

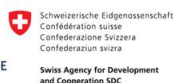
CCAFS is led by the International Center for Tropical Agriculture (CIAT) in collaboration with the following research organisations



CCAFS is supported by:



Fund



Acronyms

A4NH	CGIAR Research Program on Agriculture for Nutrition and Health
AAS	Harnessing the Development Potential of Aquatic Agricultural Systems for the Poor and Vulnerable; CRP 1.3
ABC	American Broadcasting Company
ACPC	Africa Climate Policy Centre
ADRA	Adventist Development and Relief Agency
AFDB	African Development Bank
AGMARK	Agricultural Market Development Trust
AGN	African Group of Negotiators
AGRHYMET	Centre Regional de Formation et d'Application en Agrométéorologie et Hydrologie Opérationnelle (the Mali Institute for Rural Economy)
AIC	Agricultural Insurance Company
ANACAFE	Asociación Nacional del Café Guatemala (Guatemalan National Coffee Association)
ANACIM	Agence Nationale de l'Aviation Civile et de la Météorologie (National Meteorology Agency of Senegal)
ASEAN	Association of Southeast Asian Nations
ATARI	Assessment and Research Institute
ATARI	Assessment and Research Institute
AWD	Alternate wetting and drying
BBC	British Broadcasting Corporation
BISA	Borlaug Institute for South Asia
CAADP	Comprehensive Africa Agriculture Development Programme
CAC	Central American Agricultural Council
CARE	Cooperative for Assistance and Relief Everywhere
CATIE	The Tropical Agricultural Research and Higher Education Center
CCAC	Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants
CCAFS	The CGIAR Research Program on Climate Change, Agriculture and Food Security
CChAM	Climate Change Adaptation and Mitigation
CDKN	Climate and Development Knowledge Network
CGRFA	Commission on Genetic Resources for Food and Agriculture
CIAT	International Center for Tropical Agriculture
CIFOR	Center for International Forestry Research
CIMMYT	International Maize and Wheat Improvement Center
CIS	Climate Information Services
CLIFF	The Climate Food and Farming Network
COMESA	Common Market for Eastern and Southern Africa
COP21	21st Session of the Conference of the Parties to the UNFCCC
CRP 1.1	CGIAR Research Program on Dryland Systems
CRP 1.2	CGIAR Research Program on Integrated Systems for the Humid Tropics (Humidtropics)
CRP 1.3	CGIAR Research Program on Aquatic Agricultural Systems (AAS)
CRP 2	CGIAR Research Program on Policies, Institutions, and Markets (PIM)
CRP 3.1	CGIAR Research Program on WHEAT

CRP 3.2	CGIAR Research Program on MAIZE
CRP 3.3	Global Rice Science Partnership (GRiSP)
CRP 3.4	CGIAR Research Program on Roots, Tubers and Bananas for Food Security and Income (RTB)
CRP 3.5	CGIAR Research Program on Grain Legumes
CRP 3.6	CGIAR Research Program on Dryland Cereals
CRP 3.7	CGIAR Research Program on Livestock & Fish)
CRP 4	CGIAR Research Pogram on Agriculture for Improved Nutrition and Health (A4HN)
CRP 5	CGIAR Research Program on Water, Land and Ecosystems (WLE)
CRP 6	Forests Trees and Agroforestry: Livelihoods, Landscapes and Governance (FTA)
CORAF/WECARD	West and Central African Council for Agricultural Research and Development
CRAFT	CCAFS Regional Agriculture Forecasting Toolbox
CRP	CGIAR Research Program
CSA	Climate-smart agriculture
CSAP	Climate-Smart Agriculture Partnership
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSIR-SARI	Council for Scientific and Industrial Research - Savanna Agricultural Research Institute
CSV	Climate-Smart Village
CTA	Technical Centre for Agricultural and Rural Cooperation
DFID	UK Department for International Development
DS	CGIAR Research Program on Dryland Systems, CRP 1.1
EA	East Africa
ECOWAS	Economic Community of West African States
ENACTS	Enhancing National Climate Services
ENDGBC	Costa Rican National Strategy for the Development of Low Carbon Livestock Farming
FAO	Food and Agriculture Organization of the United Nations
FENALCE	La Federación Nacional de Cultivadores de Cereales y Leguminosas
FEWS NET	Famine Early Warning Systems Network
FP	Flagship
FTA	CGIAR Research Program on Forests, Trees and Agroforestry, CRP 6
FTE	Full-time Equivalent
FtF	Feed the Future
GACSA	Global Alliance for Climate-Smart Agriculture
GAIP	Ghana Agricultural Insurance Programme
GCC	Gender and Climate Change
GCM	Global climate model
GGCA	Global Gender and Climate Change Alliance
GHG	Greenhouse gas
GRA	Global Research Alliance
GRiSP	The Global Rice Science Partnership, CRP 3.3
GSI	Gender and Social Inclusion
IBD	Instituto Biodinâmico

ICAR	Indian Council of Agricultural Research
ICPAC	Intergovernmental Authority on Development (IGAD) Climate Prediction and Applications Centre
ICRAF	World Agroforestry Centre
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICT	Information and Communications Technology
IDO	Intermediate development outcomes
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IIASA	International Institute for Applied Systems Analysis
IICA	Inter-American Institute for Cooperation on Agriculture
IITA	International Institute for Tropical Agriculture
ILRI	International Livestock Research Institute
IMPACT	Climate model developed by IFPRI
INDC	Intended Nationally Determined Contribution
INRA	French National Institute for Agricultural Research
IPCC	Intergovernmental Panel on Climate Change
IPNI	International Plant Nutrition Institute
IRI	International Research Institute for Climate and Society at Columbia University
IRRI	International Rice Research Institute
ISI	Institute of Science Index
ISSC	International Social Science Council
ITPGRFA	The International Treaty on Plant Genetic Resources for Food and Agriculture
IWMI	International Water Management Institute
KMC4CRP	Knowledge Management and Communications for CGIAR Research Programs
L&F	Landbrug & Fødevarer (Danish Agriculture & Food Council)
LAM	Latin America
LAMNET	Latin American Greenhouse Gas Mitigation Network
LAPA	Local Adaptation Plan for Action
LED	Low-Emission Development
LIBIRD	Local Initiatives for Biodiversity, Research and Development
M&E	Monitoring and evaluation
MADR	Colombian Ministry of Agriculture and Rural Development
MRV	Measuring, Reporting and Verification
NAMA	Nationally Appropriate Mitigation Actions
NAP	National Adaptation Plan
NARS	National agricultural research systems
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental organization
NMS	National Meteorological Services
NPR	National Public Radio
NRM	Natural Resource Management
OECD	Organisation for Economic Co-operation and Development

PAR	Participatory Action Research
PEP	Partnership for Economic Policy
PGR	Plant Genetic Resources
PICSA	Participatory Integrated Climate Services for Agriculture
PIM	CGIAR Research Program on Policies, Institutions and Markets, CRP 2
PMC	Program Management Committee
POWB	Program of work and budget
RTB	CGIAR Research Program on Roots, Tubers and Bananas for Food Security and Income, CRP 3.4
SA	South Asia
SAMPLES	Standard Assessment of Agricultural Mitigation Potential and Livelihoods
SAPCC	State Action Plan on Climate Change
SBSTA	Subsidiary Body for Scientific and Technological Advice
SEA	Southeast Asia
SHAMBA	Small-Holder Agriculture Monitoring and Baseline Assessment
SO	CGIAR System Office
ToC	Theory of Change
TORS	Terms of reference
UCI	University for International Cooperation in Costa Rica
UK	United Kingdom
UNECA	United Nations Economic Commission for Africa
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
W1	CGIAR Window 1 funding/funders
W2	CGIAR Window 2 funding/funders
WACDEP	Water, Climate and Development Programme
WASCAL	West African Science Service Center on Climate Change and Adapted Land Use
WB	World Bank
WBCSD	World Business Council for Sustainable Development
WFP	United Nations World Food Programme
WGII	Working Group II on impacts and adaptation, a report under under the Fifth Assessment Report of the IPCC
WISAT	Women in Global Science and Technology
WLE	CGIAR Research Program on Water, Land and Ecosystems (CRP5)
WMO-GFCS	World Meteorological Organisation - Global Framework for Climate Services

A. KEY MESSAGES

2015 was a crucial year for climate change research and action, culminating in the Paris Climate Agreement. The agreement was particularly critical for agriculture, given the [tortuous history](#) of the agricultural negotiations. CCAFS and partners played a major part in the successful Paris outcome. Inputs included position papers based on work of many CGIAR Centers (e.g. [pests and diseases](#)), engagement with numerous countries on INDC submissions, and widely read [CCAFS analyses on UNFCCC progress](#). The focus on climate change also resulted in good citations and downloading of CCAFS peer-reviewed papers (140 papers in 2015 – [please click this link to view the full list of 2015 CCAFS publications](#)).

2015 was the 1st year of implementation of a new portfolio, based on a major planning exercise in 2014, in preparation for Phase II, to [establish a theory of change \(ToC\) from project to global levels](#). Flagship 1 ToC focuses on empowering national and subnational organisations and key actors with tools and knowledge to identify best bet CSA options, and to establish incentive systems that scale up CSA. In addition, CCAFS works closely with global initiatives relevant to scaling CSA, e.g. USAID's Feed the Future. In 2015, there was strategic support to 9 national and 23 subnational initiatives (see Box 1 for concrete outcomes – [the full set of outcomes reported by projects in 2015 is also available](#)).

Box 1. Top outcomes for CCAFS and partners in 2015 by Flagship

FP1	1. IFAD invests US\$ 75 million (Uganda, Liberia, Comoros) based on CIAT-CCAFS prioritisation, through gender inclusive participatory approaches
	2. Haryana State (India) commits to developing 500 Climate-Smart Villages (CIMMYT, IWMI, IFPRI)
	3. Government of India launches improved subsidy program to install 10,000 solar-pumps for irrigation , with climate-smart outcomes (IWMI, IFPRI)
FP2	4. Senegal climate information services reach over 7 million rural people (ICRISAT, ANACIM)
	5. Index insurance protects a million farmers in Maharashtra, India (CIMMYT, AIC)
	6. ICPAC provides high resolution quantified seasonal forecasts to East Africa (IRI, NMS, CIMMYT, ICRISAT, PEP, WFP, FEWS NET)
FP3	7. Country workplans for scaling up AWD (Vietnam, Bangladesh and Colombia) (IRRI, CIAT, CCAC, NARS, Vermont)
	8. Dissemination of climate-smart feeding/husbandry practices among 600,000 dairy farmers (Kenya) (ICRAF, ILRI)
	9. A high profile for agriculture, gender and climate change in global policy dialogue leading up to COP21 and in the UNFCCC Paris Agreement (CCAFS and many other stakeholders)
FP4	10. Scenario-guided policy development in seven countries (Honduras, Cambodia, Bangladesh, Uganda, Burkina, Colombia, Ghana) (Oxford University, IRRI, IFPRI, IITA, ICRISAT, CIAT)
	11. UNFCCC INDCs strengthened (Kenya , Uganda, Tanzania, Costa Rica , Colombia , Vietnam) (ILRI, CIAT, IRRI, UCI)
	12. Climate-smart strategies and alliances developed nationally and regionally (Ghana , Myanmar , ECOWAS , CAC), with CCAFS as a key technical partner.
	13. Nepalese and Ugandan governments adopt policies to increase the availability and use of crop diversity for climate resilience (Bioversity)
	14. 189 countries adopt guidelines to integrate genetic resources in national adaptation plans (Bioversity, FAO)

Flagship 2 ToC centres on developing climate-informed services that build resilience and support CSA adoption, through close engagement with major agencies that can facilitate scaling. In 2015 23 institutions used CCAFS-generated tools/knowledge to respond to needs of climate service beneficiaries. These include production of information for agriculture by national meteorological services, delivery of climate

information and advisory services through agricultural extension, NGOs (e.g. Red Cross Malawi, Oxfam Ghana) and producer organizations (e.g., FENALCE Colombia); and pre-testing Gender Materials Pack for participatory design (GAIP Ghana) (Box 1 for concrete outcomes).

