surveillance methods including soil carbon measurement in CCAFS regions; Scoping studies undertaken on linking landscape-level land health and carbon measures with socioeconomic data from CCAFS baselines and other site studies</p>	<p>IFPRI, IWMI, ICRISAT, ILRI, ICRAF, WorldFish</p> <p>ICRAF, CIAT</p>	<p>All CCAFS regions</p> <p>All CCAFS regions</p>
<b>Objective 4.2. Assemble data and tools for analysis and planning</b>			
Output 4.2.1 Integrated assessment framework, toolkits and databases to assess climate change impacts on agricultural systems and their supporting natural resources	<p><b>Milestone 4.2.1. 2012 (1).</b> Regional site characterization and gender-disaggregated baseline data collection completed and initial analyses in three target regions at three levels: household, village, and institution</p> <p><b>Milestone 4.2.1. 2012 (2).</b> Downscaled climate data and methods tested and harmonized</p> <p><b>Milestone 4.2.1. 2012 (3).</b> First sets of databases, database tools, and meta-data on agricultural impact models collated and/or developed and made available, to enable stakeholders to assess impacts and evaluate options (including soil profile descriptions; global ag system classification; global cropland extent)</p> <p><b>Milestone 4.2.1. 2012 (4).</b> Scoping of innovative decadal/near-term climate products to improve near-term climate prediction</p> <p><b>Milestone 4.2.1. 2012 (5).</b> Assessment toolkit components developed to analyze likely effects of specific adaptation and mitigation options in target regions, with a focus on rangelands, vulnerability assessment at sub-national levels</p>	<p>ILRI, ICRAF, CIAT, IWMI, ICRISAT</p> <p>CIAT, CIP, ILRI</p> <p>CIMMYT, IFPRI, ILRI, ICRISAT, IWMI, CIAT</p> <p>ILRI</p> <p>ILRI, IFPRI, IRRI, ICRISAT, AfricaRice</p>	<p>All CCAFS regions</p> <p>All CCAFS regions</p> <p>All CCAFS regions</p> <p>All CCAFS regions</p> <p>All CCAFS regions</p>
Output 4.2.2 Socially-differentiated decision aids and information developed and communicated for different stakeholders	<b>Milestone 4.2.2. 2012 (1).</b> Partnership and strategy development for targeting decision support tools	TBD	All CCAFS regions
<b>Objective 4.3. Refine frameworks for policy analysis</b>			
Output 4.3.1 Climate change impacts assessed at global and regional levels on	<b>Milestone 4.3.1 2012 (1).</b> Land use modeling and aquaculture (WorldFish activity) added to the IMPACT model and model intercomparisons with other	CIAT, CIMMYT, CIP, ICRAF,	Global, EA, WA, IGP

OUTPUT	2012 MILESTONES	PARTICIPATING CENTERS	REGION
agricultural systems (socially and gender differentiated producers and consumers, and their natural resources), national/regional economies, and international transactions and potential of international and regional policy changes to enhance adaption and support agricultural greenhouse gas emissions mitigation	major global model undertaken. <b>Milestone 4.3.1 2012 (2).</b> Analysis and report for the United Nations Committee on Food Security (CFS) on Food Security and Climate Change.	IFPRI, ICRISAT, ILRI, IRRI IFPRI	Global
Output 4.3.2 Analyses of the likely effects of specific adaptation and mitigation options, national policies (natural resource, trade, macroeconomic, international agreements) including gender/livelihood groups, and communicated to key local, national and regional agencies and stakeholders.	<b>Milestone 4.3.2 2012 (1).</b> National and regional studies complementary to the CFS global study.	Same as for Milestone 4.3.1	Global, EA, WA, IGP
Output 4.3.3 Capacity built at CGIAR, NARS, and international organizations to perform global and regional analyses of the effects of policy changes using tools developed in output 4.3.1	<b>Milestone 4.3.3 2012 (1).</b> Activities held at CGIAR, NARS, and international organizations to build capacity to utilize the modeling tools developed under milestone 4.3.1. 2012	Same as for Milestone 4.3.1	Global, EA, WA, IGP

**Changes made to Objectives, Outputs, Milestones:** No significant changes in strategy were made. Changed wording was mostly related to the consolidation effort.

**Key pathways to impact:** Figure 5 summarizes the impact pathway envisioned for Theme 4. Key opportunities in 2012 relate to Rio+20 and the Committee on Food Security, where the High-Level Panel of Experts will commission a report on Climate Change and Food Security, with Theme Leader of 4.3 leading the team to write the report. Another opportunity is the Planet Under Pressure conference in early 2012, at which some of the initial regional scenarios quantification results will be presented to a wide audience.

## CCAFS Theme 4 Integration for Decision Making Impact Pathway

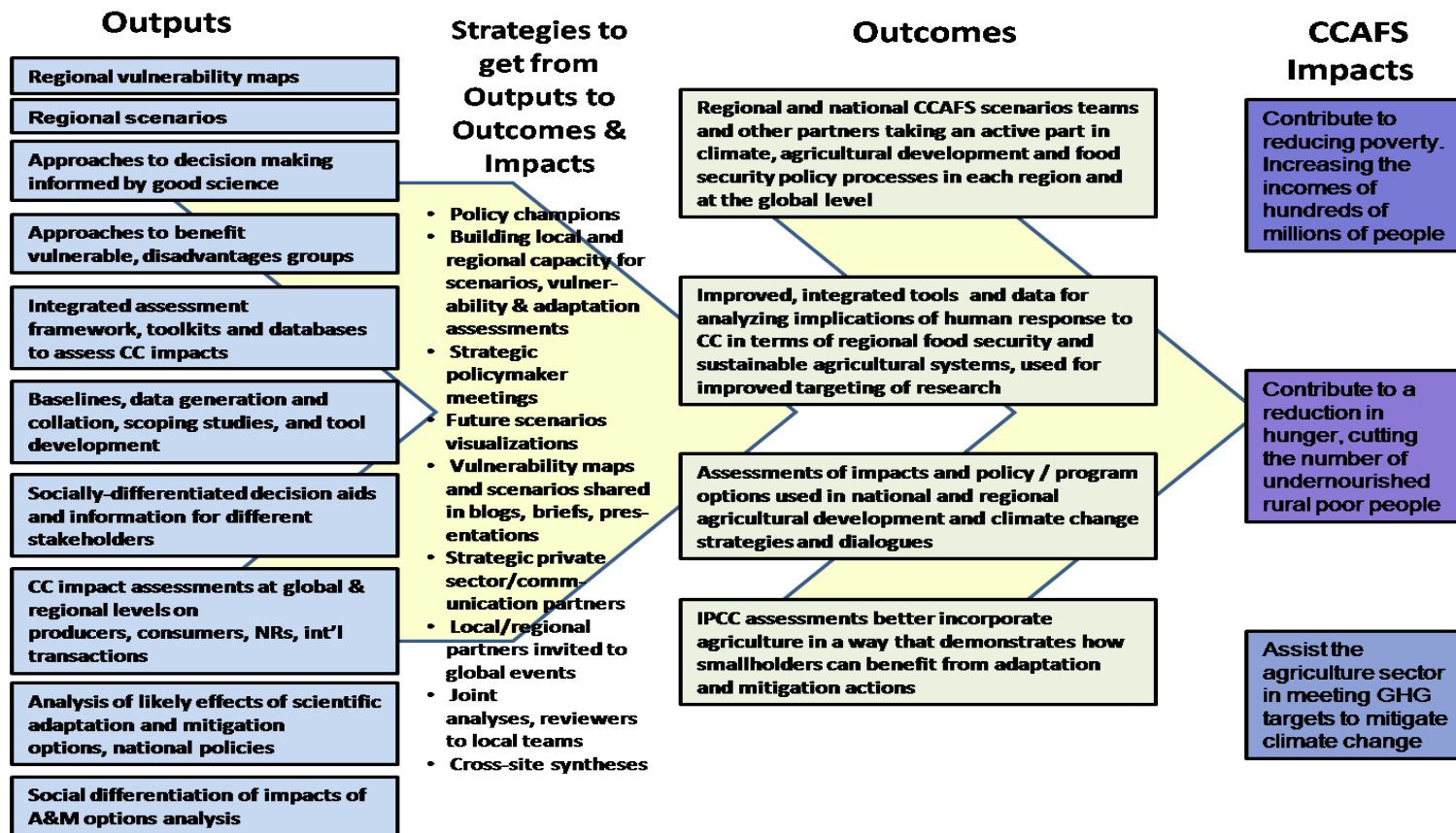


Figure 5. Theme 4 Impact Pathway

**Major communications efforts:** Theme 4 researchers are pursuing multiple strategies aimed at innovative and effective engagement and communications. These are happening at global, regional and national and local/site levels (e.g.). In addition, global communication specialists, Panos, are a key partner in 2012 helping us develop multiple communication products aimed at making CCAFS research products widely accessible, useful and used, and visualization and modeling approaches will be linked in order to tailor CCAFS research products to multiple end users. A strategy for climate change communications and social learning in climate change will be developed during 2012 based on an open call, with the aim of identifying long-term partners to help CCAFS develop appropriate decision aids that are appropriate for socially-differentiated stakeholders.

