Annex 4 - CRP Performance 2017

Progress markers, proposed indicators and targets disaggregated to flagship level

Purpose

This document is intended as a companion to document SC3-03 ("Towards a Performance-based Management System for CGIAR Research") and sets out a proposed first outline of proposed Progress Markers, proposed indicators and targets, disaggregated to flagship level for CRPs.

Document category: Working document of the System Council
There is no restriction on the circulation of this document

Prepared by: the CGIAR System Management Office

CRP Performance 2017: progress markers, proposed indicators and targets disaggregated to flagship level

Contents

A4NH (Agriculture for Nutrition and Health)

A4NH FP1: Food Systems for Healthier Diets in 2017

Milestone Description for 2017[1]		Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 / total (%)[2]
1.1	None for 2017		Partners and other CRPs incorporate nutrition, health and gender in agri-food value chains and food systems programs	$1,429,600 / $4,735,910 (30%)	$10,001,980 / $33,339,933 (30%)
1.2	At least 2 partners, including value chain actors, participate in the identification and design of at least 2 gender-sensitive interventions aligned with findings from CoA1 to improve diets in Ethiopia and Vietnam	Program monitoring and reporting annual reports from partners	Partners, including value chain actors, use evidence from impact evaluations when making operational and investment decisions	$1,584,400 / $5,248,724 (30%)	$11,083,667 / $36,945,558 (30%)
1.3	None for 2017		Public-private partnerships formed to promote implementation of A4NH strategies for agri-food value chain/food system innovations and interventions at scale	$986,000 / $3,266,374 (30%)	$6,899,550 / $22,998,500 (30%)

[1] From A4NH Full Proposal Table D
[2] From A4NH Full Proposal Table B

A4NH FP2: Biofortification in 2017

	Milestone Description for 2017[3]	Means of Verifying[3]	For which 2022 outcomes[3]	Budget 2017	6-year W1-2 / total (%)[4]
2.1	All 8 target countries release second-wave of tier 1 crops	Head of crop development annual reporting from CGIAR partners, NARS, and national release committees	High-yielding micronutrient enhanced varieties developed and released in target and expansion countries	0/ $8,169,286 (0%)	0 / $51,200,949 (0%)
2.2	5 CGIAR centers develop a workplan and strategy in collaboration with HarvestPlus to operationalize 2014 commitment to mainstreaming	Head of crop development annual reporting from CGIAR partners	Biofortification mainstreamed into CGIAR and NARS breeding efforts	0/ $2,732,095 (0%)	0 / $17,066,983 (0%)
2.3	6.5 million HHs growing and consuming biofortified crops (6 million in target countries, 0.5 million in partnership countries)	Monitoring database partner reporting	High-yielding micronutrient enhanced varieties delivered at scale in target and expansion countries	$2,500,000 / $9,640,932 (26%)	$16,432,989 / $60,445,446 (27%)
2.4	2 decisionmaking tools incorporating bioavailability and efficacy evidence for zinc rice in Bangladesh	Publications Head of Nutrition	Evidence on nutritional efficacy and impact informs value chain actors, as well as national and international investors	$1,000,000 / $3,214,867 (31%)	$6,572,735 / $20,148,482 (31%)
2.5	Ex ante impact and cost-effectiveness of biofortification interventions are proven and compared to those of other nutrition interventions (supplementation and fortification)	Head of Impact Proposal on zinc wheat effectiveness study approved and implementation started Reports on impact assessment studies completed Age- and sex-disaggregated datasets generated as part of impact assessments made available.			
2.6	Impact evidence available on iron beans in Rwanda and vitamin A maize in Zambia to inform crop development and delivery strategies	Head of Impact Proposal on zinc wheat effectiveness study approved and implementation started Reports on impact assessment studies completed Age- and sex-disaggregated datasets generated as part of impact assessments made available.			
2.7	Country programs use monitoring and forecasting data to inform delivery strategies	Head of Impact Proposal on zinc wheat effectiveness study approved and implementation started Reports on impact assessment studies completed Age- and sex-disaggregated datasets generated as part of impact assessments made available.			
2.8	The revised biofortification priority index (BPI 2.0) is are available to partners for informing decisions on investing in implementing and evaluating biofortification projects	Head of Strategic Alliances, information from/websites of multilateral institutions and other stakeholders	Biofortification supported by global institutions and incorporated into plans and policies by stakeholders	0/ $12,951,218 (0%)	0 / $81,195,380 (0%)
2.9	Biofortification is included in at least two additional global, regional or national a larger number of strategies and policies	Head of Strategic Alliances, information from/websites of multilateral institutions and other stakeholders			

[3] **Revised** from A4NH Full Proposal Table D.

[4] **Revised** from A4NH Full Proposal Table B. The online submission tool asked for % of budgets from W1/W2 instead of values. A4NH had to submit W1/W2 percentages that the online submission tool would accept. In reality, this is how W1/W2 is being allocated across the outcomes in FP2.

A4NH FP3-Food Safety in 2017

	Milestone Description for 2017[5]	Means of Verifying[5]	For which 2022 outcomes[5]	Budget 2017	6-year W1-2 / total (%)[6]
3.1	National partners in at least 2 countries agree to engage in a gender-sensitive policy/regulatory review process on food safety in informal markets	Monitoring reports (which include gender indicators) citations in official policy statements and documents	Key food safety evidence users (donors, academics, INGOs, national policymakers, regulators, civil society, and industry) are aware of and use evidence in the support, formulation and/or implementation of pro-poor and risk-based food safety approaches	$520,000 / $1,550,000 (34%)	$3,018,253 / $9,736,301 (31%)
3.2	Livestock policy platforms established in 4 countries by CRP Livestock during Phase I, use A4NH evidence on food safety in informal markets to consider improvements to specific value chain(s)	Partner reports review of official policy documents and statements			
3.3	1-2 CRP value chains for animal-source foods and/or produce identified for scaling up and out using incentive and market based approaches, coordinated with CRP Livestock, CRP Fish and others	Monitoring reports partner reports	Market-based food safety innovations delivered at scale in key countries along with understanding of their impact and appropriate use	$1,260,000 / $3,780,000 (33%)	$7,065,451 / $22,791,779 (31%)
3.4	39,000 farmers use biocontrol across 8 countries in Sub Saharan Africa	Aflasafe production logs monitoring systems by countries (agreed under PACA) partner reporting tracking (including gender indicators)	Biocontrol and GAP delivered at scale in key countries along with understanding of their impact and appropriate use	$1,720,000 / $5348, 892 (32%)	$14,471,919 / $46,683,611 (31%)

[5] **Revised** from A4NH Full Proposal Table D.

[6] From A4NH Full Proposal Table B

A4NH FP4: Supporting Policies, Programs, and Enabling Action through Research (SPEAR) in 2017

Milestone Description for 2017[7]		Means of Verifying[7]	For which 2022 outcomes[7]	Budget 2017	6-year W1-2 / total (%)[8]
4.1	None for 2017		Development program implementers and investors (governments, NGOs, UN institutions) use evidence, tools and methods to design and implement cost-effective nutrition-sensitive agricultural programs at scale	$1,952,767 / $10,072,093 (19%)	$12,339,296 / $68,551,647 (18%)
4.2	In collaboration with program implementers, evidence and evaluation tools developed in Phase I are used to develop proposals for assessing different nutrition- and gender-sensitive programs in 2 countries (tbd), each with a rigorous evaluation component included	Program/proposal documentation. Requests for collaboration on proposals for programs including evaluations from program implementers	Researchers and evaluators, including in CGIAR and other CRPs, use evidence, tools and methods to design high-quality evaluations of a range of nutrition-sensitive agricultural and other multisectoral programs, and continue to build evidence	$650,922 / $3,357,364 (19%)	$4,113,099 / $22,850,549 (18%)
4.3	FP4 researchers and stakeholders map and analyze current cross-sectoral nutrition-sensitive discourse and context in regional and global organizations	Annual reporting from partners, FP outputs	Regional, international and UN agencies and initiatives and investors use evidence, tools and methods to inform decisions and investment strategies to guide and support nutrition-sensitive agricultural programming and nutrition-sensitive policies	$272,545 / $`1,405,748 (19%)	$1,722,179 / $9,567,662 (18%)
4.4	Policy environment analysis/stories of change undertaken in 7 focal countries	Annual reporting from partners, FP outputs	National policymakers and shapers, and stakeholders from different sectors, civil society and industry use evidence to design effective nutrition-sensitive policies and ensure quality implementation.	$553,349 / $2,854,096 (19%)	$3,496,546 / $19,425,253 (18%)
4.5	Key partners from SUN, CAADP, and others in identified pathways at national, regional, international and subnational levels and cross-CRP engage in flagship agenda	Annual reporting from partners	Stakeholders from different sectors, civil society and industry listed in the other four outcomes, including CGIAR and other CRPs, have improved capacity to generate and use evidence to improve nutrition-sensitive agricultural programming, nutrition-sensitive policymaking and implementation.	$570,416 / $2,942,128 (19%)	$3,604,394 / $20,024,412 (18%)

7 **Revised** from A4NH Full Proposal Table D.

8 From A4NH Full Proposal Table B.

A4NH FP5: Improving Human Health

	Milestone Description for 2017[9]	Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 / total (%)[10]
5.1	Key areas of potential research collaboration identified and projects underway: 1) Research project to integrate datasets for analysis (if interactions are identified by holders of datasets) established. (2) Rice researchers demonstrate interest in measuring mosquito productivity as well as rice productivity.	Event reports annual reporting from partners; self-assessment reports from partners (e.g., key informant interviews)	Agricultural research initiatives, including farming communities, measure health risks and benefits	$700,000 / $1,699,253 (41%)	$4,712,552 / $18,850,209 (25%)
5.2	At least 15 research organizations representing natural and social scientists from health and agriculture participate in theme-based symposia to identify and develop research areas, recognizing gender and equity issues	Annual reporting from partners; event reports gender sessions in symposia	Agricultural and public health policymakers and implementers deliver coordinated and effective solutions to cysticercosis and other zoonotic threats	$700,000 / $2,068,484 (34%)	$4,791,949 / $19,167,795 (25%)
5.3	15 decision makers made aware of global maps of antimicrobial drug use in livestock keeping systems	Annual reporting from partners; content analysis of official statements and documents	Public and private sector policymakers implement measures to reduce health risks from antimicrobial resistance in hotspot livestock systems	$600,000 / $1,802,973 (33%)	$4,176,855 / $16,707,419 (25%)

9 **Revised** from A4NH Full Proposal Table D.

10 From A4NH Full Proposal Table B.

A4NH Table 2: SLOs, IDOs and sub-IDOs with proposed indicators

(*) A4NH-FPs and Sub-IDOs listed are extracted from the A4NH PIM Table C (Full proposal)
(**) The proposed indicators are based on milestones from the A4NH PIM Table D (Full proposal). When the proposed draft indicator is grey/blank, it implies that the indicator for that sub-IDO may be part of another A4NH indicator or through another CRP. Targets for 2017 are also based on PIM Table D.

Most of the indicators combine contributions from different flagships as well as management and cross-cutting (evaluation, gender and country coordination).
The cross-cutting elements and their budgets are described in greater detail in the proposal.

FP(*)	SLO	IDO	Sub-IDO (*)	Proposed draft indicators (**)	Targets for 2017 (**)
FP3	Reduced Poverty (SLO1)	Enhanced smallholder market access	Reduced market barriers	Number of traders in Kenya, Tanzania, Uganda, and Vietnam benefitting from training & certification scheme	Targets in subsequent years
FP1		Increased incomes and employment	Diversified enterprise opportunities		
FP4			Increased livelihood opportunities		
FP2		Increased productivity	Closed yield gaps through improved agronomic and animal husbandry practices	Number of households growing biofortified varieties	6.5 million
FP1 FP2 FP4	Improved Food and Nutrition Security for Health (SLO2)	Improved diets for poor and vulnerable people	Increased availability of diverse nutrient-rich foods	Number of value chain actors using evaluation findings to inform operational and investment decisions in food systems for healthier diets	Targets in subsequent years
FP1 FP2 FP4			Increased access to diverse nutrient-rich foods	Number of individuals consuming biofortified crops	32.5 million
FP1 FP4			Optimized consumption of diverse nutrient-rich foods	Number of development organizations using A4NH results on (gendered) impacts and cost-effectiveness in programming of nutrition-sensitive agriculture programs	3
FP3		Improved food safety	Reduced biological and chemical hazards in the food system	Number of farmers adopting Good Agricultural Practices and/or biocontrol to mitigate aflatoxin contamination	39,000

				Number of public sector agencies and/or private agribusinesses adopting gender-sensitive Good Agricultural Practices and/or biocontrol to reduce aflatoxin contamination in crop value chains	Targets in subsequent years
FP3			Appropriate regulatory environment for food safety	Number of countries and/or regional organizations using results of A4NH food safety research in design of monitoring systems, policies, and regulations that take into account equity and risks	6
FP5		Improved human and animal health through better agricultural practices	Reduced livestock and fish disease risks associated with intensification and climate change	Number of stakeholders with access to a validated and semi-commercialized pen-side diagnostic assay for cysticercosis Number of research partners influenced by A4NH research on agricultural intensification and links to human health Number of national, regional, or global bodies using A4NH evidence to inform policy processes, guidelines, and program implementation related to zoonoses prevention and control in livestock communities	Targets in subsequent years 17 Targets in subsequent years
FP5			Increased safe use of inputs	Number of policy makers and decisionmakers aware of and using A4NH research on the livestock sector's contribution to antimicrobial resistance	15
FP5	Improved Natural Resources Systems and Ecosystems Services (SLO3)	More sustainably managed agro-ecosystems	Increased resilience of agro-ecosystems and communities- especially those including smallholders	Number of communities where farmers are using methods developed through participatory research which reduce vector risk Number of national agricultural research authorities issuing recommendations promoting agricultural production methods which reduce vector risk	Targets in subsequent years Targets in subsequent years
FP5			Enhanced adaptive capacity to climate risks		
FP4	Climate change (CC)	Mitigation and adaptation achieved	Enabled environment for climate resilience	Number of countries and/or regional organizations engaging in and influenced by A4NH research on building an enabling environment for cross sectoral policy processes, including both nutrition and climate	7
FP3 FP4	Gender and youth (CC)	Equity and inclusion achieved	Gender-equitable control of productive assets and resources	Number of organizations implementing agricultural projects with women's empowerment objectives and using pro-WEAI to monitor impacts	