Flagship 3's ToC is to produce knowledge and tools, and engage with stakeholders to inform plans for scaling up low-emissions agriculture and reducing deforestation. CCAFS and partners identified 1 Gt CO₂e/yr in 2030 as a target for global reductions in agriculture to avoid 2°C warming. Costa Rica and Colombia issued low emissions policy documents on LED strategies using CCAFS science (CIAT, ICRAF, CATIE, national governments, producer associations). Low-cost MRV can help support smallholders sell carbon credits, as demonstrated by Plan Vivo's pilots of the SHAMBA GHG accounting methodology (University of Edinburgh, ICRAF) (see Box 1 for concrete outcomes).

Flagship 4 ToC provides relevant science and tools, coupled with engagement strategies, to contribute options in policy processes and to inform institutional investments in climate smart food systems. In 2015 CCAFS supported policy processes in 22 countries. CCAFS launched a new initiative with the WBCSD to facilitate a CSA Action Plan as a framework for private sector investments. A major focus was COP21 (see Box 1 for concrete outcomes).

Synthesis of the two most significant achievements/success stories:

1. Index insurance protects a million Maharashtra farmers from extreme rainfall events. CCAFS has a focus on the constraints and opportunities for index-based insurance to reduce climate risks, and has published 4 journal papers, 1 working paper and several reports on the topic. In India researchers assessed the constraints of current schemes, from the perspective of farmers, insurance agencies and the state. One problem is the weak relationship between farmers' losses and the indices that trigger insurance pay-outs. Through multiple crop and statistical models and optimisation (CIMMYT), new region and crop-specific (rice, pearl millet, soybean, cotton) triggers have been developed that maximise satisfaction of farmers, industry and government. Maharashtra State, with a large population of resource poor rainfed farmers, has adopted these new products and several insurance companies have applied them in 2015 to provide rainfall risk cover to the crops of one million farmers. Partners include the Department of Agriculture (Maharashtra) and Agricultural Insurance Company (AIC) of India. The work is part of the CSV approach.

2. Scaling climate-smart dairy practices in Kenya. CCAFS aims to establish agriculture as a sector that can deliver on climate finance outcomes. One route to getting agriculture on the climate agenda is through developing UNFCCC NAMAs, and CCAFS has several initiatives on this (e.g. Colombia, Costa Rica, Kenya). In Kenya the focus is on the dairy sector and the multiple benefits that improved dairy management delivers – milk yields, farmer income, reduced emissions. ICRAF and Unique Forestry and Land Use results were used for the dissemination of climate-smart feeding and husbandry practices among 600,000 farmers (25% women), members of six producers' organizations. The Livelihoods Fund (Danone-initiated) and Brookside Dairy have invested over USD 3.5 million in climate-smart dairy development, in a project to benefit 30,000 farmers. Partners include ILRI (e.g. GHG dairy emissions analysis), the State Department of Livestock and Kenya Dairy Board and FAO. FAO has built capacity in the agricultural ministry on NAMAs, and NAMA investment proposals demonstrating proof of concept are now under discussion.

Financial summary: CCAFS' 2015 total budget was USD 66.064 million composed of: CGIAR W1&2 2015 funds of USD 33.720 million as per final revised Financing Plan; USD 32,101 of Bilateral & W3 sources from all CGIAR Participating Centres; and by a CGIAR W1&2 carry-over of USD 0.472 million (later cut by USD 0.230 million). Total execution was USD 58.3 million (88.2%). Gender and social Inclusion research activities were USD 7.134 million, approximately 12.2% of the total annual execution. Total W1&2 2015 funds were paid in two tranches, 35% (\$11,873 million) in July and 65% (\$21.847 million) by end of November. 28% of these funds were W2 (USD 9.405 million) and 72% W1 (USD 24.315 million). The W1&2 budget cuts – 32% in relation to initial POWB – made implementation difficult, posing the only real challenge to CCAFS in 2015.

B. IMPACT PATHWAY AND INTERMEDIATE DEVELOPMENT OUTCOMES (IDOs)

The major planning exercise in 2014 included regional planning meetings (involving 140 scientists and practitioners, 45% non-CGIAR partners) where targets and indicators were established that cascade from project to global levels, focussing on the [five IDOs](#) (Figure 1). [Baselines](#) established at all sites (still a source of [publications](#)) will be [re-surveyed in Phase II](#). Through regional programs involving integrated activities from villages to regional economic communities, the Flagship products and engagement activities come together as integrated initiatives across scales, and are linked into the strategy to engage key global actors.

The CCAFS Theory of Change (in [Extension Phase proposal](#)) focuses on (Figure 1):

- Flagship 1: Empowering national and subnational organisations and key actors with tools and knowledge to identify best bet CSA options, and to establish incentive systems that scale up CSA.
- Flagship 2: Facilitating major regional to sub-national institutions, through strategic research and engagement, to develop/improve equitable, climate-informed services and to increase investments.
- Flagship 3: Producing tools and knowledge, and engaging with key stakeholders to contribute to the development of plans that lead to scaling up of low-emissions agriculture.
- Flagship 4: Providing the relevant science and tools, coupled with engagement strategies, to contribute options in policy processes and to inform institutional investments in climate smart food systems.

To measure progress in the ToC, eight near-term outcome targets (2019) are tracked annually (see [“CRP Performance Matrix – results for 2015”](#); and Section C2).

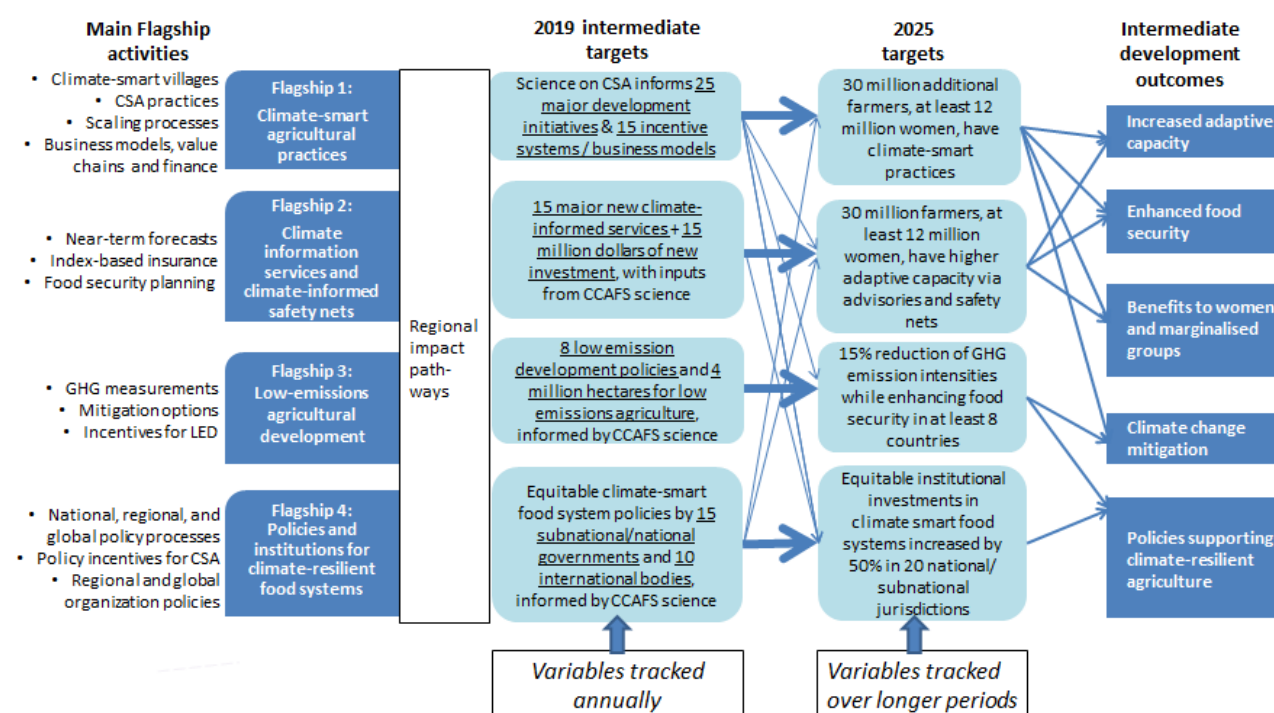


Figure 1. Intermediate targets (2019) and final program targets (2025) for the different Flagships, showing the variables that are tracked annually for each Flagship (as per Extension Proposal)

C. PROGRESS ALONG THE IMPACT PATHWAY

C.1 Progress towards outputs

Annual progress on the [POWB has been documented](#) and [annual reports of project participants have been made available online](#). CCAFS produced nine flagship products and nine flagship tools, highlighted in bold in the text below. All of the outputs reported are from 2015. Performance on gender increased substantially

between 2014 and 2015 due to greater investment in gender leadership. This enabled CCAFS to contribute to major products, such as the flagship tool [WB-IFAD-FAO Gender Sourcebook Module on Gender and CSA](#).

In Flagship 1, detailed work at CSVs was conducted. Here we highlight one country: the flagship product ***CSA portfolios in India*** set out to address the research question of what portfolios of climate-smart interventions at farm and institutional level can deliver benefits at scale for food security, adaptation and mitigation. Evidence for the productive, profitable, adapted and scalable options was quantified in c. 50 CSVs in Haryana & Bihar. Guided by on-location specific climatic risks and stakeholders priorities (and based on [cropping systems](#) and [farm typology](#)), several context-specific CSA technologies and practices were identified, prioritized and implemented. They will be evaluated through PAR, with gender-disaggregated information to understand adoption. Research partners identified [protocols, minimum data requirements and indicators](#) and underpinned the work with over 5 peer-reviewed journal papers.