**Major issues that need to be tackled going forward:** There are some substantial gaps, notably in the areas of participatory action research (PAR) (particularly at the CCAFS benchmark sites) and gender research. In both these areas we will make substantive investments in 2012. One additional PAR Activity will be planned in each region – these would tackle the priorities identified through the initial PAR process of 2011. In addition one additional Activity in gender research will be added, to be guided by the gender strategy now being prepared (see section 12). The general problem that very few Centers submitted gender-related activities in their 2012 Center Activity Plans has been mentioned in Section 1. We will encourage the involvement of the newly trained gender-CC analysts in each region and identify remaining gender-CCAFS theme related research gaps and get more centers involved in filling them in 2013. Cross-centre sharing, and scaling out, of successful approaches and methods (e.g. scenarios, vulnerability mapping, outcome mapping with partners, innovative engagement approaches, social media and other communication strategies) for linking knowledge with action, also remains a challenge. Much attention will be paid to fostering inter-centre collaboration in these areas. A key gap identified in all regions is the lack of decision support tools by national level decision makers for making investment choices amongst alternative agricultural technologies, practices and development pathways. One additional Activity will be added in each region given the critical need for such tools for both mitigation and adaptation options (now that Climate Finance is starting to flow).

**Budget:** The Theme 4 budget for 2012 is US\$16.7 million. 18% of the Center Activity budget goes to this Theme. The table below shows the distribution of Theme 4 funds across CG Centers. The major portion of the budgeted contributions is concentrated in four Centers: CIP, ICRAF, IFPRI and ILRI, being these three 70% of the Center total. The Theme Leaders total budget is shown separately as well as the Regional Program Leaders budgets which have been broken down into Themes in order to ensure that regional activities are implemented in line with the agreed agenda.

Center	Budget	Share (%)
AfricaRice	24	0%
Bioversity	-	0%
CIAT	369	5%
CIFOR	-	0%
CIMMYT	490	6%
CIP	932	11%
ICARDA	-	0%
ICRAF	1,229	15%
ICRISAT	606	7%
IFPRI	1,012	12%
IITA	284	3%
ILRI	2,599	32%
IRRI	28	0%
IWMI	-	0%
WorldFish	611	7%
<b>Center subtotal</b>	<b>8,182</b>	<b>100%</b>
Theme Leaders	5,143	
Regional Program Leaders	3,400	
<b>Total</b>	<b>16,726</b>	

**Table 7. Theme 4  
2012 total budget**

Objective #	Budget	Share
Objective 4.1	5,433	32%
Objective 4.2	8,257	49%
Objective 4.3	3,036	18%
<b>Total</b>	<b>16,726</b>	<b>100%</b>

**Table 8. 2012 budget per Theme 4 objectives**

Shown is the budget per Theme objective. Within Theme 4 the largest budget goes to Objective 4.2 (Assemble data and tools for analysis and planning)

## 6. East Africa Region

**Regional Program Leader:** James Kinyangi (ILRI)

**Background:** East Africa is one of the regions experiencing rapid rates of population growth. Future projections show that current infrastructure for the production and delivery of food will be overstretched, threatening the already precarious food security situation. The nature of rain fed agriculture and the smallholder production base will further suffer exposure to climate risks that will likely translate into impacts that require significant long-term investments in the human and biophysical environment. Poverty and inequality exacerbate problems caused by exposure to climatic changes. The regional program will to help raise the awareness among policymakers and farmers of these impacts and to support research into appropriate risk management, long term adaptation and mitigation options.

In 2012, emphasis will be placed on integrating CCAFS thematic research through building a network of partnerships. Participatory action research will be implemented at six benchmark sites. A Regional Learning Partnership (RLP) has been launched to build capacity for evidence-informed policy making across eastern Africa. The RLP will continue to develop partnerships with some of the key international multi-lateral and non-governmental agencies, while at the same time integrating with the work of national agricultural, natural resource, environmental and meteorological agencies, the private sector and local non-governmental organizations (NGOs). The RLP will work across scales, from local to regional levels. For example, CCAFS action research at village level will provide empirical data to inform local-national-regional policy processes. <http://ccaafs.cgiar.org/where-we-work/east-africa>

**Key staff:** James Kinyangi (Program Leader - 100%), Assenath Kabugi (Program Assistant - 100%), Regional Science Officer TBD (100%)

**Major partners and their roles:** These are Regional climate change, agriculture and food policy research (action research partners - NARES, Universities, NMHS and policy processes - EAC/COMESA/FANRPAN); Farmers' organizations and community based groups at CCAFS benchmark sites, mobilizing local level actions and promoting knowledge sharing through farmer exchange, public hearing and dialogue with scientists and decision makers. Broadcast media and cellular telephone technology will be involved in the development and delivery of climate services and products such index based insurance, farm input services and early warning systems. Rural radio will be used to stimulate dialogues with farmers on climate risk management options and climate change adaptation measures. There will be linkages to other regional initiatives tapping into a wider network of expertise, knowledge and regional networks and align key research and policy directed interventions.

**Key pathways to impact:** One of the key pathways for engagement is through the Regional Learning Partnership (RLP). The RLP will galvanize key regional economic commissions, institutions, policy entities, farming organizations and researchers and is focused on integrating CCAFS thematic research as well as informing the science - policy process. Through shared learning on climate information and services the partnership is promoting enhanced up-scaling and sharing of knowledge and tools. A knowledge sharing workshop will be held to consolidate partners' outputs and a major exhibition at one of the regional government and/or ministerial conferences such as with AMCEN will be planned to engage policy



makers and share widely research results. Feedback from the workshop will be used to further refine RLP knowledge outputs. In addition, a capacity development approach will be adopted where fellowships will be granted to young scientists for mentorship programs while developing approaches for integrating gender and social differentiation at local scales.