FP1 FP2 FP4 FP5			Improved capacity of women and young people to participate in decision-making		Targets in subsequent years
FP3 FP4	Policies and institutions	Enabling environment improved	Increased capacity of beneficiaries to adopt research outputs	Number of millers with capacity to monitor the safety of food supplied to non-farm maize meal consumers in Africa	Targets in subsequent years
FP2 FP4			Increased capacity of partner organizations as evidenced by rates of investment in agricultural research	Number of partner organizations with increased capacity in nutrition sensitive agriculture programming and policy	2
FP1 FP2 FP4			Conducive agricultural policy environment	Number of countries and/or regional organizations engaging in and being influenced by A4NH research on nutrition sensitive agricultural policy	7
FP5			Conducive environment for managing shocks and vulnerability, as evidenced in rapid response mechanisms		
All	Capacity development (CC)	National partners and beneficiaries enabled	Enhanced institutional capacity of partner research organizations	Number of research partners with increased institutional capacity to conduct integrated ANH research	5
FP3 FP4 FP5			Enhanced individual capacity in partner research organizations through training and exchange	Number of individuals with increased capacity to conduct integrated ANH research	100
FP1 FP4			Increased capacity for innovation in partner research organizations	Number of research organization across the 4 focus countries applying validated metrics and tools for assessing diet quality and characterizing food systems	Targets in subsequent years
FP4			Increased capacity for innovation in partner development organizations and in poor and vulnerable communities		

CCAFS (Climate Change, Agriculture and Food Security)

CCAFS FP1: Priorities and Policies for CSA in 2017

Milestone Description for 2017[11]		Means of Verifying[1]	For which 2022 outcomes[1]	2017-year W1-2 / total (%)	6-year W1-2 / total (%)[12]
1.1	New generation of multi-level CCAFS scenarios methodology developed and tested, including combined climate and socio-economic scenarios with a focus on food and nutrition security and gender and social inclusion gaming approaches for youth are explored	Journal articles and reports, including documented scenarios tools	14 organisations and institutions in selected countries/states adapting plans and directing investment to optimise consumption of diverse nutrient-rich foods, with all plans and investments examined for their gender implications	850,000 / 2,450,000 (35%)	5,250,000 / 14,910,000 (35%)
1.2	CCAFS regional scenarios are used for multilevel policy development and implementation in selected countries/states, focusing on climate and food and nutrition security policies aimed at dietary diversity	Evidence of CCAFS science included in policy processes, media coverage and partner websites			
1.3	2 modified versions of global and regional models to evaluate climate smart practices and technologies and the related trade-offs and synergies for CSA are developed and tested	Technical progress reports and documented model runs 1 journal article	20 countries/states where CCAFS priority setting used to target and implement interventions to improve food and nutrition security under a changing climate	650,000 / 2,550,000 (25%)	6,120,000 / 16,970,000 (36%)
1.4	Cross-CRP modes of operation are defined, including joint ex ante analyses and data sharing and the CoA 1.1 Learning Platform established	Operationalisation of the learning platform with joint work-plan			
1.5	Novel analytical frameworks, indicators and metrics for evaluating cross-level dynamics and the effectiveness of enabling policy environments to support adaptation options and the scaling of CSA are developed and tested, considering 'good enough' governance	Journal articles and reports novel analytical frameworks are documented on the CCAFS website	USD 450 million new investments by state, national, regional and global agencies, informed by CCAFS science and engagement	1,550,000 / 4,350,000 (36%)	9,100,000 / 23,700,000 (38%)
1.6	Science-policy exchange processes, stakeholder fora and learning alliances are maintained and create conditions for open policy dialogue draft guidelines for mainstreaming climate change adaptation and climate smart practices in agriculture and other sectors and at different administrative levels are disseminated	Policy briefs, websites of operational science-policy platforms at national and subnational levels, CCAFS mentioned in regional and global partner publications and websites, media coverage, draft guidelines published by partner organisations			
1.7	Comparative analysis completed of enabling policy environments (especially food and nutrition security policies) with respect to gender equity considerations and recommendations for strengthened gender and social inclusion in enhanced enabling policy environments	Journal articles and research reports, recommendations documented	20 national/state organisations and institutions adapting their plans and directing investment to increase women's access to, and control over, productive assets and resources	600,000 / 2,000,000 (30%)	4,380,000 / 11,280,000 (39%)
1.8	Training materials are developed and workshops held to strengthen the capacity of national partners in applying decision support tools in targeting, priority setting, policy and investment decision making capacities and articulating national priorities in global fora national planners are supported in utilising CCAFS information in policy decisions and investment plans through science-policy platforms and processes (linked to activities/milestones in CoA 1.1 and 1.2)	Training materials, workshop reports and attendance lists, policy decisions and investment plans	11 policy decisions taken (in part) based on engagement and information dissemination by CCAFS	650,000 / 1,910,000 (34%)	4,280,000 / 11,580,000 (37%)
CCAFS FP1: Total				**4,300,000 / 13,260,000 (32%)**	**29,130,000 / 78,440,000 (37%)**

[11] From CCAFS Full Proposal Table D
[12] From CCAFS Full Proposal Table B

CCAFS FP2: Climate Smart Technologies and Practices in 2017

	Milestone Description for 2017[1]	Means of Verifying[1]	For which 2022 outcomes[1]	2017-year W1-2 / total (%)	6-year W1-2 / total (%)[2]
2.1	Synthesis reports on local-level enabling environment, incentives and subnational policies and plans (LAPAS) supporting CSA investment and enhanced adoption	Publication of evaluation of LAPAs efficacy in promoting adaptation and gender-equitable CSA adoption in SA Research products on understanding the role of local institutions in providing supporting services and incentive mechanisms to farmers, policy briefs on CSA technologies and practices and CSVs for diverse production ecologies	6 million farm households receiving incentives (training, financial, programmatic, policy-related) for adopting CSA related practices and technologies that potentially reduce production risks	1,200,000 / 4,700,000 (26%)	9,000,000 / 40,000,000 (23%)
2.2	Lessons learned and knowledge products to overcome barriers to investment and further adoption constraints at local scales	Social science reports, research papers and outreach products			
2.3	A short list of CSA technologies, practices/services with good potentials for business case (incl Business model for small ruminant value chain) in SA and EA Business plan developed and validated in three SA CSVs business model for water storage options, including alternative investments options tested in WA	Technical report, Policy briefs	15 sub-national public/private initiatives providing access to novel financial services and supporting innovative CSA business models	1,000,000 / 4,500,000 (22%)	7,500,000 / 33,300,000 (23%)
2.4	2 pilots of widespread use of CSA practices in voluntary certification schemes (cocoa or coffee value chains) and testing of innovative financial mechanisms in 2 CSVs in WA	Training materials, Policy briefs and synergy reports on innovative finance instruments/funding sources for incentivizing CSA adoption.			
2.5	10 promising climate smart water, crop-livestock-agroforestry practices and 5 value chains prioritized, tested and adapted in CSVs in 12 countries supported by Agricultural Innovation platforms.	Synthesis reports UTFI pilot implemented in India. Context-specific protocols and checklists on CSA options documented for CSA dissemination, guidelines, tools Commitment from government agencies in India to implementation UFTI an intermediate scale support pledging for upscaling Refereed journal paper on AIPs	50 site-specific targeted CSA technologies/ practices tested, with all options examined for their gender implications	2,200,000 / 6,200,000 (35%)	13,500,000 / 55,500,000 (24%)
2.6	Common analytical frameworks, protocols and case studies developed for evaluating socially disaggregated CSA practices and technologies benefits on productivity, adaptation and mitigation (with FP3) data capture (for standardized climate, soil and management information at site-specific level) and assess cost-effectiveness of CSA	Research report, CBA analysis, high impact papers, policy briefs on CSAPs, websites, protocols, Case studies of single versus multi-commodity options guidelines for ready-to-use analytical tools, Android Apps			
2.7	Gender tailored CSA portfolios and business cases identified for testing with local partners in CSVs.	Technical report, Policy brief	15 development organisations, with the focus on investments for CSA activities, adapting their plans or directing investment to increase women's access to, and control over, productive assets and resources.	800,000 / 2,800,000 (29%)	5,500,000 / 25,000,000 (22%)
2.8	Gender disaggregated impact of CSA technologies and practices evaluated in CSVs Framework, methods and approaches developed to co-design, test and monitor transformative gender focus options	Technical report, working paper, peer reviewed publication			
2.9	Diagnosis on subnational policy and institutional frameworks analysis focusing on different options that can support the adoption of preferred CSA practices	Working paper, Policy briefs on strengthening mechanism for local institutions for supporting scaling-out CSA interventions, services & incentives	10 policy decisions taken (in part) based on engagement and information dissemination by CCAFS	810,000 / 3,110,000 (26%)	5,500,000 / 18,500,000 (30%)
2.10	CSA knowledge products made available for partners including Africa CSA and mitigation compendiums online (approximately 30,000 datapoints), Climate Wizard updated and 5 CSA X-rays	Project/workshop report websites and downloadable documents			
CCAFS FP2: Total				**6,010,000 / 21,310,000 (39%)**	**41,000,000 / 172,300,000 (24%)**

CCAFS FP3-Low Emissions Development in 2017

	Milestone Description for 2017[1]	Means of Verifying[1]	For which 2022 outcomes[1]	2017-year W1-2 / total (%)	6-year W1-2 / total (%)[2]
3.1	Network of trial sites for more efficient management options for fertilizer, feed, water, and land use in 5-8 countries	Trial sites established, documented in blogs online	20 agricultural development initiatives where CCAFS science is used to target and implement interventions to increase input efficiency	873,000 / 1,653,000 (53%)	5,907,000 / 10,855,000 (54%)
3.2	Identification of food loss and waste (FLW) opportunities for LED and commercially viable interventions in priority product value chains	Publications on priority interventions disseminated to farmers', processors' and distributors' organisations			
3.3	Framework for institutional innovation and monitoring to enhance performance of cattle farming in Brazil	Multi-stakeholder platform established	0.8 million hectares targeted by research-informed initiatives for restoring degraded land or preventing deforestation	658,000 / 1,928,000 (34%)	4,521,000 / 10,621,000 (43%)
3.4	Analysis supporting more ambitious INDC targets and resource guide to LED available to investors, donors and country partners with analysis including gender implications	Journal articles on INDC targets and LED resource guide, publicized on social media	10 low emissions plans developed that have significant mitigation potential for 2030, i.e. will contribute to at least 5% GHG emissions reduction or reach at least 10,000 farmers, with all plans examined for their gender implications	1,965,000 / 5,035,000 (39%)	13,291,000 / 28,525,000 (47%)
3.5	Improved emission factors and estimation methods for smallholder emissions, for incorporation into LED planning and prioritization tools	Online platform providing emission factors and methods, emission factors in IPCC database			
3.6	Mitigation hotspots and priorities by sector and country in 5-8 countries	Hotspots and priorities available to country ministries			
3.7	Gender-disaggregated data on social factors influencing uptake of LED practices for rice and livestock	Reports, data sets available online	15 organisations adapting their plans or directing investment to increase women's participation in decision-making about LED in agriculture	437,000 / 1,027,000 (43%)	3,018,000 / 4,632,000 (65%)
3.8	Flagship knowledge products made available for partners including Mitigation Option Tool, online mitigation compendium, primer on LED in agriculture, smallholder emissions estimation platform with training materials and emission factors (SAMPLES)	Mitigation Option Tool, compendium, emissions estimation platform available online and publicized via blogs, newsletters, and country outreach	15 policy decisions taken (in part) based on engagement and information dissemination by CCAFS	437,000 / 627,000 (70%)	2,953,000 / 6,027,000 (49%)
3.9	Agricultural LED readiness indicators available	Readiness indicators circulated to donors and country ministries			
CCAFS FP3: Total				**4,370,000 / 10,270,000 (43%)**	**29,690,000 / 60,660,000 (49%)**

CCAFS FP4: Climate services and safety nets in 2017

	Milestone Description for 2017[1]	Means of Verifying[1]	For which 2022 outcomes[1]	2017-year W1-2 / total (%)	6-year W1-2 / total (%)[2]
4.1	Flood insurance theoretical and institutional framework, tools, community of practice, public-private partnership model and analysis of scaling potential in SA.	Project reports, tools, documented partnership platform	8 million farm households with improved access to capital, with increased benefits for women (millions)	1,000,000 / 2,200,000 (45%)	9,500,000 / 21,500,000 (44%)
4.2	Evidence from existing insurance initiatives, capacity development, piloting, and analysis of scaling potential for insurance linked to credit and inputs in EA and WA.	Project reports. Preliminary gender-disaggregated evaluation of existing programs. Analysis reports and journal article. Policy briefs.			
4.3	NMS and regional climate institutions implement new climate information or climate-related early warning products/platforms targeting agricultural decision-makers, NMS implement gridded climate products for farmers in WA, ICPAC initiates new EA regional climate information and capacity-building, NARES or other farmer intermediary organizations implement new participatory and ICT-based communication channels scaled up for rural climate services	Project reports, Outcome case studies. Partner reports, websites, training/communication event reports. Climate information "maprooms" on partner websites. Media reports.	40 institutions or major initiatives that use CCAFS research outputs for services that support farm households' management of climatic risks	1,600,000 / 4,300,000 (37%)	7,500,000 / 16,750,000 (45%)
4.4	Methodology for economic valuation of climate services developed in collaboration with ACPC, targeting Africa-focused climate services investors (e.g., AfDB, USAID, DfID)	Methodology reports, journal paper, policy briefs.	USD 150 million new investments by state, national, regional and global agencies, informed by CCAFS science and engagement	400,000 / 1,300,000 (31%)	2,700,000 / 6,100,000 (44%)
4.5	Preliminary cost- benefit analysis of climate services available in SEA	Cost-benefit reports, guidance documents, policy briefs.			
4.6	Preliminary cost-benefit analyses of agricultural climate services in Africa provided to Africa-focused climate services investors (e.g., AfDB, USAID, DfID)	Cost-benefit reports, guidance documents, policy briefs.			
4.7	CARE in SEA and 3 Rwanda organizations (RAB agricultural extension, 2 NGOs) adapt climate services communication strategy and training to support participation of women farmers.	Project activity and M&E reports, training materials. Externally-review outcome case studies.	20 development organizations adapting their plans and directing investment to increase women's access to, and control over, productive assets and resources through gender-sensitive climate-based advisories and safety nets	560,000 / 1,260,000 (44%)	4,550,000 / 9,650,000 (47%)
4.8	Climate services and weather-related insurance are incorporated into training materials and workshops (led by FP1) to strengthen the capacity of national partners in targeting, priority setting, policy and investment decision making capacities and articulating national priorities in global fora.	Training materials, workshop reports and attendance lists, draft investment plans	15 policy decisions taken (in part) based on engagement and information dissemination by CCAFS	400,000 / 830,000 (48%)	2,700,000 / 7,200,000 (38%)
CCAFS FP4: Total				**3,960,000 / 9,890,000 (40%)**	**26,950,000 / 61,200,000 (44%)**

CCAFS Table 2: SLOs, IDOs and sub-IDOs with proposed indicators

(*) CCAFS-FPs and Sub-IDOs listed are extracted from the CCAFS PIM Table C (Full proposal)
(**) The proposed indicators are coming from an interim POWB proposed by CCAFS and based on the RBM section Annex 3.6 of the Full Proposal.