Flagship 1 built on primary research at multiple field sites by many Centers (in collaboration with other CRPs) to inform policy and programs for scaling up improved climate-smart options. The flagship tools [CSA Plan](#) at national level and [Framework and guidelines to include the CSV approach in Local Adaptation Plans of Action](#) provided governments, donors and implementing agencies (state and non-state) with practical mechanisms to prioritize limited investments in accordance with local capacities and preferences. These have been used in Mali and India, for example. The demand-driven flagship product [CSA country profiles](#) was developed for Sri Lanka, Kenya, Rwanda, Nicaragua and Uruguay to inform national decision-making. Working with partners, specific climate-smart business models were identified for scaling in Kenya (small ruminants and sorghum) and Southeast Asia (higher starch content cassava).

The Flagship 2 focus on climate services and safety nets is dependent on the quality and availability of the information for risk management. ENACTS ([Enhancing National Climate Services](#)) involved working in partnership with IRI to enable AGRHYMET and meteorological services in Ethiopia, Tanzania, Madagascar and Ghana to reconstruct complete, high quality historical data at high spatial resolution, and provide a range of derived products available through online "maprooms". Climate services research continued in several African countries, including Tanzania, Malawi, Ghana and Senegal, and with a major new initiative in Rwanda. The work in Tanzania, Malawi and Ghana employed the PICSA ([Participatory Integrated Climate Services for Agriculture](#)) approach (University of Reading) to equip agricultural extension services and NGOs to bring climate information into their work with farmers and support its use for farm and livelihood decision-making. The other key activity under Flagship 2 was collaboration with partners on development and scaling of index-based insurance in multiple geographies. One example is the flagship product, [improved index insurance design](#), which was implemented at scale through a public-private partnership in Maharashtra. This work informed a new partnership with insurance companies and the Government of Nigeria that aims to scale out index-based insurance to 15 million crop farmers in Nigeria.

Flagship 3 developed several outputs in 2015 to inform the hypothesis that agricultural development can pursue low emissions pathways that are beneficial to smallholders and competitive with other options. To guide ambition and monitor progress towards a common goal, CCAFS and 20+ partners produced an [aspirational mitigation target for agriculture to limit warming by 2°C](#) (CSIRO, FAO, GRA, IIASA, INRA, World Bank, the New Zealand Agricultural GHG Research Center, six CGIAR centers and several universities), which has been accepted for publication in 2016 in the journal *Global Change Biology*. Analysis of countries' [INDCs for the Paris Agreement](#) showed that 103 countries, including 60+ developing countries, made commitments to reduce emissions in agriculture. To support implementation of these commitments, CCAFS worked with the private sector and government on [Scaling climate-smart dairy practices in Kenya](#). To answer the research question of how, at scale, to reduce methane emissions from rice while simultaneously increasing food security across Bangladesh, Colombia, and Vietnam, CCAFS-IRRI developed spatially explicit biophysical suitability assessments for alternate wetting and drying (AWD). Adoption of the framework by national partners has informed *consortia and multi-stakeholder proposals for [scaling up AWD in Vietnam, Bangladesh and Colombia](#)*. To improve estimates of greenhouse gas (GHG)

emissions from smallholder agriculture and governments' reporting to the UNFCCC, the [SAMPLES](#) web platform provides methods for low-cost measurement, a database of Tier 2 emission factors for smallholder farming, and other resources related to GHG quantification. A major accomplishment in 2015 was a review and comprehensive database of nitrous oxide emissions from agriculture in the developing world, which will be used to improve emissions models. The initiative also produced [Version 2 of the CCAFS Mitigation Options Tool](#), an Excel-based tool that enables rapid data-light identification of alternative mitigation options at national to farm levels.

Flagship 4 has led CCAFS on planning and achievement of impact pathways. A full set of [Baseline survey indicator documents](#) for the 15 original CCAFS core sites, at which Climate-Smart Villages are now located, provide comprehensive information for program evaluation and research questions on impact in 2017 and 2022. The Flagship has coordinated research and partnerships across centres on [scaling up climate-smart agriculture](#), capturing lessons across geographies and sub-sectors. At the global level, the Flagship has continued to address research questions on the policies and actions needed to feed the world, reduce poverty, and protect the natural resource base under climate change scenarios to 2050. The [IMPACT partial equilibrium model](#) beta version released by IFPRI (with PIM) is a flagship tool towards this purpose. The importance of the Paris COP in 2015 drove strategic allocation of CCAFS resources towards a set of [Submissions to SBSTA](#): summarised in two info notes and four background papers. CCAFS materials and evidence were used by Parties to the Convention in their submissions and in-session discussions, particularly by the Africa Group of Negotiators. CCAFS also supported negotiators with the widely downloaded flagship tool [Guide to UNFCCC negotiations on agriculture](#), a major revision of the 2013 version, co-published with CTA and Farming First, and including a strengthened focus on gender.

Open-access databases and publications: CCAFS continued to build and maintain several open-access databases. [AgTrials](#) (FP1, FP4), a repository of climate-specific agricultural trial data now contains 35,002 trials, with 50 new trials added in 2015. This database received 2,363 new visitors in 2015 (out of 3,571 total). Some 191,912 files were downloaded from [CCAFS-Climate](#) (FP1, FP4), which contains downscaled GCM data (30.03 TB data downloaded; 11.441 unique visits; 679 new users). In 2015 there were 1,341 downloads of CCAFS baselines material from [Dataverse](#) (FP4). CCAFS scientists produced 305 publications in 2015, including peer reviewed journal articles, policy briefs, books, book chapters and working papers. 85% of 140 peer-reviewed articles were published in ISI journals, 56% of 140 peer-reviewed articles were open access. Some highlights include an article on [Abiotic Stress Responses in Legumes: Strategies Used to Cope with Environmental Challenges](#) (FP1) which was widely covered in the global media including [BBC](#), [NPR](#) and [ABC news](#); a *Science* article on [Planetary boundaries: Guiding human development on a changing planet](#), which was cited over 400 times and [widely disseminated online and in the media](#); and an article on [Drivers of household food availability in sub-Saharan Africa based on big data from small farms](#) (FP4) which was covered in African media. [Please click this link to view the full list of 2015 CCAFS publications.](#)

Contribution to advancement to knowledge: An [article in Global Environmental Change](#) by a team of international researchers affiliated with CCAFS used qualitative and quantitative data from a large dataset to investigate the differences in access to natural resources, linkages with external organizations, and other characteristics among smallholder farmers in 15 research sites from across East Africa, West Africa, and South Asia. The paper reconfirms many conclusions by other researchers in regards to difficulties experienced by women farmers in accessing extension services, generating cash to pay for goods and services, and having secure land tenure. It has advanced knowledge by showing that women farmers are willing to adapt new farming practices and technologies if given the chance; the paper concludes with recommendations for improved governance and policymaking to reach women farmers in addition to men, which would help improve adaptive capacity and resilience to climate change. The paper on [Planetary boundaries: Guiding human development on a changing planet](#) by a team of international researchers including ILRI's joint appointee Jens Heinke says four planetary boundaries (climate change, loss of biosphere integrity, land system change and altered biogeochemical cycles) have been crossed as a result of

human activity, which places humanity in a danger zone. This new study has improved and updated the concept of planetary boundaries with new assessments and quantifications, and has identified two of the boundaries—climate change and biosphere—as core planetary boundaries. According to the study, ‘significantly altering either of these core boundaries would drive the earth system into a new state’.

C.2 Progress towards the achievement of research outcomes and IDOs

Good progress was made in 2015 in relation to the 2019 outcome targets ([A summary of all outcomes reported in 2015 by program participants has been prepared](#))

Flagship 1: Climate-smart agricultural practices

2019 target 1: 25 national/subnational major development initiatives and public institutions prioritize and inform project implementation of equitable best bet CSA options (targets all abbreviated from Proposal)

There has been strategic support to 9 national and 23 subnational level initiatives. In addition, CCAFS has worked closely with USAID’s global team for Feed the Future (FtF) to mainstream CSA in FtF country programming. Through partnering with multiple CSA investors, a CSA metrics database and selection framework has been prepared. Using CSA-Plan and the CSA-Prioritisation Framework, CSA options have been identified with national stakeholders (Mali, Vietnam, Kenya, Niger, Guatemala). CSA prioritisation was also conducted with NEPAD and COMESA. NARS across 22 CSVs actively tested CSA options and used CCAFS decision support tools to promote scaling up. Concrete outcomes are listed in Box 1.

2019 target 2: 15 public-private actors at national/subnational levels are using new incentive mechanisms or business models that explicitly promote equitable climate smart approaches along the value chain

This was a new outcome area for CCAFS in 2015 under the renewed portfolio. The focus was on engaging public-private partners and programs to lay the ground for designing and implementing CSA incentive mechanisms. This included secondments into the World Bank to pilot novel finance options. Agro-dealers and Acre Africa were engaged to promote conservation agriculture. WACDEP incorporated CCAFS results in the development of the Integrated Flood Management investment plan. Esoko company, CSIR-SARI and Ghana-Met explored payable ICT-transferred climate-smart information. ANACAFE, Cafenica, IICA, Atlantic, IBD, Root Capital, Neumann foundation and SAFE investors developed adaptation strategies (Guatemala, Nicaragua, Ghana) and coffee/cocoa portfolios contributing to international quality certification incentives (Peru).

Flagship 2: Climate information services and climate-informed safety nets

2019 target 1: 15 major regional, national, and sub-national institutions develop or improve major demand-driven, equitable, climate informed services supporting rural communities

23 institutions, using CCAFS-generated tools and knowledge, have responded to the needs of climate service beneficiaries to develop or deliver climate-informed services (e.g. district agricultural extension services in Tanzania, Malawi and Ghana; Red Cross Malawi, Oxfam Ghana and ADRA Ghana incorporated PICSA into their work with farmers). Index insurance design is on-going in Nicaragua, Nigeria, India and Bangladesh. Meteorological Agencies in Mali and Ghana have implemented ENACTS data reconstruction and online maprooms. Concrete outcomes are listed in Box 1.

2019 target 2: US\$ 15 million increase, relative to 2014, in research-informed demand-driven investments in climate services for agriculture and food security decision-making

In preparing for this impact pathway, more work on the economics of climate information services is needed. CCAFS is developing work through a recent hire of an economist. Engagement with major climate service programs and funders (WMO-GFCS, WB, DfID, USAID, AfDB) prepared for future progress toward

this target. In LAM, money has been allocated to invest in climate services in the agriculture sector of Colombia by the Ministry of Agriculture and Rural Development (MADR). Research will be done on agroclimatic forecast, crop modelling improvement considering climate variables, experimental plots in different parts of the country, and support of national policy and action plans.

Flagship 3: Low-emissions agricultural development

2019 target 1: 8 low emissions plans developed for implementation that have significant mitigation potential, i.e. will contribute to a reduction of at least 5% GHG emissions intensities or reach at least 10,000 farmers, including at least 10% women.