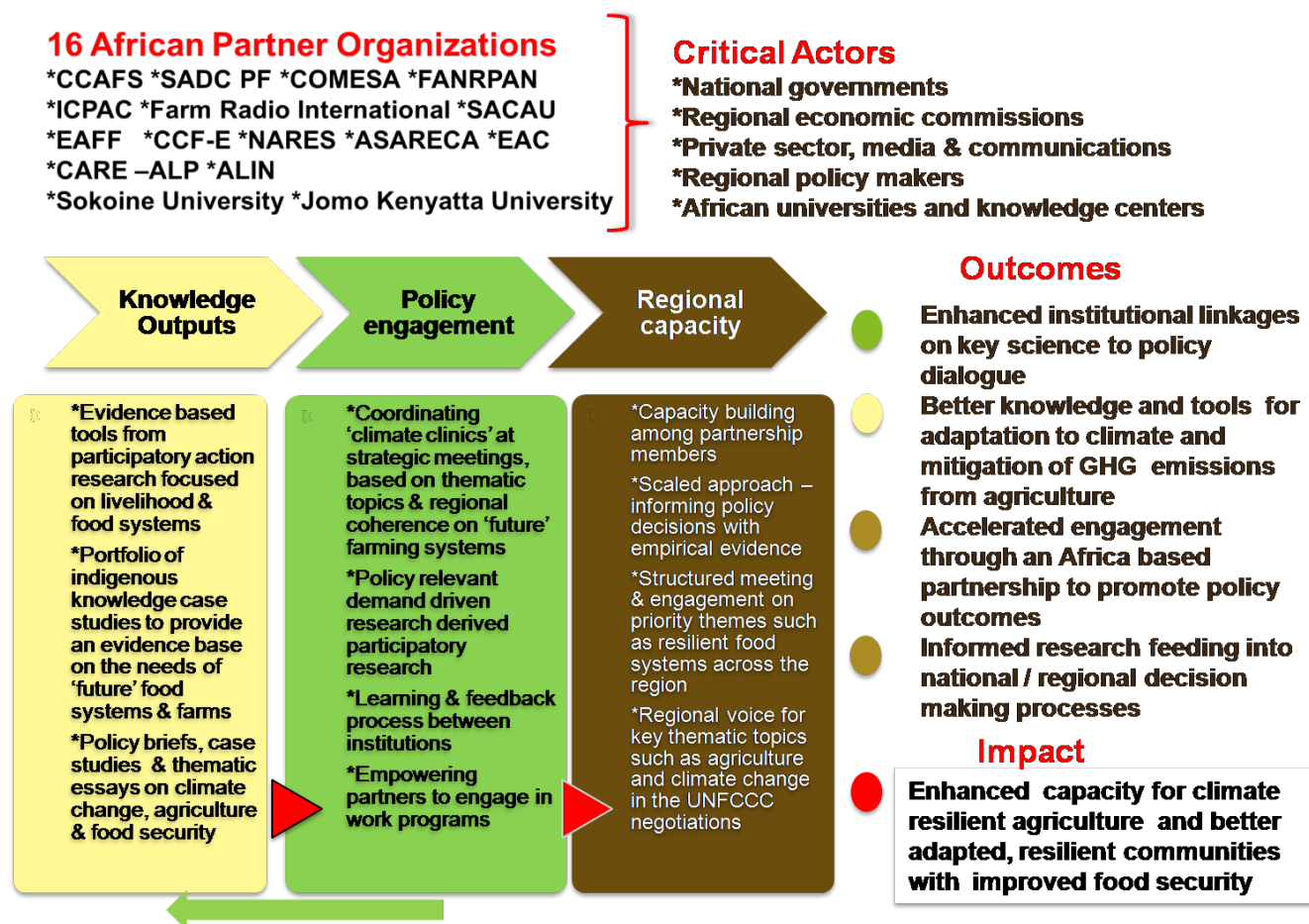


Figure 6. The Regional Learning Partnership (RLP) is an African partnership that is focused on informing the interface of science and policy.

**Major communication efforts:** To effectively communicate CCAFS outputs and those of the participating partners, the innovative use of ICTs will be explored, including building a communication platform that fosters knowledge sharing through the use of savvy tools, particularly web applications through the development of a website. The possibility of using existing CCAFS communications tools will be explored before creation of any new platforms. The core focus of communication will be on: cyclical feedback of action research from CCAFS benchmark sites and grassroots partners into the RLP and then into policy relevant outputs. Also, a joint effort with COMESA on the climate impacts of the food insecurity situation in the Horn of Africa will provide a technical paper, a documentary integrating high-level political voices, and a policy brief to outline pragmatic interventions on transformative actions required to increase climate resilience of agriculture in the drylands of east Africa

**Major issues that need to be tackled going forward:** While there are many Centre activities in regions they are not, because of the inherited agenda, well aligned with CCAFS strategy or taking place in CCAFS sites. As indicated in Theme 4 Objective 1 new investments will be made in each region to improve alignment. More emphasis is needed on food security, rather than the current focus on production. In 2012 a major effort will be made to scope out the key research topics related to the broader food system, including post harvest loss as well as new and emerging pests and disease patterns in agricultural systems

**Budget:** East Africa Region budget for 2012 is US\$2.66 million. Budgets for regional programs have already been indicated in the Theme budgets as regional programs are integrated into themes. The budget shown here is the overall budget (across all themes)".

BUDGET (EA)	2012
Personnel Costs	221
Travel	30
Operating Expenses	40
Training & Workshop	100
Collaborators/Partnership Costs	2,082
Capital and other equipment	3
Contingency	-
<b>Subtotal</b>	<b>2,475</b>
<i>Institutional Overhead</i>	<i>183</i>
<b>TOTAL</b>	<b>2,658</b>

**Table 9. East Africa Region 2012 total budget**

## 7. West Africa Region

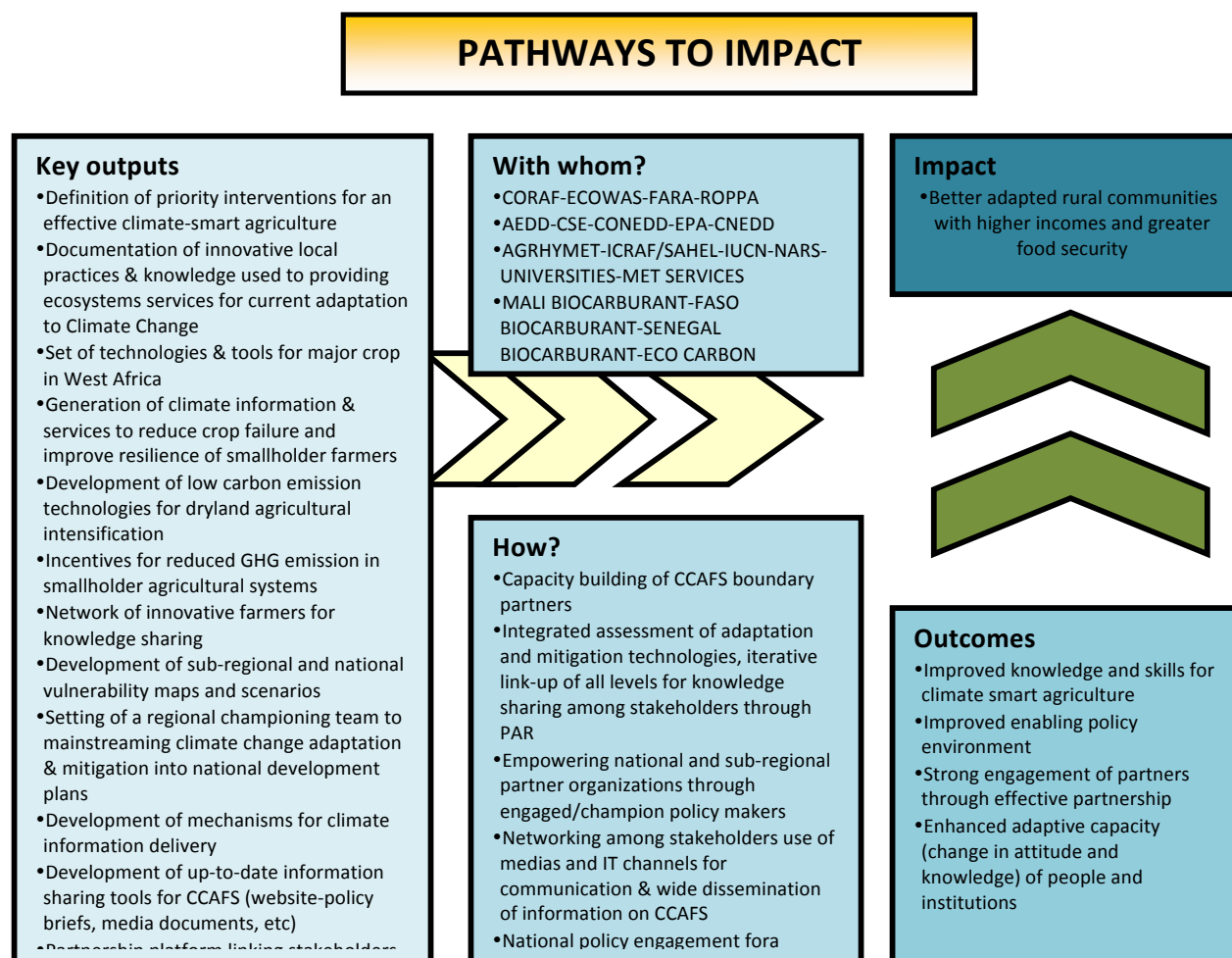
**Regional Program Leader:** Robert Zougmore (ICRISAT)