FP(*)	SLO	IDO	Sub-IDO (*)	Proposed draft indicators (**)	Targets for 2017
FP2	Reduced Poverty (SLO1)	Increased resilience of the poor to climate change and other shocks	Reduced production risk	Number of SHs receiving programmatic, financial, policy-related trainings for adopting CSA related practices and technologies (that potentially reduce production risks).	0.5 million
FP2 FP4		Enhanced smallholder market access	Improved access to financial and other services	Number of sub-national public and private initiatives providing access to novel financial services. Number of SHs with improved access to new financial capital.	2 1.3 million
FP3		Increased incomes and employment	More efficient use of inputs	Number of initiatives where CCAFS is used to target and implement interventions to increase input efficiency.	3
FP1	Improved Food and Nutrition Security for Health (SLO2)	Improved diets for poor and vulnerable people	Optimized consumption of diverse nutrient-rich foods	Number of organisations and institutions in selected countries/states adapting plans and directing investment to optimise consumption of diverse nutrient-rich foods, with all plans and investments examined for their gender implications.	2

FP3	Improved Natural Resources Systems and Ecosystems Services (SLO3)	Natural capital enhanced and protected, especially from climate change	Land, water and forest degradation minimized and reversed	Number of hectares targeted by research-informed initiatives for restoring degraded lands or preventing deforestation.	0.1 million
FP3		More sustainably managed agro-ecosystems	Reduced net greenhouse gas emissions from agriculture, forests and other forms of land use	Number of low-emission plans developed that have significant mitigation potential for 2022 (eg reach at least 10,000 SHs or contribute to at least 2-3% GHG emissions reduction).	1
FP1 FP2	Climate change (CC)	Mitigation and adaptation achieved	Improved forecasting of impacts of climate change and targeted technology development	Number of states, countries and regions where CCAFS priority setting used to target and implement interventions to improve food and nutrition security under a changing climate. Number of site-specific targeted CSA technologies/practices tested, with all options examined for their gender applications.	3 10
FP1 FP4	Climate change (CC)	Mitigation and adaptation achieved	Enabled environment for climate resilience	Number of new investments ($M USD) by state, national, regional and global agencies, informed by CCAFS science and engagement.	USD 75 million

FP1 FP2 FP4	Gender and youth (CC)	Equity and inclusion achieved	Gender-equitable control of productive assets and resources	Number of organisations and institutions in selected countries/states adapting their plans and directing investment to increase women's access to, and control over, productive assets and resources to improve food and nutritional security under climate change (including access to gender-sensitive climate-based advisories and insurance)	7
FP3	Gender and youth (CC)	Equity and inclusion achieved	Improved capacity of women and young people to participate in decision-making	Number of organisations adapting their plans or directing investments to increase women's participation in decision-making about LED in Agriculture.	4
FP1 FP2 FP3 FP4	Capacity development (CC)	National partners and beneficiaries enabled	Increased capacity for innovation in partner development organizations and in poor and vulnerable communities	Number of policy decisions taken based on engagement and information dissemination by CCAFS.	5
FP4	Climate change (CC)	Mitigation and adaptation achieved	Enhanced capacity to deal with climatic risks and extremes	Number of institutions or major initiatives that use CCAFS research outputs for services that support farm households' management of climatic risks.	8

FISH

FISH FP1: Sustainable Aquaculture

Milestone Description for 2017[13]		Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017 (Proposed W1-2 budget for 2017/ total)	6-year W1-2 / total (%)[14]
1.1	New generations of improved tilapia and rohu carp breeds produced in 3 countries [Bangladesh, Egypt, Malaysia]	Program reports, journal papers, data sets partner agreements	1.5 million households have access to and are using our selectively improved, faster growing and more resilient strains of tilapia and carp seed	200,632/ 660,461	6,754,100/ 23,290,000 (30%)
	Genetically improved tilapia breeds disseminated to fish farmers in 4 countries [Bangladesh, Egypt, Myanmar, India]			200,632/ 660,461	
	Genomic information obtained from core tilapia and carp breeding programs and used to inform research plans for 2018-onwards			200,632/ 660,461	
	Gender-integrated end user preference research review completed, framework and methods developed, and partnerships agreed for implementation			200,632/ 660,461	
	Impact assessments of improved tilapia strain dissemination completed in 2 countries [Bangladesh, Egypt] and results integrated into future breeding program research and dissemination planning			200,632/ 660,461	
1.2	Yield limiting diseases of improved tilapia strains assessed in 2 countries [Bangladesh and Egypt]	Program reports, journal papers, research plan	2.5 million households have adopted disease detection and control strategies, cost-effective and sustainable aqua-feeds and/or improved aquaculture management practices	250,790/ 825,577	6,754,100 / 23,290,000 (30%)
	Biosecurity measures designed and incorporated in tilapia breeding and dissemination programs in 4 countries [Bangladesh, Egypt, Myanmar, India].			250,790/ 825,577	
	Focal country assessments and cross-CRP dialogue (RICE, RTB) have identified priority ingredients for future novel aqua-feed research			250,790/ 825,577	
	Best practice guidelines for health and feed management packaged and disseminated via extension networks to fish farmers in 4 countries [Bangladesh, Egypt, Myanmar, India].			250,790/ 825,577	
1.3	Baseline assessments of GHG emissions and water and nutrient use efficiency in tilapia and carp farming completed and used to identify interventions in 3 countries [Bangladesh, Egypt, Myanmar]	Program reports, journal articles	4.8 million mt of annual farmed fish production with reduced environmental impact and increased resource-use efficiency (measured by 20% reduction in GHG emissions and 10% increase in water and nutrient-use efficiency)	167,193/ 383,191	1,125,200 / 3,880,000 (5%)
1.3	Multi-stakeholder partnership platforms for sustainable aquaculture R&D convened in 4 countries [Egypt, Nigeria, Bangladesh, Myanmar]	Program reports, platform meeting minutes, case studies, partner contacts from annual outcome review	2.3 million poor men, women and youth access improved livelihood opportunities resulting from increased aquaculture production and associated value chains and enterprise development	234,070/ 770,538	7,878,712 / 27,167,972 (35%)
	Mixed methods approach to and tools for quantitative and qualitative assessment of women and youth empowerment in fish agri-food systems developed and piloted and ready for application across FISH focal countries			234,070/ 770,538	
	Fish-supply demand modelling completed and used to inform future targeting of FISH aquaculture technologies in Africa. Results integrated into CRP FISH 2018 research plans.			234,070/ 770,538	
	Capacity development needs among research partners in key FISH countries identified and integrated into FISH capacity development plans			234,070/ 770,538	
	Impact assessments and cross-CRP dialogue (A4NH) have informed preparation of a research strategy for achieving human-nutrition related SLO outcomes in FISH.			234,070/ 770,538	

13 From FISH CRP Full Proposal, PIM Table D, with additional 2017 milestones formulated for alignment to each FISH outcome

14 From FISH Full Proposal PIM Table B: 'W1+W2(Amount)' / 'Amount Needed ($)'

FISH FP2: Resilient Small-Scale Fisheries

Milestone Description for 2017		Means of Verifying	For which 2022 outcomes	Budget 2017 (Proposed W1-2 budget for 2017 / total)[15]	6-year W1-2 / total (%)
2.1	Assessments completed on adaptive management research and livelihood outcomes in 4 countries [Bangladesh, Cambodia, Myanmar, Solomon Islands]	Synthesis reports, case studies, research papers, data on livelihood diversity and household income	1 million fishery-dependent households have reduced poverty as a result of adopting improved fisheries management	0/ 2,046,000	5,870,885 / 19,758,626 (33%)
2.2	Conceptual framework for fish in food systems developed and used to convene policy engagement, align investment in fisheries and re-invigorate global dialogue and strategies concerning the role of small-scale fisheries in poverty reduction	Program reports, research papers	1.2 million people, of which 50% are women, assisted to exit poverty through livelihood improvements	0/ 2,046,000	5,870,885 / 19,758,626 (33%)
2.3	National and sub-national partners in 4 countries [Bangladesh, Cambodia, Myanmar] better understand drivers of variability and land and water resource trade-offs in multi-functional landscapes, and recognize their policy and practical implications, with a particular focus on rice fish landscapes.	Documented outcomes of dialogues with partners and other stakeholders on findings and their implications	2.1 million hectares of aquatic and coastal marine habitat restored and under more productive and equitable management	0/ 2,046,000	5,870,885 / 19,758,626 (33%)

[15] FP2 budget for 2017 includes no W1-2 budget, but only W3/bilateral; expecting new decisions on W1-2 funding for FP2 research activities in 2018.

FISH: Governance, management and cross-cutting

Milestone Description for 2017[16]	**Means of Verifying**[1]	**For which 2022 outcomes**[1]	**Budget 2017 (Proposed W1-2 budget for 2017/ total)**	**6-year W1-2 / total (%)**[17]
Governance (ISC) and management functions established for leadership, coherence and transparent governance of FISHP	Program reports. Independent review reports	Supports overall achievement of all CRP FISH outcomes	1,100,000[18]/ 1,100,000	7,700,000/ 7,700,000
Cross-cutting CRP outcomes associated with gender, M&E and communications	Program reports. Independent review reports	Supports overall achievement of all CRP FISH outcomes	TBD[19]	TBD

16 From FISH CRP Full Proposal, PIM Table D, with additional 2017 milestones formulated for alignment to each FISH outcome

17 From FISH Full Proposal PIM Table B: 'W1+W2(Amount)' / 'Amount Needed ($)'

18 CRP FISH proposal, page 30

19 We flag the importance of cross-cutting investments, and welcome feedback on how to address these issues in the outcome/budget analysis.

FISH Table 2: FPs, SLOs, IDOs and sub-IDOs[20] with proposed indicators

SLO	IDO	Sub-IDO	Proposed draft indicators[21]	FP	Targets for 2017[22]
Reduced Poverty (SLO1)	1.3 Increased incomes and employment	1.3.1 Diversified enterprise opportunities	Number of micro, small and medium enterprises established and/or diversified in aquaculture and fisheries value chains as a result of FISH research	FP1 FP2	Establish baseline in focal countries and identify opportunities for enterprise/business interventions
		1.3.2 Increased livelihood opportunities	Increased income in women and men farmers and value chain actors (disaggregated by age and wealth group)	FP1 FP2	Farmers adopting improved strains increase income by >10% over non-adopters in 2-4 countries
		1.3.4 More efficient use of inputs	Improved feed conversion and water and nutrient use efficiency (kg fish produced per unit quantity of water, N and P used)	FP1	Water and/or nutrient efficiencies by farmer adopters increased by 5% over non-adopters in 2 countries (L&F sites in Egypt and Bangladesh)
	1.4/2.1 Increased productivity	1.4.2/2.1.2 Closed yield gaps through improved agronomic and animal husbandry practices	Productivity (kg/ha/year) improvements in target aquaculture systems from adoption of improved strains, technology packages and management practices resulting from FISH research	FP1	Productivity improvements of > 10% in 2 countries associated with improved tilapia strains. Performance assessment completed in 4 countries to determine baseline
		1.4.3/2.1.3 Enhanced genetic gain	Estimated breeding value gain per generation for target traits in tilapias and carp breeding programs (%)	FP1	5% genetic gain documented in tilapia and rohu breeding programs in Malaysia and Egypt (tilapia) and Bangladesh (rohu)
Improved Food and Nutrition Security for Health (SLO2)	2.2 Improved diets for poor and vulnerable people	2.2.2 Increased access to diversified nutrient-rich foods	Increase in women's average fish consumption per day and minimum dietary diversity score among women and children	FP1 FP2	Increase in fish consumption by 10% among women and children at research sites in 2 focal countries. Dietary diversity targets to be developed during 2017.
	2.4 Improved human and animal health through better agricultural practices	2.4.2 Reduced livestock and fish disease risks associated with intensification and climate change	Percent reduction in fish disease prevalence in target aquaculture systems associated with improved breeds and FISH technologies	FP1	No targets for 2017. Focus is on defining baselines of fish disease status in key focal countries

20 From FISH proposal Table 2 (page 10) and PIM Table's C

21 From the RBM section Annex 3.6 of the Full Proposal (Table 1 and Table 2)

22 Targets and proposed contribution to target by [flagship x sub-IDO] defined by flagship leaders

Improved Natural Resources Systems and Ecosystems Services (SLO3)	3.2 Enhanced benefits from ecosystem goods and services	3.2.1 More productive and equitable management of natural resources	Percent increase in yield from better fisheries management practices as a result of FISH research	FP2	None for 2017
	3.3 More sustainably managed agroecosystems	3.3.1 Increased resilience of agro-ecosystems and communities, especially those including smallholders	Number of hectares of aquatic and coastal marine habitat restored and under more productive and equitable management as a result of FISH research	FP1 FP2	None for 2017
		3.3.3 Reduced net greenhouse gas emissions from agriculture, forests and other forms of land use	Green-house gas emissions per kg fish produced in target aquaculture systems	FP1	Focus is on defining baselines and intervention points for future improvements
Cross Cutting:	Climate change	XC 1.1.4 Enhanced capacity to deal with climatic risks and extremes	Number of households with increased capacity to deal with climate risks and extremes	FP1 FP2	Focus is on developing indicators and methodologies for assessing future improvements
	Gender and youth	XC 2.1.1 Gender-equitable control of productive assets and resources	Number of women with increased control of productive assets and resources (disaggregated by age and wealth)	FP1 FP2	No targets for 2017. Focus is on developing indicators and methodologies for assessing future improvements
		XC 2.1.3 Improved capacity of women and young people to participate in decision-making	Number of women and young people with increased influence in aquaculture and small-scale fisheries-related decision making (disaggregated by age and wealth)	FP1 FP2	No targets for 2017. Focus is on developing indicators and methodologies for assessing future improvements
	Policies and institutions	XC 3.1.1 Increased capacity of beneficiaries to adopt research outputs[23]	Number of innovation platforms, learning alliances and other multi-stakeholder platforms operating with FISH engagement	FP1 FP2	Innovation platforms for aquaculture research established in Bangladesh, Egypt, Myanmar and Nigeria
		XC 3.1.3 Conducive agricultural policy environment	$ investment that incorporates FISH research (through public policy, development agencies, private sector)	FP1 FP2	US$50 million of development investments informed by CRP Phase 1 fish-related research
		XC 4.1.2 Enhanced capacity in partner research organizations through training and exchange	Number of research partner staff trained (disaggregated by age and wealth; gender, job/role, location and literacy)	FP1 FP2	Capacity assessments of FP1 research partners completed

23 Indicators for XC 3.1.1 and XC 3.1.3 were not included in the proposal; new indicators have been incorporated for 2017

FTA (Forest, Trees and Agroforestry)