CCAFS facilitated 20+ leading scientists to develop a global target for GHG reduction in agriculture. This helped inform INDC analyses in three countries and set priorities for Flagship 3. The Flagship's analysis of INDCs submitted in 2015 to the UNFCCC indicated that 103 countries, including about 60 developing countries, pledged to reduce emissions in agriculture and indicated their priorities. Flagship 3 science directly informed the Mongolia INDC (inclusion of livestock). CCAFS science also informed three mitigation policies in Latin America (Costa Rica's coffee NAMA and livestock low emissions strategy and Colombia's livestock NAMA), Plan Vivo adopted the SHAMBA GHG accounting methodology for smallholders. Concrete outcomes are listed in Box 1.

2019 target 2: 4 million hectares targeted by research-informed initiatives for scaling up low-emissions agriculture and preventing deforestation

LED plans have ambitious scales of impact, especially the CCAC workplans for scaling up AWD in Bangladesh, Vietnam and Colombia, which together constitute the majority of the potentially affected area (6.98 mil ha). In 2015 each country identified existing initiatives that could promote AWD, such as a national water-saving project in Bangladesh, and needs for training and finance. An information hub was established on a website where all technical information related to AWD has been compiled. High levels of implementation are likely in Costa Rica's planned Livestock NAMA, which can be expected to reduce emissions on 0.02 mil ha based on results from 20 pilot farms.

Flagship 4: Policies and institutions for climate-resilient food systems

2019 target 1: 15 equitable national/ subnational food system policies enacted that take into consideration climate smart practices and strategies, informed using knowledge, tools and approaches

In 2015 CCAFS supported improved policy processes in 22 countries. Examples include: Tanzania's new Environmental Policy; Uganda's Agricultural Policy and Mechanization Framework; validated CSA framework programs in Kenya, Uganda, Tanzania, Botswana and Namibia; strengthened NAP for agriculture in Honduras and Bangladesh; investment policies for Philippine National Climate Change Action Plans. Concrete outcomes are listed in Box 1.

2019 target 2: 10 regional/ global organisations inform their equitable institutional investments in climate smart food systems

2015 saw a major new private sector initiative with WBCSD where CCAFS is helping develop a CSA Action Plan as a framework for private sector investments. CCAFS acted as a technical partner to several regional initiatives, e.g. the CAC, ECOWAS, ASEAN in their CSA initiatives. Several initiatives linked to the UNFCCC. With COMESA, ACPC/UNECA, CORAF/WECARD and IDRC, three submissions to UNFCCC during SBSTA 42 were made by the AGN. In addition a submission was made to the Lima Work program on gender. Concrete outcomes are listed in Box 1.

C.3 Progress towards impact

CCAFS has focussed on driving change at all levels, a key assumption being that climate change challenges can only be dealt with [through multi-level approaches](#). The overall ToC includes the assertion that global negotiations and advocacy around climate change and agriculture can change paradigms and approaches and increase public and private investment in CSA, while farm level impacts of climate change, and positive farm adaptation and mitigation experiences can help shape policy debates. Climate change adaptation and mitigation policies were at a very early stage in most jurisdictions in the early 2010s, so CCAFS and partners had a significant opportunity to mobilize thinking and action.

CCAFS science in Phase I has helped shape global debates. To put climate change and agriculture on the map, CCAFS established and facilitated the [Commission on Sustainable Agriculture and Climate Change](#), chaired by the UK Chief Scientist. The reports/ activities of the Commission in 2011 helped agriculture become [part of the UNFCCC Durban Agreement](#), a first for this sector, and a breakthrough after being stalled in the negotiations. CCAFS made direct submissions and CCAFS-supported developing country Parties' submissions to SBSTA in 2015. Agriculture has gone on to be high profile in UNFCCC agreements and processes in Paris COP21, with several initiatives and INDCs having CCAFS inputs. Research and engagement by CCAFS has been fundamental in setting agendas. For example, in the prioritizing and design by the Global Crop Diversity Trust and the Kew Millennium Seed Bank of the 10-year US\$ 50 million programme focusing on pre-breeding for climate change adaptation. A private sector example is the WBCSD, where the major multinational companies have established ambitious goals for reduced emissions in food systems.

The CGIAR has never been a key contributor to the IPCC (less than 4% of papers cited from the CGIAR) but CCAFS took a decision to stimulate science relevant to the IPCC. In the 2014 IPCC report [CGIAR contribution was up by nearly 4 times](#). One CCAFS article, a [meta-analysis of projections of future crop yields under climate change](#), provided the central messages on future food availability under climate change. Within days of the release of the WGII report, CCAFS published a [summary of findings](#) relevant to smallholder farmers, subsequently downloaded over 21,000 times.

In 2014, CCAFS and partners helped establish the Global Alliance for Climate-Smart Agriculture (GACSA), with CSA likely to become a major investment area in agriculture. At regional level, CCAFS has been actively engaged in major policy initiatives, often as a technical partner, with NEPAD, ECOWAS, COMESA, CAC, ASEAN and OECD. CCAFS science and engagement efforts have helped foster outcomes in national policy processes in over 20 countries. CCAFS can point to informing over half a billion dollars of investment. For example, climate projections and analyses of options have been important in shaping the National Adaptation Plan for agriculture in Nicaragua, with immediate impacts through new investments of USD 24 million investment to climate-proof the coffee and cocoa sectors.

CCAFS developed the approach Climate-Smart Villages (CSVs) – locations/landscapes/groups of villages – where climate change is dealt with comprehensively through technologies, services (e.g. seasonal forecasts, insurance) and local adaptation planning. These were established by CCAFS in 20 countries, but the model is now being scaled out by partners, with two states in India planning for 1000 villages, and international NGO partners now using the model in Nepal and West Africa. Experiences in CSVs have also helped drive widespread uptake of specific technologies and services. Science-based solutions to climate change have been demonstrated with farmers in diverse contexts, e.g. Colombia – saving rice farmers in a specific region US\$ 3.5 million input costs in a single year through climate-informed advisories; India – 0.5 million hectares under laser land levelling that has income, adaptation and mitigation benefits; Senegal – new seasonal climate forecasts reaching 7 million, with attention to reaching both male and female farmers; India – new weather-index insurance products being rolled out to one million farmers; Kenya – supporting Heifer International in animal fodder options, thus [helping Heifer reach 179,000 families and increasing their earnings by a collective \\$131 million](#).

D. GENDER RESEARCH ACHIEVEMENTS

In relation to defining gender inequality targets and architecture (Annex 2), CCAFS exceeded requirements. The program developed a new Gender and Social Inclusion (GSI) Strategy and recruited a Research Leader and Program Manager. The Gender and Climate Change (GCC) Network (approximately 59 members from CGIAR Centers) was created as a system-wide platform for research and knowledge sharing. Some achievements that contributed to CCAFS outputs and outcomes are highlighted below:

Building an evidence base. CCAFS continued to look at the gender “smartness” of CSA practices and technologies through participatory approaches and household modelling, incorporating it as an indicator in CSA planning processes. CSA gender indicators were developed for use in CSA Profiles of six African countries, in the CSA Prioritization Framework, and food security monitoring and response systems. An assessment of gender differentiated roles in dairy supply chains and gender equity practices among implementing organizations in East Africa informed development of the Kenya dairy NAMA. Research on gender differences in climate change perception, vulnerability and adaptation was conducted in Vietnam and Myanmar. Sex-disaggregated data continued to be collected and/or analyzed from Baseline and Gender Household Surveys.

Innovations in adaptation and mitigation. The online platform for CSA citizen science included gender-disaggregated data and emphasized the importance of participation by women and men (SA, LAM, EA). Gender issues were considered in climate services training and index-based insurance, and a set of gender-sensitive index insurance design materials was developed and pre-tested in Ghana. The potential for health clinics to provide climate information for rural women in Senegal was investigated. In East Africa, new methods were developed to integrate gender equity considerations into zonal and systems approaches within rapid multi-indicator surveys; applications are envisaged at multiple sites for a global analysis of the interplay between agriculture, gender and nutrition.

Policy engagement and capacity: A high level event “[Closing the gender gap in farming under climate change](#)” was co-organized with Future Earth, ISSC and the Consortium Office in Paris in the lead-up to COP21. Results included [a policy brief with lessons and guidelines](#) for gender-responsive climate policies at global and national levels, launched on the International Day of Rural Women. A CCAFS high-level side event at the Global Landscape Forum included a panel on gender, youth, the INDCs, and food security. CCAFS contributed to the WB CSA 101 tool and the [WB-FAO-IFAD Module on Gender and CSA](#) in the Gender and Agriculture Sourcebook. Gender and youth content was included in the Guide to UNFCCC Negotiations on Agriculture Toolkit. Eight women PhD students received fellowships for training in GHG estimation and a postdoctoral fellow at ILRI, co-supported by L&F, is ensuring gender is addressed in Kenya's dairy NAMA.

Publications: Numerous journal articles, reports, blogs and events were produced as outputs of CCAFS gender research. The policy brief, *Advances in including rural women's needs and interests in agricultural and climate change public policies : The case of Colombia* ([Tafur M et al 2015](#)), was the most downloaded CCAFS publication of all from the CCAFS repository in 2015, while the [Gender and Inclusion Toolbox](#) (published in 2014) continued to be in the top 10 of all 2015 publications.

Partnerships: Partners included public and private organizations working at different levels (e.g. CARE, ILRI, IFPRI, CIFOR, Future Earth, GGCA, WISAT, University of Florida, Ecohabitats, IFAD).

Gender in the workplace: The gender capacity across CCAFS is approximately 21 FTE. The number of women involved in leadership has remained the same or increased slightly since 2014 (Annex 4). The Director was male; 7 of 17 (41%) of the core staff, 2 of 6 (33%) Program Management Committee members, 3 of 14 (21%) contact points in centers, and 3 of 8 (38%) ISP members were female.

E. PARTNERSHIPS BUILDING ACHIEVEMENTS

CCAFS is fundamentally a partnership program. The partnership model used for CCAFS governance and management was praised in the CGIAR-commissioned external reviews of governance and management, and in that commissioned by the CIAT Board. The Independent Science and Partnership Council of the CGIAR noted that CCAFS has built a comprehensive and relevant range of strategic partnerships for key functions (research, capacity building, knowledge management, action on practices, policy and institutional change, and management and governance),

Regional and global partnerships: Key partnership activities at global level have included the Learning Alliance with IFAD informing USD 75 million investments; active participation and leadership in GACSA; a newly built partnership with USAID's Feed the Future Program; and close collaboration with World Bank agriculture programming via secondment of two CCAFS staff to WB. At Africa level, CCAFS policy engagement included co-development with NEPAD and national governments in the African Alliance for Climate-Smart Agriculture, aligned closely with NEPAD/CAADP framework. Under this framework, in 2015 CCAFS supported national governments in the climate components of NAFSIPs in five African countries. CCAFS is also involved in the UN Global Framework for Climate Services, and supported its very first national implementation projects in Tanzania and Malawi. In SE Asia, CCAFS's partnership with ASEAN helped to develop an umbrella program on Climate Change Adaptation and Mitigation (CChAM). Through partnership between CCAFS and FAO, 189 countries adopted guidelines to integrate genetic resources in national climate change adaptation strategies.