**Background:** West Africa is characterized by large rural populations who depend on rain-fed, cereal-based subsistence agriculture in the sub-humid and semi-arid zones and on pastoralism in the arid zones. These areas are highly vulnerable to climate variability and sensitive to any future changes of climate. Increasing frequency and severity of episodic climate shocks – primarily drought – have led to major food crises in the dry lands of this region, with resultant loss of lives and livelihoods, and a cycle of costly disaster relief competing with long-term development for scarce resources. The regional engagement strategy aims to identify partnerships, opportunities for and impediments to action, measures and communications channels needed to sustain and broaden successful outcomes, knowledge and capacity gaps, and potential policy responses to support adaptation and mitigation to climate change. A first step consisted in documenting current status and trends of climate change adaptation and mitigation in agriculture in select countries. Mechanisms to ensure coherence among themes from field to national and regional levels have been initiated, including a cross-agency team approach to planning and implementation, common conceptual framework, joint fieldwork at shared benchmark sites, sharing of data and results, and integrated impact pathways at regional level. This will be pursued in 2012 for the sound implementation of the following four major components: (1) Adaptation and mitigation practices and technologies through participatory action research (PAR); (2) Capacity strengthening; (2) Decision making support for policy makers; and (4) Communication.

**Key staff:** Robert Zougmore (West Africa Program Leader - 100%), Science officer TBD (100%); Administrative Assistant TBD (100%)

**Major partners and their roles:** CORAF, FARA (policy engagement at regional level, based on existing platforms and channels, to reach, e.g., ECOWAS, ROPPA, Ministries of Agric and Environment); ICRAF (regional coordinating partner, comparative research and impact framework); AGRHYMET (regional player, linking with national meteorological services and NARES to develop climate risk management strategies, tools and information); Biocarburant Foundation (implementing partner) NARES and local partners (research and policy)

**Key pathways to impact:** One of the major outcomes proposed is “stakeholders and partners capacitated to mainstream climate change into agricultural production and food security plans/strategies in West Africa”. Figure 7 synthesizes the strategy that will allow working across themes and with relevant partners in order to design climate smart agriculture models that can be scaled-up. A group of championing individuals identified from national policy institutions will be capacitated to form the backbone for an innovative policy decision making that insure the mainstreaming of climate change in agricultural plans.



**Figure 7. WA Pathways to Impact**

Holistic, cross-disciplinary and multi-stakeholder research will be central to the impact pathway in West Africa; with participatory action research (PAR) prominent. Such research should fully consider the sustainability of the whole farming system, local knowledge of environmental variability in agricultural landscapes, farm and non-farm livelihood streams, and flashpoints for conflict between different producer groups, as opposed to research on just boosting productivity of discrete components of the food production system. PAR will test, improve and monitor strategic innovations supporting climate-smart agriculture. In the Sudano-Sahelian and Sahelian regions, examples of priority production interventions with expected mitigation and adaptation synergies are soil nutrient management (e.g., organic manure and fertilizer management

through micro-dosing), agroforestry (e.g. jatropha and drought tolerant varieties of maize, millet and sorghum), rehabilitation of degraded lands, and water management. Conservation agriculture must be promoted within these cropping systems in order to increase carbon sequestration and to improve soil health. In the humid zones, in addition to agricultural intensification, interventions would focus on agriculture as a driver of deforestation in areas of REDD+ projects, and related policies, incentives, institutional arrangements. Potential mitigation practices will be examined from the perspective of carbon sequestration, mitigation incentives, institutional arrangements, gender impacts, etc. Work will be pursued on the analogue method and methods for innovative knowledge sharing and networking among farmers. Climate risk management strategies will focus on downscaled seasonal climate - crop forecasting – Index-based crop insurance; drought-tolerant varieties; climate information delivery mechanisms.

At the policy level, CCAFS will support the use of tools, methods, data collection and analysis that support adaptation and mitigation policy decisions that are being made as climate finance becomes a reality. A regional working group will be formed to develop tools and information (e.g. scenarios, emissions factors) relevant to the region for the quantification of greenhouse gases. This group will also be a platform for capacity building at national level. A group of adaptation experts from national institutions (NAPAs, Universities, NGOs...) will be formed to interact on tools and information pertaining to transformational adaptation.

Capacity in the region is weak on all fronts. Longer-term capacity will be sought through liaising with donors and others who can help develop curricula and provide graduate training. The WASCAL project which aims to strengthening the research infrastructure and capacity in West Africa related to climate change and to pooling the expertise of ten West African countries and Germany, will be a key partner.

**Major communication efforts:** An active engagement and communication strategy underpinning all activities is needed to enable rapid exchange and learning across sectors and between the field and national levels. In addition to sharing relevant knowledge and information with partners in the region during the annual regional stakeholder meeting, a website in French will be launched in 2012, where CCAFS publications, reports, policy briefs, videos, blogs will be posted. Two policy dialogues gathering national stakeholders (scientists, policy makers, private sector, etc.) will be held organized in two selected countries around a specific subject of interest (ex: seasonal forecasting; food crisis). Also, a series of media events with major press, radio, T, in the region will be planned to share key messages and allow their widespread dissemination.

**Major issues that need to be tackled going forward:** As in the other regions, there is a limited work being conducted in the CCAFS baseline sites. This will start to be rectified in 2012 through new investments (Theme 4, Objective 1). There is an urgent need for tools for decision makers to make investment choices amongst alternative agricultural technologies and practices. This will also be subject to a newly initiated Activity in 2012 (Theme 4, Objective 2).

**Budget:** West Africa Region budget for 2012 is US\$2.66 million. Budgets for regional programs have already been indicated in the Theme budgets as regional programs are integrated into themes. The budget shown here is the overall budget (across all themes).

BUDGET (WA)	2012
Personnel Costs	273
Travel	42
Operating Expenses	63
Training & Workshop	35
Collaborators/Partnership Costs	2,054
Capital and other equipment	3
Contingency	-
<b>Subtotal</b>	<b>2,470</b>
<i>Institutional Overhead</i>	<i>188</i>
<b>TOTAL</b>	<b>2,658</b>

**Table 10. West Africa Region 2012 total budget**

## 8. Indo-Gangetic Plains Region

**Regional Program Leader:** Pramod K. Aggarwal (IWMI)

**Background:** South Asia, home to more than 1.54 billion people, has shown tremendous progress in last four decades in food production and availability, yet 1/4th of the world's hungry and 40% of the world's malnourished children and women live here. It lags behind in meeting most of MDGs. The Indo-Gangetic Plain (IGP) is a typical representative of the densely populated South Asia, spanning parts of Pakistan, India, Nepal and Bangladesh. It has historically been characterized by fertile soils, favorable climate, abundant surface and groundwater, and rice-wheat systems. It provides food security for millions of people in the region. But increasing population and incomes are leading to higher food demand, placing pressure on agricultural systems to produce more food on the same or less land and resources, whose availability is dwindling due to competition with other sectors. The region is prone to climatic risks such as floods, droughts, cyclones, heat waves. These stresses are projected to increase. In addition, the coastal regions are projected to face increasing salinity and sea level rise, whereas due to changes in rainfall and in glacier flows, the irrigation is likely to become more variable and uncertain. In the context of widespread rural poverty, depleting resource base, and rapid population growth, climate change threatens to additionally influence the fragile balance between production and consumption in this crucial "breadbasket" of South Asia. Meeting future needs while minimizing further environmental degradation is a challenging task for all countries of the region.

**Key staff:** Pramod K. Aggarwal (Program Leader - 100%); Charlotte Lau (project and communications Coordinator - 100%); Regional Science Officer TBD (100%); Administrative Officer TBD (100%).