FTA FP1: Tree Genetic Resources for production and resilience in 2017

Milestone Description for 2017[24]		Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 / total (%)[25]
1.1	Best methodologies/indicators, maps, decision-support tools and case studies for supporting e.g., option values for prioritization, reward systems, guidelines and policy briefs assisting regional and national action- plans developed for safeguarding and availability of products and ecosystem services. Databases of seed sources, species, conservation units, genotypic and phenotypic characteristics, functional traits updated.	Progress reports and other wise implied by nature of milestone	Managers and policy makers adopt effective monitoring methods, tools and practices to mitigate threats to valuable tree genetic resources, and implement suitable safeguarding strategies in line with international initiatives, such as the Global Plan of Action for Forest Genetic Resources and the Global Strategy on Conservation and Use of Cacao Genetic Resources	615,600/3,890,412	4,149,333/25,933,333 (16%)
1.2	Participatory and multi-sectorial alliances setup for two countries with relevant ABS and IP policies for mobilization of TGR with co-development of best tools/approaches, business models, design and construction of tool kit (web portal) and concurrent upstream genomic applications for prioritized tree domestication.. Databases developed of country priorities, best practices, performance info from provenance trials, domesticated products (transient and developed clones), performance, and distribution, updated routinely.	Progress reports and other wise implied by nature of milestone	Agricultural and horticultural research partners adopt cost-effective domestication approaches for priority tree species, based on impacts and maximising efficiency, and considering tradoffs involved in intensification	615,600/3,890,412	4,149,333/25,933,333 (16%)
1.3	With supporting policy guidelines, advocacy materials and gender sensitive decision support tools, multi-sectorial (involvement of private, public and CGIAR) delivery system models and standards developed and concepts applied for different tree planting material types (seed, seedlings, cuttings, etc.) and nurseries for trees of different functional uses (timber, food etc. species) initiated in at least 4 countries and in varying agro-ecologies (sentinel landscapes if relevant)for both livelihoods and landscape restoration; in East Africa (VECEA); business plans developed taking delivery systems into consideration for 5 AOCC tree species while options for generic genetic indicators and their needs and performance put into place.	Progress reports and other wise implied by nature of milestone	National governments, extension services and private partners adopt cost-effective and equitable tree planting material delivery pipelines, with appropriate decision-support tools, to supply high quality site-appropriate tree planting material to smallholders and other growers	615,600/3,890,412	4,149,334/25,933,333 (16%)

[24] From FTA Full Proposal Table D
[25] From FTA Full Proposal Table B

FTA FP2: Enhancing trees and forest contribution to smallholder livelihoods in 2017

Milestone Description for 2017[1]		Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 / total (%)[2]
2.1	Comparative analysis of local knowledge, gender roles and policy options across at least three countries and regions	Journal articles, comparative datasets and knowledge bases mounted on dataverse	improved food security and livelihood opportunities for 100 million people in smallholder households and more productive and equitable management of natural resources over an area of at least 50 million ha. This outcome integrates some outputs from other research clusters through their scaling.	461,700/4,174,719	3,264,000/27,200,000 (12%)
2.2	Analysis of barriers to people benefiting from tree resources across at least six countries and three regions	Journal articles	improved livelihood opportunities involving timber, fruit and NTFPs contributing a 25% increase in income for over 5 million people and more equitable management of natural resources including a 25% increase in women's participation in decisions involving tree and forest management and utilization and improvement in substantive representation of women in community forest management institutions	276,681/2,501,762	1,956,000/16,300,000 (12%)
2.3	Options by context matrices for diversified cocoa and oilpalm production practices in Peru and Brazil	Matrices mounted on dataverse, journal articles.	diversified tree-crop production systems covering 5 million ha and improving diets and livelihood opportunities for 20 million people in smallholder producer households	370,039/3,345,914	2,616,000/21,800,000 (12%)
2.4	Globally calibrated tree-crop interaction models that can reliably predict impacts of tree cover change on yields of at least three staple crops	Journal articles	increased access to diverse, nutrient rich food for 20 million people through closing yield gaps by trees in agricultural systems improving and maintaining soil health as well as intensifying system interactions (fodder and firewood) and directly contributing to production, reducing and reversing land degradation and increasing the resilience of smallholder livelihoods	461,700/4,174,719	3,264,000/27,200,000 (12%)
2.5	Global systematic review of relationships between tree cover and pasture and animal productivity	Review record on CEE (Collaboration for Environment Evidence) internet library.	closing yield gaps through improved pasture management and animal husbandry on over 15 million ha and 1 million animals and contributes to reducing and reversing land degradation on over 5 million ha	276,681/2,501,762	1,956,000 /16,300,000 (12%)

FTA FP3- Sustainable global value chains and investments in 2017

Milestone Description for 2017[1]		Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 / total (%)[2]
3.1	Key stakeholders are engaged in an impact assessment of voluntary standard systems and private commitments to sustainability for select commodities in at least three major producer countries	Minutes from meetings with stakeholders / published analytical framework for the assessment of voluntary system standards / blog on the potential and opportunities of voluntary system standards	Public and private actors adopt effective governance arrangements, mechanisms and tools for ensuring sustainable and inclusive commodity supply in at least 3 major producer countries	734,270 /4,920,217	4,950,000/33,000,000 (15%)
3.2	Data collection and analysis of costs and performance of business models across at least four sectors involving major high-value tree crops, and disseminated outcomes in five business platforms with key recommendations for improving practices	Paper on the socio-environmental performance of business models across three select high-value tree crop sectors / infobrief and blog with a summary of main research findings / meeting with representatives of private sector associations / presentations in conferences and business platforms	5 business platforms and 20 businesses and service providers develop and implement business models that are more inclusive, economically viable and environmentally sustainable	578,516 / 3,876,535	3,900,000/26,000,000 (15%)
3.3	Completed analysis of innovative financial mechanisms in support to expanding access to finance to smallholders and SMEs in timber and tree-crop value chains	Paper comparing potential of innovative financial mechanisms to support smallholders and SMEs / infobrief and blog with summary of main research findings / minutes and proceeding of participation in specialized conferences	At least 30% of financial service providers lending to timber, tree and agricultural crops adopt ESG criteria, and increase in 25% the lending to models that integrate smallholders and SMEs	534,014/ 3,578,340	3,600,000/24,000,000 (15%)

FTA FP4: Landscape Dynamics, productivity and resilience in 2017

	Milestone Description for 2017[1]	Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 / total (%)[2]
4.1	Identified similarities at tier 1 and 2 level connected to 10 tier-3 sentinel landscape data sets , used as basis for planned impact studies of interventions across all FTA FP's, and linked with the SDG perfor-mance planning and monitoring in at least 10 countries. Decision support tools for selection of approaches (natural regeneration or planting), species and seed sources for sustainable restoration of forests adopted within three countries to meet their Bonn Challenge pledges.	Website availability of spatially explicit open-access data sets on conditions and trends of forest and tree cover change linked to liveli-hood opportunities 2) Development plans of local governments and sup-porting agencies tht utilize FTA results 3) Process studies docu-menting and critically analyzing degrees of participation (incl. gender and youth representatives) in planning processes	(Sub)national governance systems in at least 10 countries use contextualized theories of change to guide transitions to integral achievement of sustainable development goals through restoration, conservation and management of landscape multi-functionality, using similarity domains based on patterns and intensities of forest and tree cover change in space and time in sentinel landscapes understood on the basis of 'drivers' that operate at larger scales.	369,040/3,569,620	2,541,000/23,100,000 (11%)
4.2	Assessment of effects of tree cover change on rainfall patterns and variability at continental scales, combining global circulation models with qualified tree cover data, quantified water balance data, dendrochronological evidence of past change and vulnerability of livelihoods	Website availability of studies, process-level and spatially calibrated heuristic models on FT&A ecosystem services at multiple scales 2) Reference to FTA results in global synthesis documents such as IPBES and IPCC	(Sub)national governance systems in landscapes covering 100 M ha and inhabited by 70 M people use quantified and valued functions of FT&A for biodiversity, full hydrological cycle and ecosystem services analyzed across knowledge domains and available for policy-•level synthesis and planning.	554,360/5,362,157	3,817,000/34,700,000 (11%)
4.3	Stock taking of statistical data sets that link dietary diversity to species-level and genetic diversity of agricutural and associated landscapes and process-level models that interpret this in terms of availability, access and behavioural patterns, setting priorities for further work by FTA and partners	National SDG statistics at subnational scale for countries targeted by FTA, with explicit comparators/counterfactuals 2) Website availability of reports, typologies, databases and diagnostic tools, and documented evidence of their use 3) Recognition in high-level policy documents of the relevance of landscape diversity for balanced nutrition (against a baseline of virtual zero before 2015)	Diverse diets from tree cover in mosaic landscapes recognized and enhanced as contributions to balanced diets through Increase of availability, and access to, nutrient-•rich wild and cultivated food products from these landscapes (10 sentinel landscapes 10 M people)	369,040/3,569,620	2,541,000/34,700,000 (11%)
4.4	Exchange of lessons learned across the various learning landscapes associated with FTA, including a further review of existing typologies of 'payment for watershed services' settings and as basis for new action research efforts.	Website availability of objectives, context and evolving lessons in the various learning landscape networks 2) Publicly available synthesis documents and impact studies 3) Documented use of the typologies that emerge from the learning landscape networks	Adaptive landscape institutions empowered and supported on 6 M ha inhabited by 4 M people to manage changing landscape mosaics towards more balanced and adaptive multifunctionality and successful 'forest landscape restoration' through 'action research' and inclusive, participatory learning. This is aligned with efforts in PIM.5.2 -oe6 million hectares of shared landscapes under more productive and equitable management.	554,360/5,362,157	3,817,000/34,700,000 (11%)

FTA FP5: Climate change mitigation/adaptation opportunities in forests & agroforestry in 2017

Milestone Description for 2017[1]		Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 / total (%)[2]
5.1	Comparative analysis of best, 3E+ options for policies and practices for emission reduction concluded and applied by decision makers	scientific publications and policy briefs (FTA and CG center websites) book on the topic national reports and strategy documents, e.g. for REDD+	Efficient, effective and equitable climate national and international mitigation policies and funding, aligned with development objectives (3E+ goals)	941,590/6,560,798	6,600,000/44,000,000 (15%)
5.2	Concluding analysis of synergies/trade-offs between mitigation and adaptation published and applied, e.g. in the JMA debate	scientific publications and policy briefs (FTA and CG center websites) UNFCCC documents on Joint Mitigation Adaptation	Risk-assessed ecosystem-based adaptation (EbA) policy and practice in place including joint mitigation and adaptation approaches	461,807/3,217,773	3,237,000/21,580,000 (15%)
5.3	Analysis of current status of bioenergy types concluded and used by country agencies and international agencies developing bioenergy policies	scientific publications and policy briefs (FTA and CG center websites) country reports, GIZ reports on bioenergy and woodfuel	Integrated food and bioenergy production policy and practice realized	221,702/1,544,770	1,554,000/10,360,000 (15%)
5.4	Reference levels determined for a variety of situations and land uses and applied by countries	scientific publications and policy briefs (FTA and CG center websites) IPCC reports, national reports on RLs	Performance assessment of mitigation and adaptation policy and practice widely implemented	221,702/1,544,770	1,554,000/10,360,000 (15%)

FTA Table 2

FP(*)	Proposed draft indicators (**)	Targets for 2017 (***)	IDOs	SLOs
FP1	Number of FP1 delivery pipeline models for tree-planting material that support different users (including for landscape restoration) in target countries	FP1 Models in at least 5 countries	Increased incomes and employment	Reduced Poverty SLO 1
FP1	Number of community-based and entrepreneurial production and delivery enterprises e.g. seed orchards, rural resources centers, private tree nurseries, etc. established in target countries.	One seed orchard for one timber species in Columbia; one for Brazil nut in Peru; Plant production material stands for three fruit tree species in Ethiopia	Increased productivity	Reduced Poverty SLO 1
FP1	Case studies on the utility/limitations of access and benefit sharing (ABS) in supporting the characterization of tree genetic resources and in safeguarding activities Public-private consortia engaged in tree domestication	Design of global comparison in place. Solid, committed multi-sectoral alliances around different tree products formed in 5 countries, committed to co-development and implementation of cost effective decision support and practical tools and approaches to tree domestication.	Increased productivity, Natural capital enhanced and protected, especially from climate change, Enhanced benefits from ecosystem goods and services	Reduced Poverty (SLO1), Improved Natural Resources Systems and Ecosystems Services (SLO3)
FP1	Genetic resources mobilized through the genotyping of appropriately assembled germplasm collections, combined with public databases	Genotyping on current material of at least an additional 5 species. Models for enhanced application of genomic information on agroforestry trees developed and applied on at least 2 species in 1 country	Improved diets for poor and vulnerable people	Improved Food and Nutrition Security for Health (SLO2)
FP1	Nationally and regionally endorsed actions plans and networks for TGR safeguarding Quality standards developed and promoted to actors in the germplasm production and delivery sector. User-friendly decision-support tools to inform planting choices where relevant in conjunction with market information services.	FORGEN networks strengthened, recognized within member countries and by regional bodies Generic models for different types of planting material and species for seed, for seedlings, for nurseries; for different functional uses and different types of plantings Subsets of existing indicators chosen in regions	Enhanced benefits from ecosystem goods and services, Natural capital enhanced and protected, especially from climate change	Improved Natural Resources Systems and Ecosystems Services (SLO3)
FP1	Dynamic (producer- and consumer-sensitive) lists of priority tree species for domestication, with key traits for production, including those that support positive agroecosystem interactions, identified.	Baseline of current priorities and domestication approaches identified and analysed. Domestication business models developed for at least 5 additional species	Enhanced benefits from ecosystem goods and services	Improved Natural Resources Systems and Ecosystems Services (SLO3)
FP1	User-friendly decision-support tools to inform planting choices where relevant in conjunction with market information services. Effective and affordable methods and decision-support tools, including status and threat assessment maps and appropriate option value methods for the prioritization of safeguarding actions, which consider TGR availability and the value of genetic diversity for products and ecosystem services	FP1 Tools developed for restoration of dry tropical forest in Columbia; For East Africa); business plans for 5 AOCC tree species FP1 Tools, maps and methods developed and published for cases in Burkina Faso and Central Asia	. Mitigation and adaptation achieved	Climate change (CC)