National policy, implementation and research partnerships: CCAFS continued to partner with key national research partners, including several on three or more projects, such as l'Institut Sénégalais de Recherche Agricole, L'Institut d'Economie Rurale (Mali), Kenya Agricultural Research Institute, Makerere University, Indian Council of Agricultural Research, Nepal Agricultural Research Council, and Vietnam's Institute for the Agricultural Environment and Can Tho University. Agriculture ministries coupled with meteorological agencies remain important public sector implementing partners. For example, an important partnership built in 2015 is with Rwanda, where a major project aims to bring climate information services for farmers to national scale. In 2015 CCAFS worked with governments towards their intended nationally determined contributions (INDCs) to the Paris Agreement, informing INDCs submitted by Mongolia, Vietnam, Kenya, Uganda, Tanzania, Costa Rica and Colombia.

Private sector partnerships: Private sector partnerships were pivotal to several large-scale outcomes. For example, work with Agricultural Insurance Company of India means that a weather index insurance product for crops that was co-designed by CCAFS now protects a million farmers in Maharashtra. Work with Esoko company, and Ghana-Met explored payable ICT-transferred climate-smart information. A new partnership with Root Capital and Green Mountain is exploring the opportunities to use supply chain certification and social impact investment to build climate resilience into smallholder supply chains in Central America and West Africa. At the global level, CCAFS has entered into a major partnership with the WBCSD, providing the science to inform their announcement at COP21 in Paris of ambitious global corporate goals to reduce food system emissions by 50% by 2030 while increasing availability of nutritious food by 50% and building the resilience of millions of smallholder farmers; CCAFS will now support the achievement of these goals.

Cross-CRP coordination: Cross-CRP collaborations continued to be strengthened, and even tighter coordination in Phase 2 was planned. Annex 3 summarises CCAFS collaborations with other CRPs in 2015.

F. CAPACITY BUILDING

Strategy and quantitative achievements: CCAFS capacity enhancement activities are mainstreamed within research and engagement activities, to raise both research capacity among partners (post-graduate students and early or mid-career researchers) and the capacity of research users and co-creators (including farmers, policy-makers and technical staff in implementing agencies, companies and NGOs). In 2015, CCAFS supported 25,607 women and 29,589 men on short-term programs, and 54 women and 68 men on long-

term programs. Some 39 multi-stakeholder innovation platforms worked on specific farming systems and national policies.

Enhancing research capacity: Enhancement of research capacity involves training, ongoing support and networking. For example, a 3-day workshop raised capacity on CSA among researchers and implementers in BISA, ICAR, Govt of Punjab, Govt. of Haryana, Assessment and Research Institute (ATARI), IPNI, LIBIRD, CDKN, Plant and AgriBiosciences Research Centre, Colombian Rice Federation, alongside donors USAID and World Bank. The LAMNET summer school trained 23 women and 26 men post-grad students from Brazil, Colombia, Nicaragua, Argentina and Trinidad and Tobago in GHG quantification while CLIFF supported 8 PhD fellowships for GHG quantification at CG centers, including 6 women. CCAFS continued to contribute course content and lectures at the Universities of Niamey and Galway, and the Vietnam National University of Agriculture, and has collaborated in West Africa with the WASCAL Graduate Studies Program.

Enhancing capacity of research users: Among users of research, CCAFS has enhanced capacity by providing facilitation of policy analysis and formulation, field visits and demonstrations, policy learning platforms, south-south exchanges, and training sessions from farm to global level. For example, with AGMARK, CCAFS-CIMMYT provided information on efficiency of agricultural inputs to over 400,000 women across 9 Kenyan counties. A media workshop in Honduras trained 12 women and 8 men journalists on climate change and how to communicate science in mass media, leading to 9 direct news stories and a 39-member Latin American Science and Agriculture Communications Network. An open-day event in Uttar Pradesh, India, demonstrated to policy-makers how floodwater can be harnessed underground for future abstraction.

G. RISK MANAGEMENT

CCAFS management updated its risk catalogue. The top three risks identified were: (1) Funding instability from year to year and going into Phase 2; (2) Centers not allocating bilateral funds to CCAFS; (3) Weak commitment and/or capacity of CGIAR Centers to deliver a cohesive body of CGIAR Climate Change science given the increased number of CRPs and incorporation of climate change issues in the current CRPs. For risk (1), CCAFS management has continued to stress to Centers that it is up to Centers to manage the fluctuations, as CCAFS management does not have “reserves” or alternative funding. CCAFS management has in place a solid strategy and good record of past performance levels, so that if budget cuts are required then these can be strategically applied. Risk (2) relates to the fact that Centers have in a number of cases been unable or unwilling to raise bilateral funding under the CCAFS banner. The reasons for this have been analysed and mitigating/incentive measures been put in place so as to raise the bilateral percentage for Phase II (ease of reporting on bilateral funding and increased attention to the bilateral percentage as a performance measure). This risk also reflects on risk (1), because if CCAFS had a higher % of bilateral funds, the overall budget fluctuations would probably be less, given the portfolio of funding is more diverse. Risk (3) relates to the mainstreaming of climate change issues in the CGIAR – on the positive side this is a welcome shift given the extreme challenges posed by climate change, but on the negative side the overall portfolio becomes less coherent and “climate change” may be meaninglessly tagged onto various activities that are not particularly strategic from a climate change perspective. CCAFS is working to elucidate the globally strategic activities (e.g. Wollenberg et al., forthcoming, on a global mitigation target) and has entered into discussions with all other CRPs on boundary issues.

H. LESSONS LEARNED

In terms of the [CRP Performance Matrix](#), two of the eight targets for 2015 were not achieved. Both of these (Flagship 1, Target 2; Flagship 3, Target 2) are for substantially new areas of work and progress has been slower than expected – in hindsight we were over-ambitious on the likelihood of quick wins. In addition, for Flagship 3, activities related to this target were disproportionately reduced by budget cuts, so future targets will need to be reduced. The under-performance on these targets is more than compensated for by exceeding the other targets in those Flagships. Of the 8 targets in CCAFS, five were exceeded in 2015.

This was the first year of implementing a system of targets and indicators across the entire portfolio, integrated amongst projects, regions and Flagships. Having easily measured targets that can be annually assessed is regarded as very useful in measuring progress of project partners. But given this is the first year of operation, there are a number of lessons to improve the system.

“Ease of measuring” an indicator comes at the expense of detailed quantitative evidence of impact and is largely focused on reported outcomes, i.e. use of research by key non-research agencies along the impact pathway. Thus the current indicator system of CCAFS has to be supplemented by more detailed evaluation of progress every few years. We believe this more detailed evaluation should be based on ex-post impact assessments, so that evaluation is focused on some high performing areas/IDOs, rather than attempting to be comprehensive across all IDOs, as a comprehensive approach will be extremely resource demanding.

Because the outcome case studies are based on reporting by project participants, we have found external evaluation of the outcomes very valuable (two external evaluators count 2/3 of the final score for a reported outcome, while two core team members count 1/3). The external evaluators read the outcome case studies and associated validation studies with the eyes of users of the research, and provide independent objectivity. Through the use of external evaluators, it is believed that the indicator values given in the Performance Matrix can be reported with confidence.

The timing of the reporting makes it challenging to seek feedback from project participants on the annual report and to get responses from project participants on the evaluations they receive on their project/Center performance. Because of the lack of time, the latter only happens after the submission of this annual report, which is not ideal. Further lessons will be derived once project participants receive their evaluations and give feedback.

With the budget cuts, a number of sub-topics had to be cut. In general, this resulted in a downsizing of an area rather than cutting entire areas, implying that the targets remain relevant in 2016, though performance may be at a lower level. Given this was the first year of operation of this target system, and given that many targets were exceeded, the 2016 outcome is unlikely to differ substantially from what was proposed in the Extension Proposal. Downsizing included cutting work in particular countries rather than throughout the portfolio. As an example, activities in India on mitigation will be downscaled due to lack of government support for mitigation in agriculture. Budget reductions also disproportionately affected inter-Center collaboration. CCAFS will provide greater incentives to keep Centers collaborating in future years despite funding reductions.

Going into 2015, CCAFS had conducted a major priority setting exercise, leading to a strategic portfolio for 2015 onwards. The subsequent 32% cut of W1 & W2 was to some extent exacerbated by increases in bilateral funds and use of reserves by Centres. The net budget decline was 5%, but strategic direction was lost as bilateral funds had to be used to deliver project-specific outputs and outcomes outside of CCAFS strategy. Major sub-themes that were removed included (1) the work on palm oil in Indonesia under the overall theme of agriculture-forestry boundary issues (Flagship 3 collaboration with FTA) and (2) early warning linked to humanitarian efforts (Flagship 2).

Further budget cuts for 2016 led to a second strategic exercise in late 2015. All activities were rated on criteria such as progress, strategic value given reduced budget and prospect of outcome delivery, by at least two evaluators, to make further cuts to the CCAFS portfolio.

Regarding budget uncertainty and repeated cuts at short notice, it is worth noting that CCAFS (and wider CGIAR) outcomes take many years, requiring iterative development of partnerships and research to build towards meaningful results at scale. Thus the cuts have had less impact on outcomes in 2015, which are based on previous years', but will have major impacts on outcomes in future years. We note that many of our partners have had little capacity to deal with the unexpected, severe budget cuts that we have had to share with them and furthermore that trust has been broken, which again will take time to repair.

In a previous change of direction, CCAFS downsized a “knowledge for action” cross-cutting topic and replaced it by a theme of gender and social inclusion. We believe that this has been instrumental in positioning CCAFS for better outputs and outcomes on gender. However, we look forward to even greater performance in this area. For example, CCAFS needs to develop better gender impact assessment methodologies for going forward, a priority for 2016.

Communication and knowledge sharing is seen as a critical success factor to deliver impact, and so, for example, all communicators were trained in impact pathway thinking over the past 18 months. Cross-CRP communication activities through the KMC4CRPs community have been very productive (see examples in Annex 3). Going forward in Phase II, the SO and Centres must support this type of grassroots effort to bring greater coherence and coordination to the complex process of communicating CRP results to various target audiences.

ANNEX 1: CRP INDICATORS OF PROGRESS, WITH GLOSSARY AND TARGETS. See Annex 5 for a further breakdown of the capacity development indicators.