**Major partners and their roles:** Nepal Agricultural Research Council, Bangladesh Agricultural Research Council and IFFCKO Foundation (participatory action research for climate risk management); National Bureau of Plant Genetic Resources, India (climate analogues and germplasm evaluation and conservation); Bioversity (climate analogues and germplasm evaluation and conservation); WorldFish (participatory action research in coastal regions of Bangladesh); IFPRI (prioritization of adaptation/mitigation interventions); IWMI (mapping floods and their impacts); Meteorology Departments of India, Nepal and Bangladesh (weather forecasting and associated agro-advisories).

**Key pathways to impact:** Figure 8 shows the key impact pathways to be followed in 2012. These include participatory action research at some selected sites in the region to demonstrate integrated approaches for climatic risk management, capacity strengthening of rural women leader in understanding climate change and the adaptation options, and of other stakeholders to understand and apply knowledge for climate linked germplasm evaluation and conservation, vulnerability assessment, and yield forecasting.

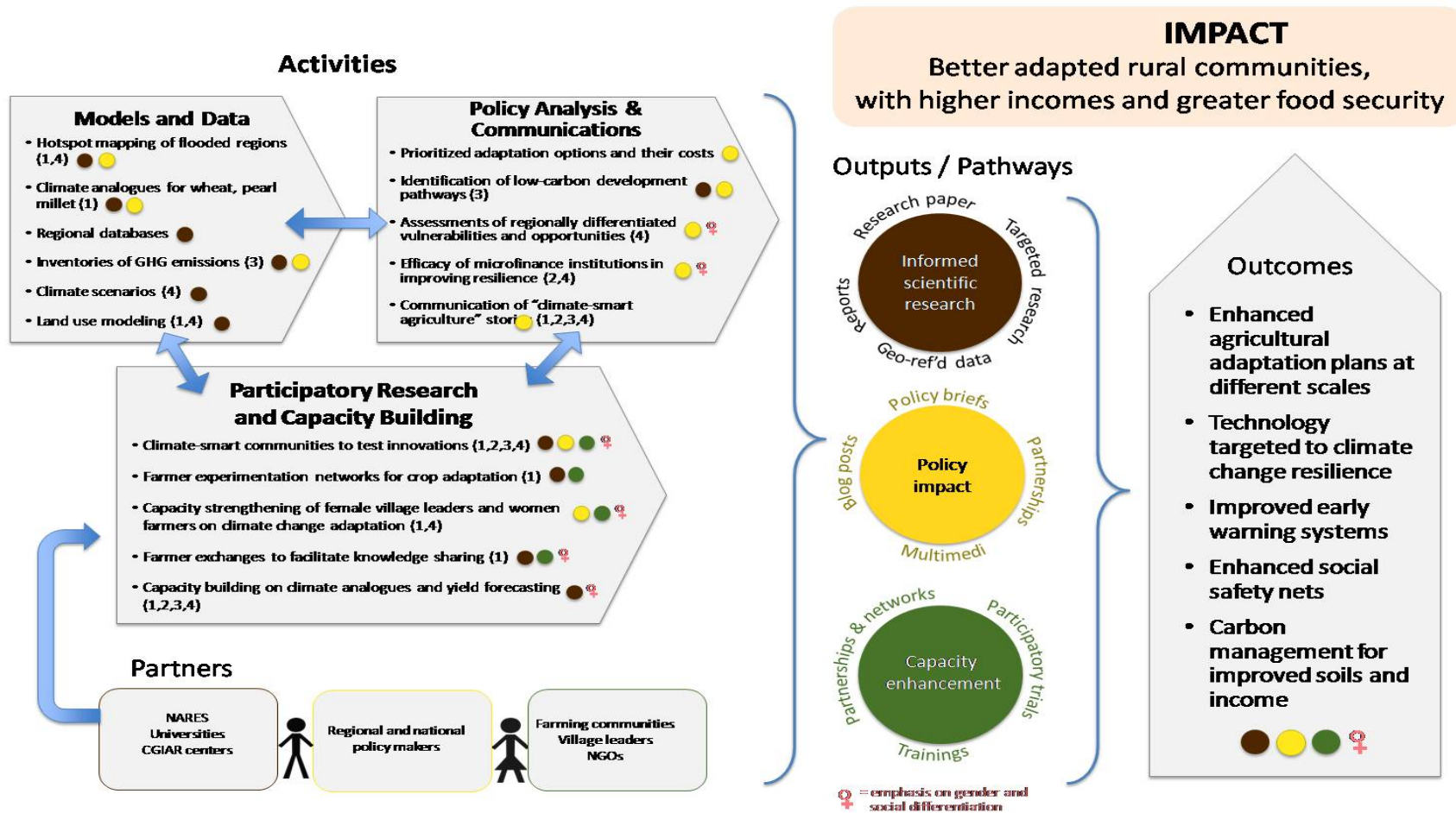


Figure 8. IGP Pathways to impact

**Major communication efforts:** The communications strategy in 2012 will consist of two parts: (a) Project-specific: It will match up all projects with publication outputs (e.g., internal report, CCAFS report, CCAFS working paper, or journal articles) and communications outputs (e.g., project



description for IGP webpage, blog post, event on CCAFS event page, photos, video, or AMKN data); (b) Regional program-wide: It will synthesize what CCAFS does in the region, succinctly and clearly. This will entail managing the IGP webpage, creating a brochure about the CCAFS-IGP program and projects, and publishing a short annual report on each year's research outputs.

**Major issues that need to be tackled going forward:** Emphasis needs to shift to developing a few key long-term partnerships and not based on small activities with limited funds which was the case in 2011 due to the start-up activities that were needed. A key need in the region is tools for national level stakeholders to make investment choices amongst different options for climate-smart agriculture. Work on this will be initiated in 2012. It is crucial to get more Centre activities in the baseline sites.

**Budget:** Indo-Gangetic Plains Region budget for 2012 is US\$2.66 million. Budgets for regional programs have already been indicated in the Theme budgets as regional programs are integrated into themes. The budget shown here is the overall budget (across all themes).

BUDGET ( IGP)	2012
Personnel Costs	263
Travel	63
Operating Expenses	210
Training & Workshop	32
Collaborators/Partnership Costs	1,878
Capital and other equipment	5
Contingency	-
<b>Subtotal</b>	<b>2,450</b>
<i>Institutional Overhead</i>	<i>208</i>
<b>TOTAL</b>	<b>2,658</b>

**Table 11. Indo-Gangetic Plains Region 2012 total budget**

## 9. New Regions

Two new regions will be initiated in 2012. In the CCAFS Program Plan we had set aside \$2.1 million per region, but we will plan for a slower start and instead use the funds saved to fill the key thematic and regional gaps identified above.

The proposed activities for the new regions are as follows:

- 1) Invite expressions of interest from partners and Centers to host Regional Program Leaders & make the selection of the regional's hosts (Jan-Feb).
- 2) Recruit Regional Program Leaders (Feb-Aug)
- 3) Recruit Science Officer (May-Aug)
- 4) Conduct stakeholder engagement and scoping study to select final countries for baseline sites; and raise additional funds where needed (July-Sept)
- 5) Conduct stakeholder engagement to select baseline sites (Aug-Oct)
- 6) Conduct stakeholder analysis and SWOT to define a regional research and engagement strategy (July-Dec)
- 7) Initiate research contracts to undertake the baseline survey and to initiate priority activities (Nov-Dec) (with baseline work initiated in 2013).

Due to the proposed late start of the two new regions, the reduced budget (expressed in US thousand) below is projected:

BUDGET	2012
Personnel Costs	240
Travel	40
Operating Expenses	20
Training & Workshop	10
Collaborators/Partnership Costs	477
Capital and other equipment	6
Contingency	-
<b>Subtotal</b>	<b>793</b>
<i>Institutional Overhead</i>	<i>87</i>
<b>TOTAL</b>	<b>880</b>

**Table 12. New Regions projected and reduced 2012 budget**

## 10. Global partnerships, engagement and communications

CCAFS objectives for partnerships, engagement and communications are to provide a credible and authoritative platform for scientific information, knowledge and tools on agriculture and food security under climate change, and to engage actively at all levels to facilitate user-driven research, science-based dialogue, knowledge sharing, and evidence-based policy. To achieve these objectives, strategic partnerships will be critical to ensuring that research maintains relevancy to dynamic policy agendas, scientific knowledge is co-generated and co-owned, and space is created for science-based dialogue among different interest groups.