FP1	Gender-responsive guidelines, and decision-support and practical tools, for tree domestication	Evidence based tool kit (web portal) on tree genetic resources designed and actors are participating in the construction	Equity and Inclusion Achieved	Gender and youth (CC)
FP1	FP1 Policy briefs, reward systems, strategies and guidelines for appropriate targeting and safeguarding of TGR in various political, socioeconomic and environmental contexts, at different scales, and based on the biology of the species concerned	FP1 Study of existing reward systems	C. Enabling Environment improved,	Policies and Institutions (CC)
FP2	Number of households who have adopted forestry and agroforestry innovations National and sub-national policy change to incorporate FTA innovations	3 million households adopting innovations across our global reach. x national and sub-national policies are altered to reflect FTA innovations	Increased incomes and employment	Reduced Poverty SLO 1
FP2	Proportional increase in value chain income[1], for households using or benefiting from FTA innovations and policy recommendations	increase of 20% across 10 thousand households.	Increased incomes and employment	Reduced Poverty SLO 1
FP2	Proportional increase in food availability and dietary diversity enabled in part through adoption of FTA innovations	10% increase in food availability (calories) and a 5% increase in dietary diversity across 25 thousand households over our global reach.	Improved diets for poor and vulnerable people	Improved Food and Nutrition Security for Health (SLO2)
FP2	Percent reduction in heat stress over a number of animals.	20% reduction in heat stress over 1 million cattle	Improved human and animal health through better agricultural practices, Enhanced benefits from ecosystem goods and services	Improved Food and Nutrition Security for Health (SLO2), Improved Natural Resources Systems and Ecosystems Services (SLO3)
FP2	Number of hectares avoided degradation and restored crop land and pasture enabled by FTA technology, market and policy innovations	1 million ha in total (avoided, restored, cropland and pasture).	3.1 Natural capital enhanced and protected, especially from climate change	Improved Natural Resources Systems and Ecosystems Services (SLO3)
FP2	Soil carbon levels in areas where forest cover has changed as a result of adoptions of FTA innovations	Soil C maintained above threshold level for resilience over 1 million ha.	3.2 Enhanced benefits from ecosystem goods and services	Improved Natural Resources Systems and Ecosystems Services (SLO3)
FP2	Improved ability to monitor the relationship between the extent and diversity of tree cover on livelihood and landscape resilience	RATA framework adapted for use to track contributions of FP2 to resilience	3.3 More sustainably managed agro-ecosystems	Improved Natural Resources Systems and Ecosystems Services (SLO3)
FP3	Number of financial service providers and platforms engaged lending to timber, tree and agricultural crops which adopt ESG criteria, that increase the amount of lending to models that integrate smallholders and SMEs (PIM Table B - CoA 3.3)	Engaged 4 financial service providers, and platforms lending to smallholders and SMEs in 3 sectors	Enhanced smallholder market access; Increased incomes and employment	Reduced Poverty SLO 1
FP3	Number of supported governance arrangements, mechanisms and tools involving public and private actors for ensuring sustainable, inclusive, equitable commodity supply in at least three countries (PIM Table B - CoA 3.1)	Supported 3 governance mechanism involving public-private actors supporting sustainable supply	Enhanced smallholder market access; Increased incomes and employment	Reduced Poverty SLO 1

FP3	Number of business platforms and businesses and service providers that develop and implement business models that are more inclusive, economically viable and environmentally sustainable (PIM Table B - CoA 3.2)	5 business platforms and businesses and service providers develop more inclusive business models	Enhanced smallholder market access; Increased incomes and employment	Reduced Poverty SLO 1
FP3	Number of public and private actors adopt effective governance arrangements, mechanisms and tools for ensuring sustainable, inclusive, equitable commodity supply in at least three countries (PIM Table B - CoA 3.1)	Supported 3 governance mechanism involving public-private actors supporting sustainable supply	Enhanced smallholder market access; Increased incomes and employment	Reduced Poverty SLO 1
FP3	Options of business models adopt a gender explicit approach considering equal opportunities for men and women)		B. Equity and Inclusion Achieved	Gender and youth (CC)
FP4	Adaptive landscape institutions empowered and supported on 6 M ha inhabited by 4 M people to manage changing landscape mosaics towards more balanced and adaptive multifunctionality and successful 'forest landscape restoration' through 'action research' and inclusive, participatory learning. This is aligned with efforts in PIM.5.2 -oe6 million hectares of shared landscapes under more productive and equitable management-(PIM Table B - CoA 4.4)	Synthesis on landscape governance and payments for ecosystem services used in 'landscape academy' efforts in >5 countries, translation to curricula for training of a new generation of leadership. Clarity on metrics for water security at landscape scale helps resolve productivity + conservation approaches. Learning landscape networks used for gender sensitive and youth-oriented capacity development for improved leadership and governance. Specific efforts on 'restoration' in three continents supported and compared.	Increased productivity; B. Equity and Inclusion Achieved	Reduced Poverty (SLO1); Gender and youth (CC); Capacity development (CC)
FP4	Diverse diets from tree cover in mosaic landscapes recognized and enhanced as contributions to balanced diets through Increase of availability, and access to, nutrient-rich wild and cultivated food products from these landscapes (10 sentinel landscapes 10 M people) -(PIM Table B - CoA 4.3)	Global synthesis report on the way forests and trees relate to food security, with diagnostic methods to identify priority interventions mainstreamed with development organizations and local governments	Improved diets for poor and vulnerable people	Improved Food and Nutrition Security for Health (SLO2)
FP4	(Sub)national governance systems in landscapes covering 100 M ha and inhabited by 70 M people use quantified and valued functions of FT&A for biodiversity, full hydrological cycle and ecosystem services analyzed across knowledge domains and available for policy level synthesis and planning. (PIM Table B - CoA 4.2)	Extrapolation (similarity) domains for the sentinel landscapes clarified and findings from Phase I characterization shared. Governance aspects compared (in PIM context) to those of other natural resource management issues, with specific policy relevance identified. Ecosystem Services Partnership and IPBES supported in Africa and Asia.	Improved human and animal health through better agricultural practices; More sustainably managed agro-ecosystems	Improved Food and Nutrition Security for Health (SLO2); Improved Natural Resources Systems and Ecosystems Services (SLO3)
FP5	Risk-assessed ecosystem-based adaptation (EbA) policy and practice in place in target countries including joint mitigation and adaptation approaches (PIM Table B - CoA 5.2)	Framework for assessing progress towards and quality of EbA policy and practices developed	3.3 More sustainably managed agro-ecosystems	Improved Natural Resources Systems and Ecosystems Services (SLO3)
FP5	Performance assessment of mitigation and adaptation policy and practice widely implemented (PIM Table B - CoA 5.4)	Stakeholders engaged in preparation for national assessments in 4 countries	3.3 More sustainably managed agro-ecosystems	Improved Natural Resources Systems and Ecosystems Services (SLO3)

FP5	Efficient, effective and equitable climate national and international mitigation policies and funding, aligned with development objectives (3E+ goals) (PIM Table B - CoA 5.1)	50 % of actors involved in 3 training and 8 knowledge sharing events report (1) having learned skills, methods and tools, (2) having internalized the value of **e**fficient, **e**ffective and **e**quitable (3E) REDD+, and having understood how evidence can support 3E decision making	3.3 More sustainably managed agro-ecosystems	Improved Natural Resources Systems and Ecosystems Services (SLO3)
FP5	Contribution to scientific knowledge relating to REDD+, forests, agriculture, mitigation, adaptation, the emissions potential of global restoration efforts	Two papers on mitigation hotspots published; Report on restoration sink potential concluded; Report on link of REDD finance to outcomes concluded; Agriculture paper early 2018	A. Mitigation and adaptation achieved	Climate change (CC)

LIVESTOCK

LIVESTOCK – 2017 MILESTONES

- *2022 Outcomes taken from Flagship Narratives – defined at Cluster of Activity level (not PIM B as this had already mapped to sub-IDO development-level outcomes)*
- *Some Clusters of Activities have multiple 2022 outcomes and 2017 milestones. Since detailed planning and budgets are still in process, approximate shares of the budget (by Cluster) have been allocated to each outcome / milestone.*

LIVESTOCK FP1: LIVESTOCK Genetics – Milestones for 2017

	Milestone Description for 2017	Means of Verifying	For which 2022 outcome	Milestone budget 2017 W1-2/total $ (%)	6-year outcome budget W1-2/total $ (%)
1.1	New datasets integrating phenotypes, genotypes and agro-ecosystems (including suitability maps small ruminants Ethiopia, genetic diversity & structure of Sudan Desert Goat) in DAGRIS & trained national partners on data collation; Additional biorepository samples (poultry - Tanzania, Ethiopia, Nigeria; SSA cattle; cross-bred dairy cattle Tanzania & Ethiopia) and genome sequencing analysis (poultry - Tanzania, Ethiopia, Nigeria; indigenous African cattle; cross-bred dairy cattle - SNP); Livestock systems characterised - dairy in Tanzania & Ethiopia, poultry in Ethiopia, Tanzania & Nigeria (incl. gender analysis), pastoral production systems in arid/semi-arid Kenya and ex-ante assessment of pastoral breeding programs in Ethiopia & Sudan.	DAGRIS reports; maps; training records; Biorepository records; global genome sequencing database records; journal articles; survey datasets	Data on livestock diversity and systems, including from a gendered lens, used to develop or refine genetic improvement and / or conservation strategies by policymakers, national research and development partners, and the private sector, in 5 CRP priority countries and other locations.	1,144,613 / 4,155,794 (28%)	7,792,997 / 28,294,351 (28%)
2.1	Development of breeding schemes (upscaling of community-based breeding programs - CBBP for pastoral production systems) & support to implementation (ICAR breeding program in India on dairy buffalo)	Publications; partner reports	Genetic improvement strategies for improved livestock genetics implemented by national research and development partners, and the private sector in 6 CRP priority countries and other locations.	460,419 / 808,022 (57%)	3,134,717 / 5,501,345 (57%)
2.2	Phenotypic and genotypic records of livestock populations (chicken, sheep, pigs & buffalo adaptation and disease resistance Africa & Asia; structure & diversity of Ethiopian goat; ASF resistance of African & Chinese pigs; heat tolerance in Sudanese Desert sheep; parasite resistance in Tunisian sheep; productivity in calves in Kenya; between & within breed diversity through Class MHC Typing)	Databases; publications		613,891 / 1,212,033 (51%)	4,179,622 / 8,252,018 (51%)
2.3	Development of a phenotypic platform - mobile recording system for CBBP, selective breeding & productivity monitoring using ICT tools, telomere as biomarker for adaptation to climate change, infrared spectra as indirect measure of dairy cattle performance; Optimised open-data kit (ODK) systems for phenotypic traits and production systems characterisation for poultry, dairy and cross-bred cattle; Development of protocols for genome editing and ex-situ conservation (AI packages in goats, field-testing bull semen viability, development of transgenic trypanosomiasis resistant cow, BecA genome editing platform)	Databases and their records; Platforms and their records		460,419 / 2,020,055 (23%)	3,134,717 / 13,753,363 (23%)
3.1	Assessment of institutional arrangements for delivery of improved genetics; Guidelines on delivery options for improved dairy cattle; proposal developed for phase 2 breeding programs and dissemination including draft business models	Reports & publications; Approved project	Business models for multiplication and delivery of improved livestock genetics, to resource poor women and men livestock keepers, implemented by national research and development partners, and the private sector in five CRP priority countries and other locations.	475,597 / 1,341,721 (35%)	3,238,062 / 9,134,985 (35%)

3.2	All other milestones contribute to this	N/A	Women and men resource poor livestock keepers sustainably utilising improved livestock genetics, both productive and adapted, in 3 priority countries and other locations.	N/A	N/A
4.1	Published information on best practices and lessons on AnGR improvement in Africa; national breeding strategies in Ethiopia; guidelines on institutional arrangements for certification of improved rams/bucks from CBBPs; Pig breeding in Assam, India supported - in terms of policy formulation	Reports & publications; partner reports (Ethiopia, India)	Guidelines on policy and institutional arrangements for improvement and conservation of animal genetic resources (AnGR) adopted by policymakers, national research and development partners, and the private sector, in 7 priority countries and other locations	638,786 / 1,011,822 (63%)	4,349,119 / 6,888,900 (63%)

LIVESTOCK FP2: LIVESTOCK Health – Milestones for 2017

	Milestone Description for 2017	Means of Verifying	For which 2022 outcome	Milestone budget 2017 W1-2/total $ (%)	6-year outcome budget W1-2/total $ (%)
1.1	Framework to quantify gendered animal disease impacts at national and regional level developed and available	Published framework (including detailed analytical protocol)	Assessment tools for significance of animal diseases and risk maps for emergence of animal diseases are used by 100 local and national and 50 international research partners and donors to prioritise research and development interventions to reduce livestock disease risks for livestock keepers.	408,924 / 556,842 (73%)	2,784,123 / 3,791,207 (73%)
2.1	Evaluation of current herd health issues (biosecurity, reproductive management, feed & genetic limitations, anti-microbial use) for dairy, pig and small ruminant systems in Uganda, Tanzania and Ethiopia, respectively. Results used to identify appropriate indicators (production & social - gender, age, livelihoods) for evaluating herd health packages in CRP priority countries	Country reports; Indicators - with guidance published	Context specific herd health management packages adopted by farmers, extension and animal health workers in priority countries and other locations.	621,139 / 1,510,563 (41%)	4,228,968 / 10,284,530 (41%)
2.2	Key constraints, gaps and misconceptions of anti-microbial and anti-parasitic drug usage identified in 2 CRP priority countries	KAP protocols and preliminary reports for each country	Livestock keepers have necessary knowledge of AMR and anti-parasitic resistance (APR) to change their practices accordingly, piloted in two priority countries.	266,203 / 1,007,042 (26%)	1,812,415 / 6,856,354 (26%)
3.1	ECF - ITM vaccine release by partner (CTTBD, Malawi), PPR vaccine production by partner (CVL, Mali)	ECF - Sales records, delivery models; PPR - Test results	National and international research partners, government agencies and the private sector use 2 novel diagnostic assays and vaccines for control of ASF, CBPP, CCPP, ECF and PPR in at least 6 priority countries.	235,701 / 1,246,706 (19%)	1,604,749 / 8,488,081 (19%)
3.2	New data - ECF subunit vaccine development & ASF vaccine antigens; Proof of concept vaccine efficacy (CBPP, CCPP); 2nd gen lateral flow test (CBPP)	Tests results, Publications & reports		2,121,309 / 2,908,979 (73%)	14,442,737 / 19,805,522 (73%)
4.1	Animal health products (vaccines, diagnostics, drugs) and services for the key health problems in three CRP priority countries (Ethiopia, Vietnam, Uganda) documented and gaps, constraints and capacity development needs identified and review made available	Published review(s)	Improved access to livestock-related health services and products for female and male livestock keepers in 4 priority countries	265,150 / 740,054 (36%)	1,805,252 / 5,038,593 (36%)

LIVESTOCK FP3: LIVESTOCK Feeds & Forages – Milestones for 2017

Note FP3 assumes no W1/2 funding for whole CRP; but includes the W1/2 in the Totals (denominator)