Knowledge, tools and data									
#	Indicator	Deviation	2012	2013	2014	2015			2016
			Actual	Actual	Actual	Target	Actual	Link to supporting databases	Target
1	Number of flagship “products” produced by CRP		4	7	8	8	9	1. Scaling climate-smart dairy practices in Kenya: http://ccaafs.cgiar.org/research/results/scaling-climate-smart-dairy-practices-kenya-through-nationally-appropriate 2. Index insurance product in Maharashtra: http://ccaafs.cgiar.org/research-highlight/better-designed-weather-based-insurance-holds-promise-maharashtra-farmers 3. Consortia and multi-stakeholder proposals for scaling up alternate wetting and drying in Vietnam, Bangladesh and Colombia: http://ccaafs.cgiar.org/mitigation-strategies-rice-production-collaboration-climate-and-clean-air-coalition 4. INDCs for the Paris Agreement: http://ccaafs.cgiar.org/news/media-centre/press-releases/report-majority-national-climate-plans-address-agriculture-most 5. Baseline survey indicator documents: https://ccaafs.cgiar.org/resources/baseline-surveys#baseline_indicator 6. Submissions to SBSTA: http://ccaafs.cgiar.org/research-highlight/new-briefs-highlight-critical-agriculture-issues-un-climate-talks 7. Aspirational mitigation target for agriculture to limit warming by 2°C: http://www.slideshare.net/cgiarclimate/will-sustainable-intensification-help-us-avoid-exceeding-2-c	8

								<p>8. CSA portfolios in India: e.g. https://activities.ccafs.cgiar.org/data/projects/25/deliverableDataSharing/484-CCAFS%20Foresight%20and%20targeting%20climate%20smart%20agricultural%20practices%20in%20Bihar.pdf and over 5 published peer-reviewed papers.</p> <p>9. CSA country profiles: http://ccafs.cgiar.org/publications/csa-country-profiles</p>	
2	% of flagship products produced that have explicit target of women farmers/NRM managers	Gender performance has improved with dedicated gender leadership.	25%	29%	38%	40%	56%	<p>1. Scaling climate-smart dairy practices in Kenya: http://ccafs.cgiar.org/research/results/scaling-climate-smart-dairy-practices-kenya-through-nationally-appropriate</p> <p>3. Consortia and multi-stakeholder proposals for scaling up alternate wetting and drying in Vietnam, Bangladesh and Colombia: http://ccafs.cgiar.org/mitigation-strategies-rice-production-collaboration-climate-and-clean-air-coalition</p> <p>4. INDCs for the Paris Agreement: ccafs.cgiar.org/news/media-centre/press-releases/report-majority-national-climate-plans-address-agriculture-most#.Vxd1zvl97RZ</p> <p>5. Baseline survey indicator documents: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/28324</p> <p>8. CSA portfolios in India: e.g. https://activities.ccafs.cgiar.org/data/projects/25/deliverableDataSharing/484-CCAFS%20Foresight%20and%20targeting%20climate%20smart%20agricultural%20practices%20in%20Bihar.pdf and over 5 published peer-reviewed papers.</p>	50%

3	% of flagship products produced that have been assessed for likely gender-disaggregated impact	Gender performance has improved with dedicated gender leadership	0%	0%	25%	20%	44%	<p>1. Scaling climate-smart dairy practices in Kenya: http://ccafs.cgiar.org/research/results/scaling-climate-smart-dairy-practices-kenya-through-nationally-appropriate</p> <p>4. INDCs for the Paris Agreement: ccafs.cgiar.org/news/media-centre/press-releases/report-majority-national-climate-plans-address-agriculture-most#.Vxd1zvl97RZ</p> <p>5. Baseline survey indicator documents: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/28324</p> <p>8. CSA portfolios in India: e.g. https://activities.ccafs.cgiar.org/data/projects/25/deliverableDataSharing/484-CCAFS%20Foresight%20and%20targeting%20climate%20smart%20agricultural%20practices%20in%20Bihar.pdf and over 5 published peer-reviewed papers.</p>	40%
4	Number of "tools" produced by CRP		5	7	8	8	9	<p>1. WB-IFAD-FAO Gender Sourcebook Module on Gender and CSA: http://documents.worldbank.org/curated/en/2015/10/25135830/gender-climate-smart-agriculture-module-18-gender-agriculture-sourcebook</p> <p>2. CSA Plan at national level: http://ccafs.cgiar.org/climate-smart-agriculture-plan-guide-scaling-csa; https://csa.guide/#chapter-3</p> <p>3. Framework and guidelines to include the CSV approach in Local Adaptation Plans of Action: http://ccafs.cgiar.org/news/mainstreaming-climate-smart-villages-india</p> <p>4. SAMPLES: http://samples.ccafs.cgiar.org</p> <p>5. IMPACT partial equilibrium model http://impact-model.ifpri.org</p> <p>6. Guide to UNFCCC negotiations on agriculture; http://www.farmingfirst.org/unfccc-toolkit-how-to-use</p>	8

								<p>7. Version 2 of the CCAFS Mitigation Options Tool; http://ccaafs.cgiar.org/mitigation-option-tool-agriculture</p> <p>8. ENACTS: Reconstruction of historical weather data: http://ccaafs.cgiar.org/blog/involving-users-creation-climate-information-products</p> <p>9. PICSA: https://ccaafs.cgiar.org/getting-participatory-agriculture-climate-services-out-farmers</p>	
5	% of tools that have an explicit target of women farmers	Gender performance has improved with dedicated gender leadership.	33%	29%	38%	40%	56%	<p>1. WB-IFAD-FAO Gender Sourcebook Module on Gender and CSA: http://documents.worldbank.org/curated/en/2015/10/25135830/gender-climate-smart-agriculture-module-18-gender-agriculture-sourcebook</p> <p>2. CSA Plan at national level: http://ccaafs.cgiar.org/climate-smart-agriculture-plan-guide-scaling-csa; https://csa.guide/#chapter-3 (see “Situation analysis”)</p> <p>3. Framework and guidelines to include the CSV approach in Local Adaptation Plans of Action: https://cgspace.cgiar.org/bitstream/handle/10568/68326/LAPA.pdf?sequence=1&isAllowed=y</p> <p>6. Guide to UNFCCC negotiations on agriculture; http://www.farmingfirst.org/unfccc-toolkit-how-to-use</p> <p>9. PICSA: https://cgspace.cgiar.org/bitstream/handle/10568/68687/PICSA%20Field%20guide.pdf?sequence=1&isAllowed=y</p>	50%
6	% of tools assessed for likely gender-disaggregated impact		0%	0%	13%	20%	33%	<p>1. WB-IFAD-FAO Gender Sourcebook Module on Gender and CSA: http://documents.worldbank.org/curated/en/2015/10/25135830/gender-climate-smart-agriculture-module-18-gender-agriculture-sourcebook</p> <p>2. CSA Plan at national level:</p>	50%

								http://ccaafs.cgiar.org/climate-smart-agriculture-plan-guide-scaling-csa ; https://csa.guide/#chapter-3 (see "Situation analysis") 3. Framework and guidelines to include the CSV approach in Local Adaptation Plans of Action: https://cgspace.cgiar.org/bitstream/handle/10568/68326/LAPA.pdf?sequence=1&isAllowed=y	
7	Number of open access databases maintained by CRP		6	7	26	15	18	www.agtrials.org ; www.ccaafs-climate.org ; www.ccaafs-analogues.org/tool www.aclimatecolombia.org http://iridl.ldeo.columbia.edu/SOURCES/.Princeton/.hydrology/.metdata/.NWE_Africa/.v1p0 http://iridl.ldeo.columbia.edu/SOURCES/.EU/.EUME_TSAT/ http://samples.ccaafs.cgiar.org/emissions-data http://ccaafs.cgiar.org/publications/gyga-rainfed-maize-results http://impact-model.ifpri.org/#project/baseline http://dx.doi.org/10.7910/DVN/VQUR3W http://data.ilri.org http://waterdata.iwmi.org/Applications/Catastrophic_Flood_Risk_Mapping http://waterdata.iwmi.org/Applications/Southeast_Asia_Flood_Mapping http://waterdata.iwmi.org/Applications/nigeria_Flood_Mapping http://www.iwmi.cgiar.org/resources/emergency-response-products-for-water-disasters http://dx.doi.org/10.7910/DVN/PWVLTU http://ag-impacts.org www.amkn.org	18

8	Total number of users of these open access databases		43,220	23,377	37,221	25,000	57,572	www.agtrials.org 2363 www.ccafs-climate.org 11441 www.ccafs-analogues.org/tool 3475 www.aclimatecolombia.org 26872 http://samples.ccafs.cgiar.org/emissions-data 5213 http://dx.doi.org/10.7910/DVN/VQUR3W 10 http://data.ilri.org 20 http://dx.doi.org/10.7910/DVN/PWVLTU 82 http://ag-impacts.org 4326 www.amkn.org 3770	50,000
9	Number of publications in ISI journals produced by CRP		77	98	114	100	119	Link to full 2015 publications list: https://cgspace.cgiar.org/bitstream/handle/10568/73175/2015%20Publications.pdf?sequence=65&isAllowed=y	100
10	Number of targeted agro-ecosystems analysed/characterised by CRP (cumulative)		9	12	15	19	20	CCAFS has 20 climate-smart villages (each actually a cluster of villages). All CSV sites have now been characterised, including those in the new regions (LAM & SEA). Each is part of a particular agro-ecological zone or encompasses several agro-ecological zones. Site descriptions are found here: https://ccafs.cgiar.org/atlas-ccafts-sites	20
11	Estimated population (thousands) of above-mentioned agro-ecosystems		TBD	TBD	TBD	TBD	225,000	Estimated based on rural populations in target countries falling in the agro-ecosystems.	225,000