CCAFS has a wide remit in this area and, in order to set annual priorities at the global level, the strategy is to engage in a small number of major activities with key partners each year, while keeping a wider set of partner relationships active. Many communications activities are handled by Themes, Regions and CGIAR Centres, with a limited number of products and events (those most strategic for global communications) managed by the Coordinating Unit. For 2012 the plans for major global activities are:

### Events:

- Rio +20 / ARDD: Messaging and sub-event(s) at Rio+20 including the possibility of holding ARDD at this event
- Bonn SBSTA and UNFCCC COP18: Depending on progress of agriculture at COP17, strategic sub-events and outreach
- Outreach on the Commission for Sustainable Agriculture and Climate Change, including support to Commissioners to attend key events
- Climate-Smart Agriculture Partnership: major event in Vietnam event, plus one or more other shared events
- Planet under Pressure: CCAFS to run three sessions, including presentation of the Commission results
- Presentation at one or more major private sector events, such as the UNEP Business and Industry Global Dialogue

### Synthesis products:

- “Small book of big facts”: Compilation of state-of-the-art best scientific quantitative statements on key parameters of food security, adaptation in agriculture and food systems, mitigation in agriculture and food systems (main target audiences: media, policy makers, implementation agencies, civil society organizations, farmers’ organizations and rural communities of practice)
- Options for “Climate-Smart Agriculture”: Quantified assessment of costs and benefits of different broad sets of technical actions in agriculture and post-harvest management (main target audiences: policy makers, implementation agencies, private sector, donors)
- Editorial in Science: High-level piece possibly linked to Commission outputs (main target audiences: policy makers and opinion leaders at international, regional and national levels, research community)
- Nine issues of AgClim Letters (main target audience: policy makers and opinion leaders at international, regional and national levels)
- Food Climate Research Network: Support to FCRN to improve understanding of climate change issues across the food system among its network (main target audiences: private sector, policy makers, implementation agencies, research community)
- Meridian Institute: participation in second phase of advisory services to UNFCCC negotiators and on options for early action (main target audience: UNFCCC negotiators)

- Review of agricultural adaptation projects in Africa: Cooperation with the German Development Institute (DIE) to assess lessons to date from major program interventions (main target audiences: policy makers, implementation agencies, civil society, farmers' organizations and rural communities of practice)

**Communications products and support activities:**

- Up to eight globally strategic reports and policy briefs
- Seminar for media selected as outreach targets
- Website: new design and functions planned for 2012; a French version will be added in 2012 in conjunction with the West African region
- The global communications unit will play a key role in 2012 in supporting the establishment of communications strategies and the implementation thereof in all target regions.
- Regular updates: by the communications consultant to subscribed stakeholders
- Director's monthly and quarterly bulletins

The global partnerships, engagement and communications budgets, as well as a few centrally-administered capacity enhancement activities (see section 4) are coordinated by the University of Copenhagen, as part of its role in the Coordinating Unit. The budget of the University of Copenhagen is as follows (expressed in US Thousand):

BUDGET	2012
Personnel Costs	483
Travel	70
Operating Expenses & Partners	1,077
Contingency	45
<b>Subtotal</b>	<b>1,675</b>
<i>Institutional Overhead</i>	-
<b>TOTAL</b>	<b>1,675</b>

**Table 13. Global partnerships, engagement and communications 2012 budget**

## 11. Capacity enhancement

CCAFS seeks to help both researchers and research users to enhance their own capacity to demand, conduct, use and critique research on the nexus among climate change, agriculture and food security. For researchers, the CCAFS objective is to provide opportunities to enhance personal and institutional capacity in the emerging range of conceptual frameworks, databases, analytic tools and means of communication, for example on policy options and on uncertainty. CCAFS aims to assist decision-makers to be better users of knowledge, and also better agenda-setters – more effective in their abilities to interrogate current knowledge and priorities around climate change and food security, and to develop convincing alternatives.

CCAFS capacity enhancement activities are mainstreamed within the Milestones (units of research and policy engagement work of between \$0.5 and \$1.5 million) under the four research themes, and carried out by CCAFS theme and regional staff and by core partners. Most research and policy activities have explicit capacity enhancement components. Some of the major initiatives for 2012 are highlighted below.

Under Theme 1, CCAFS will work with national research partners in at least 10 countries in the three regions to enable them to manipulate and apply spatial and temporal analogues, based on the Analogue concept and method at the core of the Theme. Videos and guidance manuals will allow research partners to scale out these skills among colleagues. Once the Analogue method has been used to identify agro-climatic analogue sites, CCAFS will invest in capacity enhancement of farmers via farmer exchanges between the sites. At least 40% of farmers involved will be women.

Under Theme 2, multiple activities will enhance the capacity of practitioners and researchers to apply tools to improve management of climate risks in agriculture. The major focus in 2012 will be enhancement of local capacity in seasonal weather forecasting. The regions, led by the Regional Program Leaders, will be instrumental in providing the requisite training, access to software and facilities and ongoing support to ensure that new capacities are strongly embedded in relevant agencies.

Under Theme 3, a key agenda for 2012 is raising capacity in the understanding, prioritisation and quantification of mitigation potentials in the regions. The strategy to enhance capacity in the longer-term will involve an interlinked set of training exercises (in inventories and tools), regional professional networks, and an international network of PhD students working on agricultural mitigation in smallholder contexts (CLIFF). CCAFS will support local researchers to deliver synthesis reports and data to the IPCC, as well as national and regional bodies, and will also provide capacity building to decision-makers to understand and utilise these data. Additionally, Theme 3 will provide training for national policy makers, project implementers and communities on designing payments for carbon to benefit poor female and male farmers.

Under Theme 4, CCAFS will place particular emphasis in 2012 on supporting the initiatives of key partners, such as farmers' organizations, to strengthen their own engagement and communication approaches. In tandem with the roll-out of the gender strategy, CCAFS will provide materials, training and support to enhance gender analysis in research and policy responses around climate change adaptation and mitigation.

Additionally, Theme 4 will provide a series of workshops, training modules and support functions to raise capacity in specific tools that are being developed and refined under the program, such as simulation models and surveillance methods.

The CCAFS Regions will take the lead on several of the key capacity enhancement activities, integrating across the Themes. Perhaps most importantly, in 2012 the Regions will begin to work with policy makers to develop appropriate decision support systems for prioritising among adaptation and mitigation options at the national and sub-national scales. This long-term activity will involve iterative design and testing of technical, economic and deliberative tools by CCAFS-associated researchers and policy-makers. This process will directly link capacity enhancement in science and in decision-making.

In addition to the above highlights, CCAFS will provide one centrally administered competitive student award in 2012 and several internships and short-term positions for students, based with Regional Program Leaders, Theme Leaders and at the Coordinating Unit. CCAFS will invest in supporting local research partners to attend and contribute to international scientific conferences, prioritising a core group of long-term strategic partners as an international community of practice. The Coordinating Unit will also work with three key partners (START, CTA and FCRN) to add value to their capacity enhancement activities with farmers' organizations, policy makers, non-OECD media, local private sector and governmental implementation agencies.

## 12. Social differentiation and gender

CCAFS is in the process of developing a comprehensive social differentiation and gender strategy, with the following **objective**: to integrate social differentiation and gender across the program's research and partnerships through targeted social differentiation and gender research and strategic capacity development. Gender analysis is used to inform and deepen the relevance of research themes aimed at promoting tools and strategies for tackling food insecurity in the face of climate change and the use of new institutional arrangements and incentives that favour resource poor farmers, particularly vulnerable groups and women.