Milestone Description for 2017		Means of Verifying	For which 2022 outcome	Milestone budget 2017 W1-2/total $ (%)	6-year outcome budget W1-2/total $ (%)
1.1	Research and development partners, decision makers and input suppliers use at least 2 tools for regional and national feed supply and demand scenarios in 2 priority countries (Vietnam, Ethiopia)	Reports; 3 issues of online journal published; user and download statistics for online journal	Local, national and international research and development partners, the private sector, decision-makers and livestock producers are able to diagnose feed constraints and opportunities and to effectively prioritize and target feed and forage interventions, resulting in: a 10% improvement in utilization of feeds and forages, a 20% increase in animal production using improved feed and forage technologies, a 10% accuracy increase for biomass and quality estimation and at least 250,000 annual visitors to global databases, repositories, interactive tools and maps and the Tropical Grasslands—Forrajes Tropicales journal website.	0 / 633,523 (0%)	1,232,082 / 5,545,362 (22%)
1.2	New equations for stationary and mobile NIRS integrated into platform for Colombia and Ethiopia.	Updated platform	Capacity development of research and development partners and service providers (private sector) are using up-to-date technology which is cost effective (accuracy and rapidity)	0 / 158,380 (0%)	308,020 / 1,386,340 (22%)
2.1	New cohort of promising Urochloa hybrids defined for later use in breeding activities. New crosses of breeding lines available for further research and already available forage hybrids scaled with private sector partner in at least 15 countries on 100,000 hectares	Reports made available; Seed sales statistics from private sector partner. New crosses of breeding lines.	National and international research and development partners and the private sector are using CRP developed forage and rangeland resources (with enhanced traits), in 30 countries and reaching producers who plant over 2 million ha, to increase the rate of genetic gain and exploit the genetic diversity of forages and rangeland species to enhance stress-tolerance, biomass productivity and nutritive value.	0 / 417,245 (0%)	2,915,732 / 5,756,513 (51%)
2.2	1) Concept to improve phenotyping efficiency available internally for further breeding activities at a global scale. 2) Collection of P.purpureum genotyped in Ethiopia	Reports made available; Seed sales statistics from private sector partner. New crosses of breeding lines.	National and international research and development partners and the private sector are using CRP developed forage and rangeland resources (with enhanced traits), in 30 countries and reaching producers who plant over 2 million ha, to increase the rate of genetic gain and exploit the genetic diversity of forages and rangeland species to enhance stress-tolerance, biomass productivity and nutritive value.	0 / 417,245 (0%)	2,915,733 / 5,756,513 (51%)
2.3	Representative collections of Cactae, Brachiaria and Panicum maximum characterized for release in North & East Africa and Colombia	Reports made available on the Identification, characterization, and promotion of 3 to 5 key well adapted forage/rangeland species for diverse agro-ecosystems	National and international research and development partners and the private sector are using CRP developed forage and rangeland resources (with enhanced traits), in 30 countries and reaching producers who plant over 2 million ha, to increase the rate of genetic gain and exploit the genetic diversity of forages and rangeland species to enhance stress-tolerance, biomass productivity and nutritive value.	0 / 417,246 (0%)	2,915,733 / 5,756,513 (51%)
2.4	Potential cultivars of maize, rice, wheat, cowpea and barley identified for further breeding activities	Reports made available form testing selected breeding lines from farmers.	New forage and crop cultivars, superior to local (based on food, feed and fodder traits weighted according to target domains), made available by development partners, government agencies and the private sector and applied by farmers in 7 priority counties and other locations.	0 / 417,246 (0%)	2,915,733 / 5,756,513 (51%)
3.1	Draft tool for estimating increased productivity and reduced feed and labour costs developed for India and Tunisia	Draft Tool	Better utilization of existing and novel feed and forage resources through: scalable and gender-responsive processing technologies, management strategies to conserve and rehabilitate rangelands while producing, preserving and storing feed biomass and diet formulation that increases productivity while reducing overall feed and forage costs and environment impacts, by national and	0 / 309,098 (0%)	649,681 / 2,754,144 (24%)

3.2	Information on commercial and on-farm silage production available for India	A report made available on the comparison of commercial versus farmer produced silage	international development partners, government agencies and extension services, the private sector and community-based organisations in 3 priority countries.	0 / 309,097 (0%)	649,681 / 2,754,144 (24%)
4.1	Basic inputs for defining business models (e.g., cost-benefit analyses, business plans) available in 3 countries (Tunisia, Kenya, Colombia)	Fact sheets formed silage, feed blocks and seed production	Co-creation with development and private-sector partners of up to 5000 small- or medium-sized enterprises in decentralized feed processing, forage marketing or seed multiplication, in 4 priority countries (2022).	0 / 160,314 (0%)	256,218 / 1,347,700 (19%)
4.2	Gaps around promising feed, forage and processing technologies identified in 2 countries (Tunisia, Colombia) that serve as a basis for the development of new extension approaches	Published report	National and international development partners and other value-chain actors adopt and scale up at least 2 of the tested extension approaches (including at least 1 that improves women's access to information) in 5 priority countries (2022).	0 / 240,471 (0%)	384,327 / 2,021,551 (19%)
4.3	Exchange with Innovation Platforms, Roundtables and private sector around feed, forage and processing technologies established in at least 3 countries (Tunisia, Kenya, Colombia) as a first step to improve technology uptake	Organize feeds and forage Innovation Platform meetings in Tunisia	Increased delivery and uptake of feed and forage resources through proof-of-concept scaling, business model development and value-chain approaches by development partners, the private sector (feed and forage traders, feed processors) and (1 million by 2022) farmers across diverse environments in priority countries and other locations in Latin America, North and East Africa and South and Southeast Asia.	0 / 400,785 (0%)	640,544 / 3,369,251 (19%)

LIVESTOCK FP4: LIVESTOCK and the Environment – Milestones for 2017

Milestone Description for 2017		Means of Verifying	For which 2022 outcome	Milestone budget 2017 W1-2/total $ (%)	6-year outcome budget W1-2/total $ (%)
1.1	Environmental risks and opportunities (at household and landscape levels) associated with key technological interventions to increase livestock productivity are characterized and evaluated in 3 country cases.	Reports produced; plan to share with stakeholders developed for 2018.	Environmental concerns are considered in decision-making across >=10 priority countries and other locations, by national and international development partners, government agencies and extension systems, including technology developers seeking to improve cattle, small ruminant and pig production.	418,987 / 458,050 (91%)	2,852,634 / 3,118,589 (91%)
1.2	Three tools developed for ex-ante impact assessment of productivity enhancing technologies: Sustainable Intensification, GHG emissions, and water footprint. In 2 countries national partners are trained in GHG emissions assessment tools (ex-ante).	Conceptual framework reports; journal publications. Training reports.	Targeted solutions are used by research and development partners, across at least 10 priority countries and other locations, to increase the productivity of cattle, small ruminants and pigs in the face of ongoing environmental changes.	139,663 / 152,684 (91%)	950,878 / 1,039,530 (91%)
1.3	Tradeoffs for forage interventions quantified in 3 countries; Tradeoffs between well-being and environmental impacts quantified on the basis of gender differences in 5 countries; Digital data platform developed & piloted for 2 countries.	Working papers for 3 cases; report on gender-differentiated tradeoffs. Pilot data platform.		139,663 / 152,684 (91%)	950,878 / 1,039,530 (91%)
2.1	Environmental benefits (rangeland restoration & GHG mitigation) from key interventions in livestock production system management identified for 3 countries. Indicators for evaluating interventions to enhance water quality & quantity in livestock production developed along with methods for measurement.	Research reports and data bases of quantified benefits. Journal article on livestock-water impact assessment.	Government agencies and development partners at local and national levels across at least 10 priority countries and other locations are promoting environmental management options.	726,220 / 3,531,718 (21%)	1,127,296 / 7,675,089 (15%)
2.2	Draft tools for engaging women and youth developed. Gender-based analysis of impacts of environmental management interventions conducted for four countries.	Draft tool report. 2 reports; 1 journal publication.		311,238 / 2,119,031 (15%)	483,127 / 3,289,324 (15%)
3.1	Recommendations for improving land tenure arrangements and implementing institutional models to reduce land degradation drafted for four countries.	Land use plans (3); Land tenure intervention analysis (4); Draft policy recommendations (2).	National government agencies across at least 5 priority countries design and implement key policies to improve the environmental management of livestock systems.	98,008 / 733,031 (13%)	667,276 / 4,990,772 (13%)
3.2	Policy advice on reducing GHG emissions from livestock production discussed with actors in two countries.	Synthesis reports (2) and policy briefs (2). Policy dialogue reports (2).		98008 / 586425 (17%)	667276 / 3992617 (17%)
3.3	Contribution of national policy on drought risk mitigation to enhance resilience discussed with actors in 2 countries.	Reports of policy engagement (2). Impact assessment of drought risk mitigation measure.		98,008 / 733,031 (13%)	667,276 / 4,990,772 (13%)
3.4	Feasibility and potential of two PES schemes evaluated.	Reports on two schemes (2); Reports on policy dialogues (2); One working paper on PES.	Communities pilot payments for ecosystem services in 3 priority countries.	98,008 / 293,213 (33%)	667,276 / 1,996,309 (33%)
3.5	Issue summaries developed for GHG emissions and resilience to drought.	Reports (2).	Evidence generated by the flagship influences key global livestock agendas (IPCC, Global agenda for Sustainable Livestock).	98,008 / 586,425 (17%)	667,276 / 3,992,617 (17%)

LIVESTOCK FP5: LIVESTOCK Livelihoods and Agri-Food Systems – Milestones for 2017

Note FP5 assumes no W1/2 funding for 2017 and for 6 year W1/2 (numerator) and Total (denominator)

**Based on 2017 no bilateral funding at proposal writing stage but current resource mobilization ongoing.*

Milestone Description for 2017		Means of Verifying	For which 2022 outcome	Milestone budget 2017 W1-2/total $ (%)	6-year outcome budget W1-2/total $ (%)
1.1	Projections for supply and demand of ASFs in target for CRP countries and implications for food security published. Methodology for modelling direct effect of climate change on livestock systems published.	Publications: projections and methodology	National and international research partners and policymakers use analyses of livestock-sector dynamics, investment and ex-ante impact assessments to guide priority setting, investment and policy development for the livestock sector in six priorities	0 / 0 (0%)	3,100,889 / 3,100,889 (100%)*
2.1	No milestone	Not applicable	Policy- or decision-makers in 4 priority countries use the evidence on the benefits of including gender equity considerations	N/A	747,312 / 747,312 (100%)*
2.2	Paper on emerging gender issues in selected livestock value chains generated and disseminated. Report on strategy and entry points to improve youth participation in livestock value chains identified.	Report and Publications	Local or national development partners in four priority countries adopt gender-transformative and youth-supportive approaches (using the evidence from the CRP).	0 / 0 (0%)	1,743,727 / 1,743,727 (100%)*
3.1	Published paper on the relationship between women empowerment and nutrition outcomes.	Publication	National and international development partners, government agencies and the private sector invest in and use the most successful approaches to enhancing livestock-mediated nutritional impact, including institutional arrangements and behavioural approaches, in 4 priority countries.	0 / 140,714 (0%)	1,667,362 / 2,625,400 (64%)
4.1	Report on efficient small ruminant production portfolios for Ethiopia	Report	Livestock communities across 4 priority countries apply tested technologies, management strategies and institutional arrangements that have been developed through system optimization, taking the multiple functions of livestock into account.	0 / 970,232 (0%)	1,929,086 / 8,534,822 (23%)
5.1	Paper on lessons learned and knowledge products to guide partners on improved institutional arrangements in livestock value chains	Paper	Development partners, private sector and government agencies across 6 priority countries apply innovative institutional arrangements to enhance competitiveness and inclusiveness.	0 / 3,291,897 (0%)	3,005,307 / 25,417,893 (12%)
5.2	Paper on the contribution of livestock to livelihoods generated and disseminated	Paper	Policy and decision-makers in 4 priority countries use CRP-developed evidence when developing policy options relative to improving the performance of livestock value chains	0 / 1,410,813 (0%)	1,287,988 / 10,893,383 (12%)

LIVESTOCK Table 2: SLOs, IDOs and sub-IDOs with proposed Resource Outcome indicators

(*) Flagships and Sub-IDOs listed are extracted from the LIVESTOCK Table 1-2 of the Full Proposal
(**) The proposed Research Outcomes are taken from Flagship Theories of Change and Cluster of Activity Outcomes 2022
(***) Targets and proposed contribution to target by [flagship x sub-IDO] have been defined based on current draft POWB for 2017
Most indicators combine contributions from management and cross-cutting elements (impact assessment, gender and youth, capacity development, open-access, communications etc.). The cross-cutting elements and their budgets are described in greater detail in the proposal.

FP*	SLO*	IDO*	Sub-IDO*	Research Outcomes – Indicator**	2017 Target***
FP5 - LLAFS	SLO 1: **Reduced Poverty**	Increased resilience of the poor to climate change and other shocks	Increased household capacity to cope with shocks	• CRP tested technologies, management strategies and institutional arrangements that have been developed through system optimization, taking the multiple functions of livestock into account disseminated to national research and development partners in CRP priority countries and other locations • Number of livestock communities applying tested technologies, management strategies and institutional arrangements that have been developed through system optimization, taking the multiple functions of livestock into account in CRP priority countries and other locations	No target 2017 8 communities implementing CBBPs
FP5 - LLAFS		Enhanced smallholder market access	Reduced market barriers	• CRP evidence generated and disseminated to local and national partners on efficiency and effectiveness of institutional arrangements in CRP priority countries and other locations • Number of development partners, private sector and government agencies applying innovative institutional arrangements to enhance competitiveness and inclusiveness in CRP priority countries and other locations	4 institutional arrangements No target 2017
FP1 - LG		Increased incomes and employment	Increased livelihood opportunities	• Adoption of improved livestock, that are both productive and adapted, by women and men resource poor livestock keepers in CRP priority countries and other locations (CBBP = Community-based breeding program)	Ethiopia - 5 sheep & 2 goat CBBP (1890 HH,10400 direct beneficiaries); Tanzania - 2 goat CBBP (no HH target 2017)
FP5 - LLAFS				• CRP evidence generated and disseminated to local and national partners on efficiency and effectiveness of institutional arrangements in CRP priority countries and other locations • Number of development partners, private sector and government agencies: applying innovative institutional arrangements to enhance competitiveness and inclusiveness, using CRP tested technologies, management strategies and institutional arrangements that have been developed through system optimization, taking the multiple functions of livestock into account, in CRP priority countries and other locations • Number of livestock communities applying tested technologies, management strategies and institutional arrangements that have been developed through system optimization, taking the multiple functions of livestock into account in CRP priority countries and other locations • Number of national and international research partners and policy makers use analyses of livestock-sector dynamics, investment and ex-ante impact assessments to guide priority setting, investment and policy development for the livestock sector in CRP priority and other countries **- should be across many sub-IDO!**	4 institutional arrangements No target 2017 8 communities implementing CBBPs No target 2017