Capacity enhancement and innovation platforms

#	Indicator	Deviation	2012	2013	2014	2015			2016
			Actual	Actual	Actual	Target	Actual	Link to supporting databases	Target
12	Number of trainees in short-term programs facilitated by CRP (male)	More than expected were trained; perhaps budget cut	4,679	9,455	25,300	10,000	29,589	Data derived from annual reports of all project participants	15000

		will show up in 2016							
13	Number of trainees in short-term programs facilitated by CRP (female)	More than expected were trained; perhaps budget cut will show up in 2016	3,989	14,602	23,000	10,000	25,607	Data derived from annual reports of all project participants	15000
14	Number of trainees in long-term programs facilitated by CRP (male)		488	622	59	50	68	Data derived from annual reports of all project participants	50
15	Number of trainees in long-term programs facilitated by CRP (female)		474	522	43	50	54	Data derived from annual reports of all project participants	50
16	Number of multi-stakeholder R4D innovation platforms established for the targeted agro-ecosystems by the CRPs	Number of platforms expanded as a result of CSVs and other research sites coming on stream	24	3	10	10	39	Data derived from annual reports of all project participants; this number refers to long-term platforms, not those established for short-term projects	35
Technologies/practices in various stages of development									
#	Indicator	Deviation	2012	2013	2014	2015			2016
			Actual	Actual	Actual	Target	Actual	Link to supporting databases	Target
17	Number of technologies/NRM		256	88	120	100	125	Data derived from annual reports of all project participants	120

	practices under research in the CRP (Phase I)								
18	% of technologies under research that have an explicit target of women farmers		7%	31%	20%	40%	34%	Data derived from annual reports of all project participants	35%
19	% of technologies under research that have been assessed for likely gender-disaggregated impact		9%	25%	16%	30%	42%	Data derived from annual reports of all project participants	45%
20	Number of agro-ecosystems for which CRP has identified feasible approaches for improving ecosystem services and for establishing positive incentives for farmers to improve ecosystem functions as per the CRP's recommendations		19	20	26	20	20	Number based on those covered by climate-smart villages; with some climate-smart villages yet to receive much attention in relation to ecosystem services (In CCAFS case this is largely focussed on GHGs) because of limited options for GHG reductions	20
21	Number of people (thousands) who will potentially benefit from plans, once finalised, for the scaling up of		TBD	TBD	TBD	TBD	30,000	This is an estimated number based on the likely reach of CCAFS and partners by 2025. It represents a fraction of the total population in the agro-ecosystems covered by CCAFS (indicator 11), but with further time the reach can be expanded.	20,000

strategies									
22	Number of technologies /NRM practices field tested (phase II)	The number depends on the degree that technologies are split or lumped. In 2016 CCAFS will establish a standard CSA technology database based on a compendium that is now being prepared (ICRAF plus Centers)	57	20	35	25	45	<p>Data derived from annual reports of all project participants (some technologies are in more than one Flagship, but here mentioned only once)</p> <p>FP1</p> <p><i>water smart practices:</i></p> <ol style="list-style-type: none"> 1) rainwater harvesting 2) micro-irrigation 3) raised bed planting 4) water conservation techniques (tied-ridging, bunding, zai, Half-moon) 5) water storage options <p><i>nutrient smart practices:</i></p> <ol style="list-style-type: none"> 6) precision fertilizer application using Nutrient Expert decision support tools. e.g. Sapkota et al. 2014; GreenSeeker and Leaf Color Chart, 7) residue management/mulching e.g., Jat et al 2015; Baudron et al. 2015; Kabirigi et al. 2015; Thierfelder et al. 2015; 8) legume catch-cropping; 9) Micro-dosing 10) Tillage management <p><i>weather smart technologies:</i></p> <ol style="list-style-type: none"> 11) drought tolerant wheat; 12) Drought and mosaic-tolerant cassava, 13) drought-tolerant maize; 14) drought and rust-tolerant common beans, 15) Improved varieties of dryland crops (sorghum, millet, cowpea, okra and Cassia tora; potato late blight disease resistant varieties) eg., Recha et al 2015; Kissel et al. 2015. 16) Drought-tolerant forages, 17) low moisture-tolerant pigeon pea, 18) fast-growing and tolerant to worms galla goats 	25

						<p>and red-Masaai sheep, also Ojango et al. 2015.</p> <p>19) Sweet potato vines</p> <p>Climate smart cropping patterns</p> <p>20) Cop rotation eg., lat et al 2015.</p> <p>21) Intercropping (sorghum-pigeonpea, cereal – cowpea; wheat plus legume, wheat plus garlic; pawpaw trees intercropped with cowpeas, pigeon peas and cassava; foxtail millet/pigeonpea’; banana/coffee)</p> <p>22) Agroforestry; tree-shaded coffee/cocoa; Tree planting associated with groundnut; forestry/Tree planting (domestication); agroforestry pastoral systems</p> <p>FP2</p> <p>1) Participatory Integrated Climate Services for Agriculture (PICSA). https://ccaafs.cgiar.org/getting-participatory-agriculture-climate-services-out-farmers</p> <p>2) Climate information and advisory services through rural radio. https://ccaafs.cgiar.org/themes/climate-services-farmers</p> <p>3) Index-based flood insurance (P41). http://www.iwmi.cgiar.org/News_Room/Press_Releases/2015/press_release-space-technology-to-help-develop-flood-insurance-for-indias-farmers.pdf</p> <p>4) Improved indexes and thresholds for India’s weather-based crop insurance. https://ccaafs.cgiar.org/research-highlight/better-designed-weather-based-insurance-holds-promise-maharashtra-farmers</p> <p>5) Climate-informed, ICT-based agro-advisory service for rice in the Mekong Delta of Vietnam (P47). https://ccaafs.cgiar.org/news/rice-information-</p>
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							<p>farmers-free-accessible-and-fast</p> <p>6) Climate-based forecasting of seasonal crop yields in Nepal with CRAFT (CCAFS Regional Agriculture Forecasting Toolbox). https://ccafs.cgiar.org/blog/forecasting-season-wheat-and-paddy-yields-emerging-results-nepal</p> <p>FP3</p> <p>1) Brachiaria spp. for pasture management to increase forage and cattle productivity and reduce emissions</p> <p>2) Low cost method of measuring GHG emissions using Gasmeter</p> <p>3) Silvopastoral systems compared with introduced grass alone pastures and native pastures for improved cattle productivity and reduced GHG emissions</p> <p>4) Improved forage for cattle for reduced emissions in Kenya</p> <p>5) Manure management for reduced emissions in Kenya</p> <p>6) Alternate wetting and drying (AWD) in paddy rice to save water and reduce GHG emissions in Vietnam, Bangladesh, Philippines https://ccafs.cgiar.org/mitigation-strategies-rice-production-collaboration-climate-and-clean-air-coalition</p> <p>7) Mid-season and early drainage of paddy rice in Vietnam</p> <p>8) Improved rice straw management in Philippines, Vietnam and Cambodia and straw burning experiments in the Philippines</p> <p>9-11 Reduced methane rice varieties in Colombia:</p> <p>9) different starch contents associated with reduced root exudates,</p>	
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								10) Testing of the effects of the arenchyma structure of different wild and commercial varieties for reduced gas transmission, 11) transgenic rice mainly modified for N use efficiency. 12-18 Nitrogen use efficiency and reduced emissions: In Mexico, tested 12) one nitrification inhibitor 13) two slow release N fertilizers 14) one optical sensor technology (tested the sensor technology commercially); In Indo-Gangetic plains of India: 15) different N rates on N2O emission from rice-wheat systems 16) different N application methods on N2O emission from maize-wheat systems 17) 6. different tillage, residue and nutrient management in rice-wheat and maize-wheat cropping systems e.g. Sapkota et al. 2015 ; Aryal et al. 2015 ; Jat el al. 2014 ; Sapkota et al. 2015	
23	Number of agro-ecosystems for which innovations (technologies, policies, practices, integrative approaches) and options for improvement at system level have been developed and are being field tested (Phase II)		12	15	28	20	20	Data derived from annual reports of all project participants; based on the agro-ecosystems covered by Climate-Smart villages	20

24	% of above innovations/approaches/options that are targeted at decreasing inequality between men and women		29%	31%	12%	35%	40%	Data derived from annual reports of all project participants	35%
25	Number of published research outputs from CRP utilised in targeted agro-ecosystems	More than expected, as a result of completing Phase 1 outputs	19	63	55	50	83	Data derived from annual reports of all project participants	50
26	Number of technologies/NRM practices released by public and private sector partners globally (phase III)	Fewer than expected, perhaps due to being first year of new portfolio in Extension Phase	1	15	4	10	3	Data derived from annual reports of all project participants: Alternate Wetting and Drying in Rice 1. Laser Land Levelling: https://ccaafs.cgiar.org/es/research-highlight/laser-land-levelling-how-it-strikes-all-right-climate-smart-chords 2. Maharashtra crop insurance rainfall indices 3. Senegal climate services through private sector radio https://ccaafs.cgiar.org/publications/impact-climate-information-services-senegal	5
Policies in various stages of development									
#	Indicator	Deviation	2012	2013	2014	2015			2016
			Actual	Actual	Actual	Target	Actual	Link to supporting databases	Target
27	Numbers of Policies/ Regulations/ Administrative Procedures Analyzed (Stage 1)		59	118	51	50	63	Data derived from annual reports of all project participants	50

28	Number of policies/regulations / administrative procedures drafted and presented for public/stakeholder consultation (Stage 2)		18	53	14	15	47	Data derived from annual reports of all project participants	20
29	Number of policies / regulations / administrative procedures presented for legislation(Stage 3)		4	7	5	5	6	<p>Data derived from annual reports of all project participants</p> <p>FP3:</p> <p>1-3) Country workplans for scaling up mitigation in rice (Vietnam, Bangladesh and Colombia)</p> <p>FP4)</p> <p>1): 189 countries adopt CGRFA guidelines to integrate genetic resources for food and agriculture into their national climate change adaptation strategies.</p> <p>http://www.fao.org/fileadmin/templates/nr/documents/CGRFA/CCworkshopreport.pdf;</p> <p>https://ccaafs.cgiar.org/blog/new-guidelines-use-agrobiodiversity-climate-change-adaptationplanning</p> <p>2-3) Scenarios Team / Oxford Uni (2):</p> <p>2) Honduras National Strategy for Climate Change Adaptation in Agriculture,</p> <p>https://ccaafs.cgiar.org/blog/helping-honduras-build-more-robust-climate-adaptation-strategy-agriculture-sector</p> <p>3) Bangladesh seventh five-year plan of the Planning Commission,</p> <p>https://ccaafs.cgiar.org/blog/what-does-future-hold-bangladesh-modeling-scenarios-better-climate-policies</p>	5