In order to integrate gender analysis in climate change, agriculture and food-security research across the Program's Themes, and support and strengthen capacity development and organizational gender mainstreaming, the following activities will be implemented in 2012:

- 1) Joint refinement and field testing with FAO of training materials with appropriate methods for addressing gender issues.
- 2) Training partners in gender-sensitive research approaches (that will in turn train others in the CCAFS target regions) and sponsoring their participation in CCAFS- related events; assessing and monitoring needs for training and maintaining a roster of suppliers of training.
- 3) Monitoring and ensuring the inclusion of gender as an issue whenever appropriate in CCAFS policy briefs, guidelines, manuals, tools, etc.
- 4) Developing a page on the CCAFS website and facilitating a community of practice for knowledge-sharing and collaboration in climate-change related gender research.
- 5) Identifying knowledge and information gaps for gender-disaggregated analyses and seeking ways to redress these.
- 6) Providing gender-related inputs to CCAFS problem diagnosis, priority setting and targeting by conducting comparative analysis of gender-disaggregated data (e.g. collected during the baseline surveys) and learning across CCAFS regions and sites, contributing to the Program's scenario development, ex ante analysis and policy dialogue.
- 7) Using the gender strategy to guide and support the application of gender analysis in the design and testing of CCAFS adaptive and mitigation strategies, technologies and institutional arrangements, addressing social differentiation and gender issues critical for their relevance and acceptability to end-users.
- 8) Implementing case studies and participatory action research in CCAFS benchmark sites to address CCAFS theme-related gender questions.
- 9) Contribute to the recruitment and leadership development of women scientists working on CCAFS Theme research questions and sponsor their participation in important CCAFS-related events.
- 10) Conduct a competitive small grants fund aimed at research capacity strengthening for women researchers working on gender and social differentiation in CCAFS target regions.

The budget for gender and social differentiation activities is mainstreamed into theme budgets, the intention being to allocate 30% of the total budget to such work. For the Theme Leader and Regional Program Leader budgets we know that we are achieving this target, but, at the time of writing, we await an analysis of the Center Activity Plans, where we believe the target will not be met. We plan to make an additional investment of \$250,000 in 2012 in Theme 4.3 to stimulate more gender work in Centre Activity Plans. The focus of this investment will be decided once the gender strategy is complete.

### 13. Ex ante impact assessment, internal learning, monitoring and evaluation

#### Ex ante Impact Assessment

In 2012 Theme 4.3 will continue to build the modelling framework for ex ante impact assessment at the broad level (global, continental, regions), and model development for more local analyses (at farm and household level) will be initiated within Theme 4.2 (described under the Themes). In addition the first priority setting exercises will be conducted in 2012 with key stakeholders (the plans for this will only be made in November at the Program Management Committee (PMC) meeting).

#### Internal Learning

To ensure that we constantly learn from the implementation of CCAFS, considerable attention will be given to internal learning.

What	When	Who
a. 360° evaluation (by peers, subordinates and supervisors) of Theme Leaders, Regional Program Leaders, CU staff	January	Peers, Sub-ordinates, Supervisors
b. 360° evaluation of Centre performances	April	PMC, Contact Points
c. Evaluation of 2010 report of activities	April (TBC)	ISP
d. Progress against major indicators assessed	April (TBC)	ISP
e. Ongoing feedback from stakeholder groups in regions and globally (through targeted activities designed to reflect on research priorities), and annual reflection on impact pathways and need for modification of strategy/ Outcomes/ Outputs/ Milestones	June	PMC
f. Facilitated reflection on the progress recorded on key success factors	September	PMC and external facilitator
g. Revisit risk analysis	September	PMC

#### Monitoring

As soon as the principles for monitoring and evaluation are completed by the Consortium Office (CO) the priority is to finalize a CCAFS Monitoring and Evaluation strategy. In the course of 2012 we will be expected to submit our first monitoring report to the CO. The data for monitoring will all have been collected in the above internal learning activities.

What	When	Who
a. Approval of CCAFS Monitoring and Evaluation strategy	April	ISP
b. Monitoring report to be submitted to CO – a report based on d above	September	PMC



## Evaluation

All that will be required at this point is likely to be on-going attention to the baselines survey, as appropriate; and CIAT/ISP commissioned external evaluations. A key evaluation to be conducted in 2012 is the evaluation of governance and management systems.

What	When	Who
a. Ensure that the baseline data from households, villages and organisations is publically available on the web	January	Theme 4.2
b. Plan for new baseline surveys to be initiated in 2013 in newly selected regions	November	Theme 4.2
c. Centre-commissioned evaluation of the governance and management system of CCAFS	April – TOR finalized July -Sept– work conducted Oct-Nov – report evaluated	ICIAT Evaluator CIAT
d. Plan for Centre-commissioned evaluations for 2013	November	CIAT

The budget for ex ante impact assessment, internal learning, monitoring and evaluation is mainstreamed into theme, region and CU budgets, and is expected to be 0.6% of the total budget allocated to Window 1 and Window 2, and is shown as “Monitoring/evaluation” in the Tables 13 and 14

## 14. Administration, coordination and management

### Internal collaboration platform

CCAFS generates a lot of data, information and knowledge. CCAFS staff and partners need to work more closely together, regardless of their location. To do this they must have the tools necessary to ensure the efficiency and effectiveness of online team collaboration.

Effective teamwork comes from understanding the team’s needs and culture, the processes it uses to achieve its goals, and the tools it uses:



Figure 9.

On the basis of thorough analysis the CCAFS communications team together with the CGIAR Consortium Office have worked out an internal communications platform to be rolled out in 2011 and 2012, including training. The platform includes document sharing, calendar functions, database management, searchable repository, collaborative document production, asynchronous discussions and forums.

An overview of the internal communications platform:

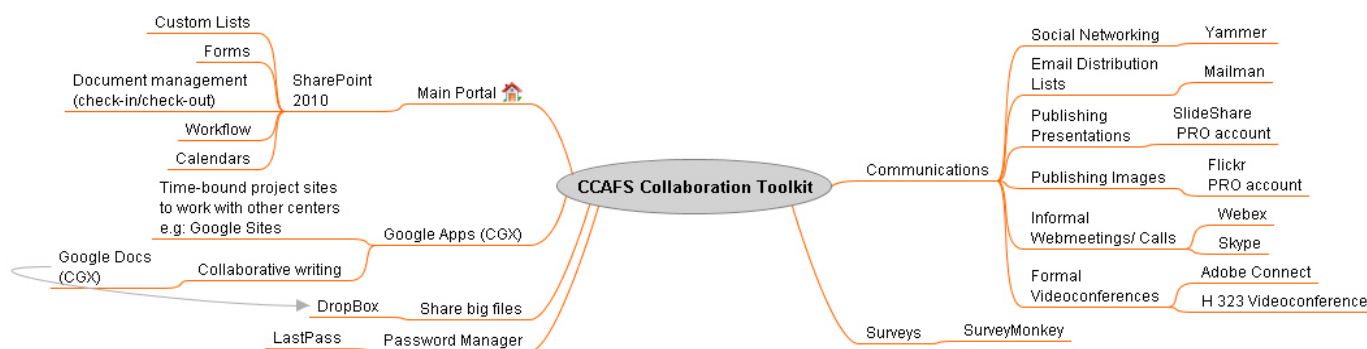


Figure 10. CCAFS Collaboration Toolkit

### Program Management Committee meetings

The University of Copenhagen, Faculty of Life Sciences that hosts the CCAFS Coordinating Unit has invested heavily in videoconference facilities to get optimal facilities for such conferences to limit the number of face-to-face meetings to save time, money and CO2. The CCAFS Program Management Committee comprising connections from 10-15 different locations is using the facilities for its monthly video conferences, facilitated by the university's technical staff. The functionality of the system leads to a reduction of the need for face-to-face meetings even if such meetings cannot be completely eliminated.

The Program Management Committee meets face-to-face twice a year back to back with the ISP meetings and meets face to face with CGIAR Contact Points once a year at a seminar linked to major international events or ISP meetings for reasons of efficiency.