FP3 - F&F			More efficient use of inputs	• Number of research and development partners, decision makers and input suppliers using improved tools for regional and national feed supply and demand scenarios in CRP priority countries and other locations. • Number of research & development partners, the private sector and/or community-level organisations: a) using refined CGIAR stationary and mobile NIRS hubs, b) using well targeted training modules in feed processing and feeding, c) using scalable and gender-responsive processing technologies, d) using on-farm feed assessment tools, in CRP priority countries and other locations. • Number of livestock keepers applying management strategies to conserve and rehabilitate rangelands and use diets that increase productivity (with L&E and LLAFS FPs) in CRP priority countries and other locations. • Number of partners testing and validating inclusive business models for improved supply of forages and feed processing systems in CRP priority countries and other locations • Number of small- or medium-sized enterprises co-created with development and private-sector partners in decentralized feed processing, forage marketing or seed multiplication in CRP priority countries and other locations • Number of development partners, the private sector (feed & forage traders, feed processors) and farmers increasing delivery and uptake of feed and forage technologies through proof-of-concept scaling, business model development and value-chain approaches in CRP priority countries and other locations.	Vietnam, Ethiopia No target 2017 No target 2017 Model inputs available - Tunisia, Kenya, Colombia No target 2017 No target 2017
FP1 - LG	**SLO 1: Reduced Poverty & SLO 2: Improved food and nutrition security for health**	Increased productivity	Closed yield gaps through improved agronomic and animal husbandry practices	• Number of national research and development partners and the private sector using CRP developed business models for multiplication and delivery of improved livestock genetics to resource poor women and men livestock keepers in CRP priority countries and other locations • Adoption of improved livestock, that are both productive and adapted, by women and men resource poor livestock keepers in CRP priority countries and other locations	Small ruminant in Ethiopia - 14 national partners using dissemination models Nigeria, Ethiopia, Tanzania - pilot chicken testing (7,500 HH total); Ethiopia - pilot small ruminant (600 HH); Ethiopia, Tanzania - pilot phenotypic recording dairy cattle
FP2 - LH				• Animal health / extension worked in CRP priority countries and other locations using CRP developed tools to identify the most critical animal/herd health interventions • Number of resource poor livestock keepers adoption CRP developed herd health management packages • Number of vaccine candidates taken up for safety and efficacy testing by regulatory authorities and/or commercial producers; research partners using novel assays and point-of-care diagnostics and/or number of national and international research partners, government agencies and the private sector using CRP developed diagnostic tools and vaccines for disease control in CRP priority countries and other locations • Number of government, development and private sector actors using tested business models to deliver products and services to livestock keepers in CRP priority countries and other locations • Improved access to livestock-related health services and products for resource poor livestock keepers in CRP priority countries and other locations	2 countries 2000 farmers pilot no target 2017 no target 2017 2000 farmers pilot

FP3 - F&F				• Number of local, national & international research & development partners, the private sector, decision-makers and/or livestock producers: a) able to diagnose feed constraints and opportunities and to effectively prioritise and target feed and forage interventions, b) accessing and disseminating superior Brachiaria and Megathyrsus cultivars, c) using CRP developed forage & rangeland resources (with enhanced traits) to increase the rate of genetic gain and exploit the genetic diversity of forages & rangeland species to enhance stress-tolerance, biomass productivity & nutritive value or d) integrating CRP developed platform of genomic and phenotyping tools and technologies into forage breeding programs in CRP priority countries and other locations. • Number of CGIAR crop improvement programs have adopted (BNI) across various crops and forages • Number of new forage, rangeland and crop cultivars, superior to local (based on food, feed & forage traits weighted according to target domains), made available by the private sector (release agencies) and/or applied in CRP priority countries and other locations • Number of national & international development partners, government agencies & extension services, the private sector and community-based organisations: a) better utilising existing and novel feed and forage resources, b) testing / adopting / scaling CRP developed extension approaches in CRP priority countries and other locations • Number of development partners and the private sector disseminating genetically enhanced tropical forages to producers in CRP priority countries and other locations.	No target 2017 No target 2017 Hybrids scaled 15 countries (100,000ha) No target 2017 No target 2017
FP1 - LG			Enhanced genetic gain	• Number of policy makers, national research and development partners and the private sector using CRP knowledge (data) to develop or refine genetic improvement strategies in CRP priority countries and other locations • Number of policy makers, national research and development partners and the private sector adopting CRP development guidelines on policy and institutional arrangements for improvement of AnGR in CRP priority countries and other locations	No target 2017
FP1 - LG			Increased conservation and use of genetic resources	• Number of policy makers, national research and development partners and the private sector using CRP knowledge (data) to develop or refine genetic conservation and use strategies in CRP priority countries and other locations • Number of policy makers, national research and development partners and the private sector adoption CRP development guidelines on policy and institutional arrangements for conservation of AnGR	No target 2017
FP5 - LLAFS	SLO 2: **Improved food and nutrition security for health**	Improved diets for poor and vulnerable people	Increased access to diverse nutrient-rich foods	• Identification and dissemination to partners of nutrition sensitive interventions in CRP priority countries and other locations • Number of national and international development partners, government agencies and private sector: a) testing innovative options for nutrition impact, adoptability and cost-effective institutional arrangements and behavioural approaches within communities, b) investing in and using the most successful approaches to enhancing livestock-mediated nutritional impact, including institutional arrangements and behavioural approaches in CRP priority countries and other locations	2 interventions No target 2017
FP2 - LH		Improved food safety	Reduced biological and chemical hazards in the food system	• Number of national and international research partners with increased capacity and knowledge in the use and delivery of AM and AP in order to prevent emergency of resistance in CRP priority countries and other locations • Number of policy makers engaging in discussion on AMR monitoring based on CRP research outputs in CRP priority countries and other locations • Number of resource poor livestock keepers in CRP priority countries and other locations adopting practices	No target 2017
FP2 - LH		Improved human and animal health through better agricultural practices	Reduced livestock and fish disease risks associated with intensification	• Number of donors, national and international research partners using CRP development tools to prioritize research and development interventions that reduce livestock disease risks for resource poor livestock keepers in CRP priority countries and other locations	No target 2017

			and climate change		
FP4 - ENV	SLO 3: **Improved natural resources systems and ecosystems services**	Natural capital enhanced and protected especially from climate change	Land, water and forest degradation (including deforestation) minimized and reversed	• Number of national government agencies, making improvements in land tenure arrangements for reduced land degradation in CRP priority countries and other locations	No target 2017
FP4 - ENV		Enhanced benefits from ecosystem goods and services	More productive and equitable management of natural resources	• Number of extension systems, development partners and government agencies adopting novel approaches for ex-ante environmental assessment to identify win-win options in CRP priority countries and other locations • Number of national & international development partners, government agencies and extension systems, including livestock production technology developers in CRP priority countries and other locations considering environmental concerns in decision-making • Number of research and development partners using quantification of environmental benefits leads to select and further develop management options in CRP priority countries and other locations • Number of government agencies and development partners at local and national levels in CRP priority countries and other locations promoting CRP promoted environmental management options	No target 2017
FP4 - ENV			Agricultural systems diversified and intensified in ways that protect soils and water	• Number of research and development partners in CRP priority countries and other locations using quantification of environmental impacts to guide the development and selection of productivity-enhancing options. • Number of research and development partners using CRP developed targeted solutions to sustainably increase productivity of cattle, small ruminants and pigs in the face of on-going environmental changes in CRP priority countries and other locations.	No target 2017
FP4 - ENV		More sustainably managed agro-ecosystems	Increased resilience of agro-ecosystems and communities, especially those including smallholders	• Number of communities piloting payments for ecosystem services in CRP priority countries and other locations • Number of national government agencies designing and implementing key policies to improve the environmental management of livestock systems in CRP priority countries and other locations	No target 2017
FP4 - ENV			Reduced net greenhouse gas emissions from agriculture, forests and other forms of land use	• Number of research and development partners using CRP developed targeted solutions to sustainably increase productivity of cattle, small ruminants and pigs in the face of on-going environmental changes in CRP priority countries and other locations. • (For all sub-IDO) Number of publications aimed at targeted global agendas developed and disseminated appropriately • (For all sub-IDO) Evidence generated by CRP Livestock influences key global livestock agendas (IPCC, Global agenda for Sustainable Livestock)	No target 2017 2 publications aimed at global agendas.
FP4 - ENV	Cross-cutting: Climate Change	Reduced net greenhouse gas emissions from agriculture, forests and other forms of land use		• Number of research and development partners using CRP developed targeted solutions to sustainably increase productivity of cattle, small ruminants and pigs in the face of on-going environmental changes in CRP priority countries and other locations. • (For all sub-IDO) Number of publications aimed at targeted global agendas developed and disseminated appropriately	No target 2017 2 publications aimed at global agendas.

			• (For all sub-IDO) Evidence generated by CRP Livestock influences key global livestock agendas (IPCC, Global agenda for Sustainable Livestock)	
FP5 - LLAFS		Gender-equitable control of productive assets and resources	• Gender norms and opportunities for social changes are assessed; GTAs that also support youth are developed, tested and their impact assessed, and knowledge disseminated to partners in CRP priority countries and other locations Number of local or national development partners adopting gender transformative and youth supportive approaches using CRP generated evidence in CRP priority countries and other locations (later outcome)	1 tool (youth strategy) No target 2017
FP1 - LG		Technologies that reduce women's labour and energy expenditure developed and disseminated	• Number of partners using gendered analysis relevant to livestock production and productivity in CRP priority countries and locations	Local and national partners in 2 sites of Ethiopia (poultry production)
FP2 - LH			• Number of donors, national and international research partners using CRP developed tools to prioritize gender research and development interventions that reduce livestock disease risks for resource poor livestock keepers, esp. women, in CRP priority countries and other locations • Number of farmers (m/w) using gender sensitive herd health packages • Number of farmers (m/w) with better access to animal health services	no target 2017 1000 women in 2 countries (pilot)
FP3 - F&F			• Number of partners using gender-sensitive (and/or gender analysed) Flagship developed outputs	No target 2017
FP4 - ENV			• Number of partners using CRP developed tools to assess the impact of policies on equitable participation of livestock actors in the value-chain in CRP priority countries and other locations • Number of policy or decision-makers using CRP generated evidence on the benefits of including gender equity considerations in CRP priority countries and other locations (later outcome)	No target 2017
FP4 - ENV		Improved capacity of women and young people to participate in decision-making	• Role of women and young people in fostering environmental management promoted and strengthened across CRP priority country communities and with development partners. • Number of households (women & youth focus) adopting CRP developed gender responsive environmental management options that are well adapted to Global Environmental Change (GEC) in CRP priority countries and other locations	No target 2017
FP5 - LLAFS			• Number of partners using CRP developed tools to assess the impact of policies on equitable participation of livestock actors in the value-chain in CRP priority countries and other locations • Number of policy or decision-makers using CRP generated evidence on the benefits of including gender equity considerations in CRP priority countries and other locations • Gender norms and opportunities for social changes are assessed; GTAs that also support youth are developed, tested and their impact assessed, and knowledge disseminated to partners in CRP priority countries and other locations • Number of local or national development partners adopting gender transformative and youth supportive approaches using CRP generated evidence in CRP priority countries and other locations	No target 2017 No target 2017 Tanzania & Ethiopia - assessment No target 2017

FP5 - LLAFS	Cross-cutting: Policies and Institutions	Conducive agricultural policy environment	• CRP evidence generated on policy options relative to improving the performance of livestock value chains and disseminated to national partners in CRP priority countries and other locations • Number of policy and decision-makers in CRP priority countries and other locations use CRP-developed evidence when developing policy options relative to improving the performance of livestock value chains • Number of national and international research partners and policy makers use analyses of livestock-sector dynamics, investment and ex-ante impact assessments to guide priority setting, investment and policy development for the livestock sector in CRP priority and other countries **- should be across many sub-IDO!**	Kenya (4 counties; dairy) No target 2017 No target 2017
All FP	Cross-cutting: Capacity development	Enhanced institutional capacity of partner research organisations	• Number of partner organisations who use CGIAR (gender sensitive) learning materials and approaches • Partner institutions perceptions of the benefits and challenges of using CapDev enabled approaches generated by CRPs • Percentage of stakeholders expressing a positive attitude towards CapDev efforts in the CRP	partners in 2 countries No target 2017 No target 2017
		Enhanced individual capacity in partner research organisations through training and exchange	• Number of fellows/trainees (disaggregated by gender, length of training, etc.) • Number of long-term fellows working in national/regional agricultural systems (24 months after completing fellowship) • Number of peer reviewed publications led by National Agricultural Research System (NARS) partners with CGIAR co-authors • Fellows and trainees applying research-for-development skills, tools and methods in their work • Number of capacity development materials produced	Approx. 50 No target 2017 1 - 2 per country No target 2017 approx. 20 (1/CoA)
		Increased capacity for innovation in partner research organisations	• Composite index measuring capacity to innovate (to be defined with the capacity to innovate and the resilience and adaptive capacity group) • Partner institutions perceptions of the benefits and challenges of using CapDev enabled approaches generated by CRPs	No target 2017 No target 2017
		Increased capacity for innovation in partner development organisations and in poor and vulnerable communities	• Number of multi-stakeholder platforms CRP Livestock engages with • Percentage of stakeholders expressing a positive attitude towards CapDev efforts in the CRP • Percentage of stakeholders expressing a positive change in collaborative capacity • Partner institutions perceptions of the benefits and challenges of using CapDev enabled approaches generated by CRPs	1 - 2 in CRP priority countries No target 2017 No target 2017 No target 2017

MAIZE

MAIZE FP1: Enhancing MAIZE's R4D Impacts

Milestone Description for 2017[26]		Means of Verifying[1]	For which 2022 outcomes[2]	Budget 2017	6-year W1-2 / total (%)[27]
1.1	Ex-ante impact assessments identify potential opportunities, threats and game changes for MAIZE	Reports, policy briefs, dissemination documentation	Increased capacity of partner organizations through MAIZE foresight and ex-ante analysis	466,124	3,170,532 /8,569,006 (37%)
1.2	Adoption and impact studies on technologies-rolling plan based on progress of technologies along the theory of change	Reports, policy briefs, dissemination documentation	Increased capacity of beneficiaries to adopt research outputs through better MAIZE learning from adoption studies and impact assessment	559,348	3,804,639 / 10,282,807 (37%)
1.3	Gender/social inclusion lenses applied to 2-4 MAIZE innovation pipelines and assessments	Reports, global recognized women empowerment indicators, case studies	Improved capacity of women and young people to participate in decision-making through MAIZE's gender and social inclusiveness	466,124	3,170,533 / 8,569,006 (37%)
1.4	Preparation and roll-out of rapid value chain assessments with proper gender lens in selected countries to identify opportunities and bottlenecks in MAIZE.	Reports, case studies, dissemination documentation	Increased capacity of partner organizations through MAIZE market/value chain opportunities prioritized for their livelihoods enhancing potential	372,899	2,536,425 / 6,855,205 (37%)

[26] From MAIZE AFS Phase II Full Proposal Table D
[27] From MAIZE AFS Phase II Full Proposal Table B

MAIZE FP2: Novel Diversity and Tools for Increasing Genetic Gains

Milestone Description for 2017[28]		Means of Verifying[1]	For which 2022 outcomes[2]	Budget 2017	6-year W1-2 / total (%)[29]
2.1	Most recent 5 years phenotypic, genotypic and geneological data curated and stored in centralized data repositories.	Annual storage of data in open access databases and other data repositories. Annual download of data metrics. Project reports	Efficiency and effectiveness of MAIZE partners and global research community enhanced by use of new data capture, storage, dissemination and analysis tools	255,446.38	1,737,524 / $5,604,915.09 (31%)
2.2	Second-generation tropicalized haploid inducers with at least 10% haploid induction rate (HIR) developed and made available to maize researchers globally.	List of public/private sector institutions that received second-generation haploid inducers from MAIZE	Increased use of doubled haploids by MAIZE partners, accelerating genetic gains	1,346,898.77	9,161,488 / $29,553,188.65 (31%)
2.3	Comprehensive characterization of genebank accessions using genotypic, geospatial and adaptive distribution data conducted, and at least 1000 high value accessions identified through in-silico approaches	Metrics on annual genebank accession shipments to maize researchers globally. Project reports. Training materials. Genomic selection models, marker and haplotype and accession information provided in open access and other data repositories	New germplasm sources of genetic variation and molecular markers for prioritized traits used by MAIZE partners	487,670.32	3,317,091 / $10,700,292.44 (31%)
2.4	Multi-location testing of at least 300 pre-breeding germplasm entries for at least two priority traits (MLN, Tar spot complex) and general hybrid performance	CRP/Project reports.	MAIZE partners and global research community use novel sources of useful genetic variance for drought, MLN, Tar spot complex, and other key traits	232,223.94	1,579,567 / $5,095,377.35 (31%)