30	Number of policies / regulations / administrative procedures prepared passed/approved (Stage 4)	Many policy initiatives came to fruition. The greater activity in this area may have been a result of all the global attention on climate change and CSA	4	6	3	5	24	<p>FP2</p> <p>1) “Local Technical Agroclimatic Committees” in the Colombia INDC, in the context of climate services. INDC (Colombia): http://www.slideshare.net/FundacinCol/avances-en-la-formulacin-de-las-indc-de-colombia-mads, https://sector.iadb.org/sites/default/files/inline/files/colombia.pdf; http://mitigationpartnership.net/sites/default/files/u2402/webinar_namas_indc_colombia_-_mads_2015_vinculos_entres_la_contribucion_determinada_y_prevista_a_nivel_nacional_indc_de_colombia_y_las_namas.pdf;</p> <p>2) CCAFS-ANACIM success on CIS dissemination includes the administrative formalization of a regular communication between ANACIM (as a national CIS provider) and other next users of CIS (Agriculture Directorate, Water Management Directorate, Rural Development Ministries, etc.). This allows ANACIM to officially share CIS regularly to these public next users. https://ccafs.cgiar.org/publications/impact-climate-information-services-senegal</p> <p>FP3</p> <p>1) National livestock low emission strategy ratified by the Costa Rican government (ENDGBC): https://ccafs.cgiar.org/supporting-low-emissions-development-latin-american-cattle-sector</p> <p>2) Livestock NAMA in Costa Rica https://ccafs.cgiar.org/blog/ga-how-project-supports-costa-rica-reach-ambitious-mitigation-targets-agriculture</p> <p>FP4</p> <p>1-2) validated CSA framework programs in Uganda, Tanzania</p> <p>1) Tanzania’s new Environmental Policy;</p>	10
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31	Number of policies / regulations / administrative procedures passed for which implementation has begun (Stage 5)		3	1	5	5	5	FP1 1) State government of Haryana, India is using CCAFS-informed guidelines and framework of Local Adaptation Plan for Action (LAPA) for scaling CSAPs under the State Action Plan on Climate Change (SAPCC) https://ccafs.cgiar.org/news/mainstreaming-climate-smart-villages-india 2) Government of India launched an improved subsidy program to install 10,000 solar-pumps for irrigation http://southasia.ifpri.info/2015/10/07/fighting-droughts-in-bihar/ FP3 1) Implementation of Vietnam's Decision 3119 is beginning via the work plan for AWD scale-up. FP4 https://cgspace.cgiar.org/rest/bitstreams/60521/trieve 1): Eight countries starting to implement the ITPGRFA https://activities.ccafs.cgiar.org/data/projects/66/project_outcome/Comms_Report_Treaty_Nagoya_Meeting_Addis_Dec_2015.docx 2) Scenarios Team / Oxford Uni : Cambodia Climate Change Priorities Action Plan being implemented,	5

								http://ccaafs.cgiar.org/sites/default/files/files/CCPAP%202014-18-1.docx	
Outcomes on the ground									
#	Indicator		2012	2013	2014	2015			2016
			Actual	Actual	Actual	Target	Actual	Link to supporting databases	Target
32	Number of hectares (thousands) under improved technologies or management practices as a result of CRP research		287	121	185	500	587	Data based on project participant reports related to above technologies and policies	650
33	Number of farmers (thousands) and others who have applied new technologies or management practices as a result of CRP research		928	73	3900	2000	3869	Data based on project participant reports related to above technologies and policies	4000

ANNEX 2: PERFORMANCE INDICATORS FOR GENDER MAINSTREAMING WITH TARGETS DEFINED

Exceeded performance requirements

CO proposed format:

Performance indicator	CRP performance approaches requirements	CRP performance meets requirements	CRP performance exceeds requirements
1. Gender inequality targets defined	Sex-disaggregated social data is being collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations	Sex-disaggregated data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations And The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main targets populations relevant to its expected outcomes (IDOs)	Sex-disaggregated data collected and used to diagnose important gender-related constraints in at least one of the CRP's main target populations And The CRP has defined and collected baseline data on the main dimensions of gender inequality in the CRP's main targets populations relevant to its expected outcomes (IDOs) And CRP targets changes in levels of gender inequality to which the CRP is or plans to contribute, with related numbers of men and women beneficiaries in main target populations
2. Institutional architecture for integration of gender is in place	<ul style="list-style-type: none"> CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORs. Procedures defined to report use of available diagnostic or baseline knowledge on gender routinely for assessment of the 	<ul style="list-style-type: none"> CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORs. Procedures defined to report use of available diagnostic or baseline knowledge on gender routinely for assessment of the 	<ul style="list-style-type: none"> CRP scientists and managers with responsibility for gender in the CRP's outputs are appointed, have written TORs. Procedures defined to report use of available diagnostic or baseline knowledge on gender routinely for assessment of the

	<p>gender equality implications of the CRP's flagship research products as per the Gender Strategy</p> <ul style="list-style-type: none"> • CRP M&E system has protocol for tracking progress on integration of gender in research 	<p>gender equality implications of the CRP's flagship research products as per the Gender Strategy</p> <ul style="list-style-type: none"> • CRP M&E system has protocol for tracking progress on integration of gender in research <p>And</p> <ul style="list-style-type: none"> • A CRP plan approved for capacity development in gender analysis 	<p>gender equality implications of the CRP's flagship research products as per the Gender Strategy</p> <ul style="list-style-type: none"> • CRP M&E system has protocol for tracking progress on integration of gender in research <p>And</p> <ul style="list-style-type: none"> • A CRP plan approved for capacity development in gender analysis <p>And</p> <ul style="list-style-type: none"> • The CRP uses feedback provided by its M&E system to improve its integration of gender into research
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ANNEX 3. CROSS-CRP LINKAGES

CRP	Joint activities in 2015
CRP 1.1.Dryland Systems	<ul style="list-style-type: none"> • Bioersivity work in SA on drought tolerant and nutritious crops • Integrated crop-livestock-agroforestry systems • Joint implementation in Burkina Faso • Use of CCAFS CSVs as DS satellite sites in West Africa
CRP 1.2 Humidtropics	<ul style="list-style-type: none"> • Coffee and banana climate adaptation work led by IITA • Household modelling of adaptation, risk management and mitigation options • Joint research at Climate Smart Villages in Vietnam and Central America
CRP 1.3 AAS	<ul style="list-style-type: none"> • Joint work in Pacific • Bangladesh field activities • Joint research at Climate Smart Villages in Cambodia
CRP 2 PIM	<ul style="list-style-type: none"> • Joint investment in IMPACT model to model global food security futures • Seed systems: management of common resources (Bioersivity) • Policy analyses, scaling up and engagement processes, e.g. in Philippines • Joint research at Climate Smart Villages in Vietnam
CRP 3.1 WHEAT	<ul style="list-style-type: none"> • Implementation of WHEAT technologies Laser Land Levelling & Nutrient Expert in CCAFS Climate Smart Villages • Crowd-sourcing to evaluate new varieties being generated • Understanding and evaluating the response of wheat to climate change in time and space, and generating comprehensive breeding strategies for wheat improvement • Together with a number of CRPs, CCAFS led a workshop sessions on Monitoring &

	<p>Evaluation of Communications during a 3-day Agknowledge Innovation Process Share Fair and Writeshop, took part in the Communication Task Force to review the experience of CRP communications, provide recommendations for Phase II CRP Proposal Guidelines, and develop a draft Conceptual Framework for Communications outlining six areas of interventions that encompass critical aspects of communications for research delivery and impact.</p>
CRP 3.2 MAIZE	<ul style="list-style-type: none"> • Identification and screening for locally-adapted heat and drought tolerant maize (Zimbabwe) (CIMMYT) • Shared research on Conservation Agriculture in Eastern and Southern Africa, and in South Asia • Implementation of MAIZE technologies Integrated Soil Fertility Management, Drought-Tolerant Maize & Nutrient Expert in CCAFS Climate Smart Village • Co-development of strategy to integrate drought-tolerant maize into national agricultural insurance strategy for Nigeria • Communication activities (see under WHEAT)
CRP 3.3 GRiSP	<ul style="list-style-type: none"> • Implementation of GRiSP technologies Alternate Wetting and Drying (AWD), direct seeding & Nutrient Manager in CCAFS Climate Smart Villages • Online platform "Nutrient Manager for Rice" • Expansion of ICT-based Crop Manager for Rice into an climate-informed, ICT-based agro-advisory service • Vietnam and Myanmar rice sector restructuring • ASEAN Rice information gateway
CRP 3.4 RTB	<ul style="list-style-type: none"> • Collaboration on banana and cassava, including modelling to inform breeding • Agroecology of banana-based systems • Joint research at Climate Smart Villages in Vietnam and Tanzania
CRP 3.5 Grain legumes	<ul style="list-style-type: none"> • Breeding priorities for beans • Implementation of Grain legumes technologies drought-tolerant cowpea varieties drought-tolerant low-shattering soybean, drought-tolerant sesame and drought tolerant sorghum/cowpea intercropping in CCAFS Climate Smart Villages in East and West Africa
CRP 3.6 Dryland cereals	<ul style="list-style-type: none"> • Implementation of Dryland cereals technologies - drought-tolerant sorghum and drought-tolerant millet - in CCAFS Climate Smart Villages
CRP 3.7. Livestock & fish	<ul style="list-style-type: none"> • Implementation of Livestock & Fish technologies on Drought-tolerant goat breeds in CCAFS Climate Smart Villages (Kenya) • Shared gender postdoc (ILRI, Kenya) • Joint work on dairy value chains in the East Africa Dairy Development Project • Biological Nitrogen Fixation (through the project "Livestock-Plus") • Livestock population mapping work • Index-based insurance case studies • Downscaling regional scenarios for household risk modelling
CRP 4 A4NH	<ul style="list-style-type: none"> • Collaborative research and co-communication on Global Panel on Sustainable Agriculture and Nutrition report • Planning for shared research in Phase 2 of CRPs (a planned Cluster of Activity under CCAFS Flagship 1) around resilient food systems for nutritional outcomes
CRP 5 WLE	<ul style="list-style-type: none"> • Implementation of WLE technologies Water harvesting techniques (stone bunds, grass strips, hedge rows, zaï and half-moons) and solar irrigation in CCAFS Climate Smart Villages (West Africa and South Asia)

	<ul style="list-style-type: none"> • Metrics for adaptive capacity • Joint research and policy engagement on (a) underground taming of floods and (b) flood insurance in South Asia • Crowd sourcing (Bioiversity) • Co-development of “4 per mille” initiative on soil carbon with French research partners • Joint implementation in Burkina Faso and at Climate-Smart Villages in Laos • Communication activities (see under WHEAT)
CRP 6 FTA	<ul style="list-style-type: none"> • Metrics for adaptive capacity • Enhancement of adaptive capacity through innovative technological packages for expanding commodity crops in the Amazon • Methodological approaches to diversity in changing climates • Farmer Managed Natural Tree Regeneration • Contribution of tree diversity to livelihoods for climate change adaptation and mitigation • Climate change mitigation and agricultural development scenarios for the high plains of Eastern Colombia • Private-public partnerships for sustainable commodity agriculture and reducing deforestation in Brazil • Spatial analysis of drivers of deforestation, including agriculture • Joint implementation in Burkina Faso • Planning towards site convergence in Vietnam

ANNEX 4: CRP STAFFING

	Female	Male	Total	% Female
Director/Team leader		1	1	0%
Program Management Committee (PMC)	2	4	6	33%
Independent Science Panel	3	5	8	38%
Core staff (inc PMC plus Flagship and Regional Leaders, data management, communication)	7	10	17	41%
Principal investigator/lead scientist	25	73	98	26%
Scientist	86	140	226	38%
Post-doc/Research fellows	18	23	41	45%
Other scientific and support staff	10	5	15	66%
TOTAL CRP	151	261	412	37%

ANNEX 5: FURTHER BREAKDOWN OF CAPACITY DEVELOPMENT INDICATORS.

	Total	Developing country
Number of trainees in short-term programs facilitated by CRP (male)	29,589	98%
Number of trainees in short-term programs facilitated by CRP (female)	25,607	97%
Number of trainees in long-term programs facilitated by CRP (male)	68	75%
Number of trainees in long-term programs facilitated by CRP (female)	54	70%