## 15. Organizational chart

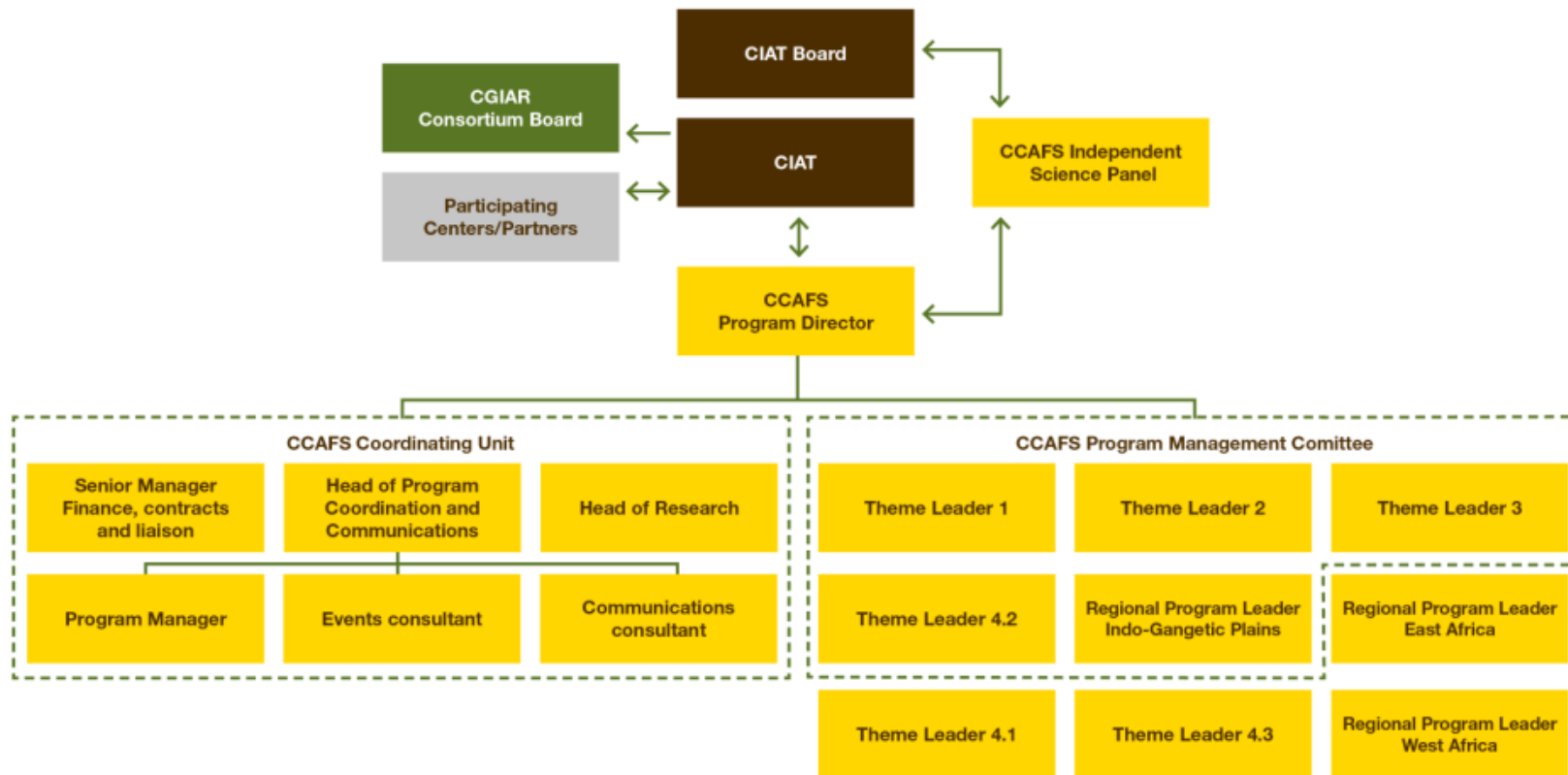


Figure 11.CCAFS Organizational Chart

# 16. Summary budget 2012 - (Expressed in USD thousands)

The 2012 CCAFS budget is US\$72 million. This represents a 14% increase over 2011 (US\$63.2 million). The portion of the budgeted increase corresponds to the two new regions as described in Section 9 above. Partners play a significant role in CCAFS therefore a 32% of the 2012 budget is planned to be allocated to these. Projected expenditures on personnel stand at 31% and the institutional overhead stands at 13% this being a combination of Center Overhead rates.

CCAFS	Center Activity	Theme & Regional Program Leader	Coordination, Synthesis & Outreach	TOTAL	Share (%)
Personnel Costs	18,495	2,303	480	21,279	31%
Travel	2,421	441	75	2,937	4%
Operating Expenses	8,050	531	374	8,955	13%
Training & Workshop	1,487	771	33	2,290	3%
Collaborators/Partnership	6,526	14,180	1,675	22,381	33%
Capital and other equipment	1,386	45	-	1,431	2%
Contingency	592	-	42	634	1%
<b>Subtotal</b>	<b>38,957</b>	<b>18,271</b>	<b>2,679</b>	<b>59,907</b>	<b>87%</b>
Institutional Overhead	7,106	1,449	181	8,736	13%
<b>TOTAL</b>	<b>46,063</b>	<b>19,720</b>	<b>2,860</b>	<b>68,643</b>	<b>100%</b>

CIAT pass-through	2,174
CGIAR System Costs	1,051
Monitoring/evaluation	300

<b>GRAN TOTAL</b>	<b>72,168</b>
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Table 14: 2012 CCAFS Budget by Natural Classification

2012 budget figures have been updated by each of the Participating Centers under the assumption that the total CGIAR fund request should remain at the same level as it is in the CCAFS Program Plan. Distribution amongst Themes has been relocated by the Participating Centers according to their updated 2012 Activity Plans. US\$56 million is requested from the CGIAR Fund and US\$14.6 million come from bilateral sources from Center Activities. The latter has been increased in approximately \$1.1 million compared to the amount shown in the CCAFS Program Plan (US\$13.5 million). In addition \$1.5 million has been secured from restricted sources to cover part of the 2012 Coordinating Unit expenses. Table 13 describes the budget for 2012 by Center and the projected source of funding. The budgeted amounts for Coordination Synthesis, Capacity Building, Communication, CIAT pass through, CG system costs and external evaluation are also shown below. The largest portion of the Center Activity budgets goes to Theme 1 while the remaining three themes are relatively even. Theme Leaders' and Regional Program Leaders' budgets are shown separately from the Center Activity budgets. Eleven of the fifteen Centers are heavily dependent on the CGIAR Fund with 70% or more of their total funding requested from the CGIAR Fund.

Center	Center Activity Theme 1	Center Activity Theme 2	Center Activity Theme 3	Center Activity Theme 4	Theme and Regional Leadership	Total Budget	Source of funds		
							CGIAR Fund	Bilateral	% of Centre Budget from Fund
AfricaRice	179	238	384	24	-	824	624	200	76%
Bioversity	5,869	-	-	-	-	5,869	3,844	2,025	65%
CIAT	3,662	-	564	369	5,157	9,752	8,346	1,405	86%
CIFOR	-	-	725	-	-	725	525	200	72%
CIMMYT	2,071	2,234	952	490	-	5,746	5,100	647	89%
CIP	1,087	1,229	311	932	-	3,559	2,700	859	76%
ICARDA	2,024	606	-	-	-	2,630	1,691	939	64%
ICRAF	983	491	2,457	1,229	3,209	8,369	6,341	2,029	76%
ICRISAT	1,738	1,000	137	606	2,658	6,139	5,253	886	86%
IFPRI	-	750	1,000	1,012	1,500	4,262	2,610	1,652	61%
IITA	517	234	-	284	-	1,035	1,035	-	100%
ILRI	157	191	212	2,599	4,538	7,697	6,558	1,139	85%
IRRI	470	28	621	28	-	1,147	799	347	70%
IWMI	3,271	-	-	-	2,658	5,930	4,868	1,062	82%
WorldFish	481	713	296	611	-	2,100	895	1,205	43%
<b>Total</b>	<b>22,507</b>	<b>7,715</b>	<b>7,657</b>	<b>8,182</b>	<b>19,720</b>	<b>65,783</b>	<b>51,189</b>	<b>14,594</b>	<b>78%</b>
Coordination, Synthesis, Capacity Building, Communications						2,860	1,360	1,500	48%
CIAT pass-through						2,174	2,174	-	100%
CGIAR System Costs						1,051	1,051	-	100%
Monitoring/evaluation						300	300	-	100%
<b>Total Program costs</b>						<b>72,168</b>	<b>56,073</b>	<b>16,094</b>	<b>78%</b>

Table15: 2012 CCAFS Budget by Center by Source of funding