[28] From MAIZE AFS Phase-II Full Proposal Table D
[29] From MAIZE AFS Phase-II Full Proposal Table B

MAIZE FP3: Stress Tolerant and Nutritious Maize

Milestone Description for 2017[30]		Means of Verifying[1]	For which 2022 outcomes[2]	Budget 2017	6-year W1-2 / total (%)[31]
3.1	Stage 4 hybrid advancement cohort with a 3% annual yield advantage under targeted abiotic and biotic stresses in SSA, Asia and LA, as compared to previous year's benchmark hybrids; Integration of key GIS information into MAIZE breeding pipelines for developing new varieties with traits required for future environments; Two genetic gains era (baseline) studies conducted to assess genetic gains under optimal and relevant stress environments in Asia and Latin America.	Open access databases; publications; reports; annual MAIZE germplasm shipments to public and private sector partners in SSA, LA and Asia; Improved MAIZE varieties released by seed enterprises and national programs (presented in MAIZE Atlas)	Increase in the rate of genetic gain for grain yield (as measured in breeders' trials) in rainfed, climate-vulnerable environments of SSA from 0.6% to 1.2% annually, and from ≤1% to at least 1.75% in Asia and LA (linked to FP2 and Genetic Gains Platform)	1,535,184.34	10,442,190 / 94,928,996.35 (11%)
3.2	An MLN Phytosanitary Community of Practice (CoP) established and functional in ESA, implementing harmonized protocols for effectively detecting and preventing trans-boundary movement of MLN pathogens, especially MCMV.	Tracking online tools; Web portal; Consolidated MLN Survey Reports from SSA; SOPs and surveillance tools/documents; Documented Training Materials; CoP Meeting Minutes; Communications products.	Effective pest/disease surveillance, monitoring and diagnostics protocols/procedures for controlling the spread and impact of existing/ emerging threats (e.g., MLN), established in SSA	153,518.43	1,044,219 / 9,492,899.64 (11%)
3.3	At least 300 hybrids and 30 OPVs with high levels of micronutrients and desirable grain quality traits evaluated in multiple locations for agronomic performance and nutrient levels.	Open access databases; publications; reports; annual MAIZE germplasm shipments to public and private sector partners in SSA, LA and Asia; Improved nutritious MAIZE varieties released by seed enterprises and national	Nutritious maize hybrids/varieties with superior agronomic performance and desirable gender-informed traits (processing properties, palatability and storability) adopted in targeted geographies in SSA, Asia and LA (linked to A4NH)	245,629.43	1,670,750 /15,188,639.42 (11%)
3.4	Digital platform (proximal and remote) on unmanned aerial vehicle (UAVs) equipped with various high resolution cameras (hyper-spectral, multi-spectral, thermal, RGB etc., depending on targeted traits) in support of high-throughput phenotyping and real-time data capture; Linkages developed with Phenotyping Modules in the Genetic Gains Platform.	Surveys; literature review; Qualitative data on improvement in collection of phenotypic data and efficiency of breeding programs; Phenotyping site surveys; Breeding hubs surveys; Reports; Training materials, and list of participants of training courses; Communication products.	Reduction in product development and elite line recycling time and costs through integration of novel tools/technologies in breeding programs.	245,629.58	1,670,751 / 15188639.72 (11%)
3.5	Parental lines of improved MAIZE hybrids evaluated annually for seed producibility, herbicide sensitivity, and other desirable agronomic traits; Gender and socio-economic considerations included when designing crosses for developing products, seed production research and determining recommendation domains.	Online information on seed production information packages of MAIZE parental lines and hybrids; Reduced cost of goods sold (COGS); Surveys; Reports	Reduced cost of seed production (= reduced "cost of goods sold or COGS") of newly developed and released maize varieties.	276,333.15	1,879,594 / 17,087,219.34 (11%)
3.6	Availability and affordability of MAIZE-derived novel varieties improved in target geographies through public-private partnerships.	MAIZE Atlas showing improved MAIZE varieties commercialized by partners in SSA, Asia and LA; Documentation of old and obsolete maize varieties replaced by seed companies with improved MAIZE hybrids; Variety adoption monitoring reports; Training materials, and list of participants of MAIZE training courses; Surveys, literature review, and qualitative data.	Enhanced adoption of climate resilient and nutritious maize varieties by smallholder farmers in stress-prone rainfed environments of SSA, Asia and LA providing better yields and stability	614,073.73	4,176,876 / 37,971,598.54 (11%)

[30] From MAIZE AFS Phase-II Full Proposal Table D
[31] From MAIZE AFS Phase-II Full Proposal Table B

MAIZE FP4: Sustainable intensification of maize-based systems for better livelihoods of smallholders

Milestone Description for 2017[32]		Means of Verifying[1]	For which 2022 outcomes[2]	Budget 2017	6-year W1-2 / total[33]
4.1	Multi-criteria assessments taking into account environmental and social acceptability aspects, based on standardized protocols for multi-criteria assessments of advanced crop management packages (not individual technologies)	Reports, case study documentation, significant change stories, management options and DSS systems, NARS Partners trained and systems approach, Framework developed by IASA and ORNL delivered	Improved understanding of farmers' livelihood strategies and their diversity, allowing NARES and extension partners to target and implement institutional and technical interventions (in collaboration with other CRPs with a systems Flagship)	391,007.95	2,659,602 / 24,178,196.95 (11%)
4.2	Innovative tools, methods and multi-media extension materials to enhanced soil quality, nutrient and water use efficiency through participatory approaches	Reports, case studies, materials, dissemination documentation, tools	Decision support systems for nutrient and water management used by development partners	651,679.77	4,432,669 / 40,296,994 .92 (11%)
4.3	Increased adoption of combinations of SI strategies, resource and labour saving technologies in specific target geographies compared to 2016	CRP Commissioned External Evaluation reports , project/donor-driven impact studies; partner self-assessments	Adoption of productivity enhancing technologies by smallholder farming communities through participatory methods	651,679.77	4,432,669 / 40,296,994 .92 (11%)
4.4	Existing scaling approaches including public/ private partnership and context specific business models evaluated in target geographies leading to improve scaling models and critical scaling factors defined	Documentation review, Survey of private sector CRP Commissioned External Evaluation reports	Impact at scale through adoption of SI technical innovation and practices and technical capacity reinforcement of scaling partners	912,351.74	6,205,737 / 56,415,792.88 (11%)

Total 2017 budget for FP1 to FP4 (across all funding sources, and excluding management costs)	2017 W1 & W2 needed (only for FP1 to FP4, and excluding management costs)
US$ 64,140,240	US$ 9,863,822

[32] From MAIZE AFS Phase-II Full Proposal Table D
[33] From MAIZE AFS Phase-II Full Proposal Table B

Table 2: MAIZE AFS - FPs, SLOs, IDOs and sub-IDOs with Indicators and Targets per sub-IDO for 2017.

(*) MAIZE FPs, IDOs and Sub-IDOs are extracted from the MAIZE AFS Phase-II Full Proposal PIM Tables A and C.

(**) The proposed CRP-level indicators are based on Table 1.2: MAIZE value proposition under two investment scenarios, in terms of contributions to the CGIAR SRF targets (2022), of the MAIZE AFS Phase-II Full Proposal.

MAIZE FP (*)	SLO	Proposed CRP-level indicators at SLO Level (**)	IDO	Sub-IDO (*)	Indicators per Sub-IDO	Targets for 2017
FP1 FP2 FP3 FP4	Reduced Poverty (SLO1)	Number of farm households that have adopted improved MAIZE varieties[#] and/or management practices, with 30-40% women farmer participation, and 10% women-headed households (million households)	1.1	1.1.2 Reduced production risk	Number of additional farmers adopting MAIZE technologies (improved varieties/management practices) that reduce production risks	At least 0.75 million additional farmers adopt MAIZE technologies (improved varieties/management practices) that reduce production risks
			1.3	1.3.3 Increased value capture by producers	Number of additional farmers with % Increase in income, gender disaggregated, where possible	At least 0.5 million additional farmers increase their income by 5%, of which 50% are female
				1.3.4 More efficient use of inputs	Number of additional farmers adopting MAIZE technologies (improved varieties/management practices) that increase input use efficiency	At least 1 million additional farmers adopt MAIZE technologies (improved varieties/management practices) that increase input use efficiency
		Number of maize consumers and producers (men, women, children), of which 50% are female, assisted to exit poverty (<$1.25/day) (million people)	1.4	1.4.1 Reduced pre- and post-harvest losses, including those caused by climate change	Number of additional farmers adopting MAIZE technologies (improved abiotic and biotic stress tolerant/resistant varieties and integrated weed management practices) that contribute to reduced pre- and post-harvest losses	At least 0.5 million additional farmers adopt MAIZE technologies (improved abiotic and biotic stress tolerant/resistant varieties and integrated weed management practices) contributing to reduced pre- and post-harvest losses
				1.4.2 Closed yield gaps	Number of additional farmers adopting improved MAIZE management practices that reduce yield gaps	At least 0.3 million additional farmers adopt improved MAIZE crop management practices
				1.4.3 Enhanced genetic gain	▪ % increase in maize genetic gain for the targeted agro-ecologies in SSA, Asia and Latin America	▪ At least 1.0-1.5% increase in maize genetic gain recorded in the On-farm Trials

[#] An improved MAIZE variety is an elite product derived completely from CGIAR (CIMMYT/IITA) maize lines or a combination product derived using both CGIAR elite maize line(s) and proprietary public/private sector maize line(s) as parents.

					▪ Number of new MAIZE varieties with improved abiotic and biotic stress resilience released by NARS institutions and seed company partners ▪ Number of additional farmers adopting improved MAIZE varieties with abiotic and biotic stress tolerance	▪ At least 60 new MAIZE varieties released in 2017 across SSA, Asia and Latin America by NARS institutions and seed company partners ▪ At least 0.75 million additional farmers adopt improved MAIZE varieties with abiotic and biotic stress tolerance
				1.4.4 Increase conservation and use of genetic resources	Number of additional germplasm bank accessions, and traits from these, used in breeding programs targeting resource-poor farmers	At least 20 additional pre-bred families, derived from identified maize germplasm accessions with target traits relevant for SSA and Latin America, evaluated through MAIZE breeding programs
FP1 FP2 FP3 FP4	Improved Food and Nutrition Security and health (SLO2)	% genetic gain (as measured in breeders' trials) in the target environments and for target traits	1.4	1.4.1 Reduced pre- and post-harvest losses, including those caused by climate change	▪ % increase in genetic gain for key traits in the target agro-ecologies assessed in the MAIZE breeding programs ▪ Number of personnel from public and private sector institutions trained on improved pathogen/pest diagnostics and surveillance tools	▪ At least 3% increase in genetic gain of Stage 4 hybrid advancement cohorts under targeted abiotic and biotic stresses in SSA, Asia and LA, as compared to benchmark commercial hybrids and internal genetic gain checks from previous years. ▪ At least 50 persons from public and private sector institutions in SSA trained on harmonized protocols for effectively detecting and preventing trans-boundary movement of MLN pathogens.
				1.4.4 Increased conservation and use of genetic resources	▪ Number of additional maize germplasm bank accessions and pre-bred lines using germplasm bank accessions distributed to public and private sector partners (through SMTA) from CIMMYT and IITA maize genebanks ▪ Number of additional novel, functionally useful alleles/haplotypes identified in maize germplasm accessions for trait improvement and germplasm enhancement	▪ At least 1000 additional high-value maize accessions and pre-bred lines developed using germplasm bank accessions comprehensively characterized and distributed to public and private sector partners ▪ Breeder-ready markers/high-value haplotypes for at least two additional prioritized traits validated (under FP2) and/or deployed in MAIZE breeding programs (FP3)
		Number of people (men, women, children), of which 50% are female, assisted out of hunger and meet minimum dietary requirements		1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices	Number of additional farmers adopting improved crop management practices that reduce yield gaps in maize-based farming systems	At least 0.3 million additional farmers adopt improved crop management practices that reduce yield gaps in maize-based farming systems
			2.1	2.1.1 Increased availability of diverse nutrient-rich foods	▪ Number of additional people (including men, women, children), of which 50% are female, consuming biofortified maize, especially Quality Protein Maize (QPM), in target countries in SSA, LA and Asia. ▪ Number of women of reproductive age in maize-based farming households consuming adequate number of food groups through farm diversification.	▪ At least 100,000 additional people consume biofortified maize, especially QPM. ▪ At least 150,000 additional women consume adequate number of food groups through farm diversification

FP1 FP4	Improved natural resources and agro-ecosystem services (SLO3)	% increase in water- and/or nutrient-use efficiency through improved crop management practices in maize-based farming systems	3.2	3.2.2 Agricultural systems diversified and intensified in ways that protect soils and water	Number of additional farmers adopting MAIZE technologies (improved varieties and management practices) that diversify and intensify MAIZE AFS and increase input use efficiency	At least 0.5 million additional farmers adopt MAIZE technologies (improved varieties and management practices) that diversify and intensify MAIZE AFS and increase input use efficiency
		Reduction in GHG emissions from maize-based farming systems through improved farm management practices			Number of additional farmers adopting MAIZE technologies (conservation agriculture, soil C sequestration, and land-sparing) that reduce GHG emissions	At least 0.25 million additional farmers adopting MAIZE technologies (conservation agriculture, soil C sequestration, and land-sparing) that reduce GHG emissions
FP1, FP2, FP3, FP4	Cross-cutting IDOs		A.1	A.1.4 Enhanced capacity to deal with climatic risks and extremes	Number of additional farmers adopting MAIZE technologies (climate-resilient varieties and climate-smart management practices) that enhance capacity to deal with climatic risks and extremes	At least 0.5 million additional farmers adopt MAIZE technologies (climate-resilient varieties and climate-smart management practices) that enhance capacity to deal with climatic risks and extremes
FP1, FP2, FP3, FP4			B.1	B.1.3 Improved capacity of women and young people to participate in decision-making	Number of additional women and young people improving their capacity through MAIZE knowledge products and technologies	At least 0.2 million additional women and young people improve their capacity through MAIZE knowledge products and technologies
FP1, FP2, FP3, FP4			C.1	C.1.1 increased capacity of beneficiaries to adopt research outputs	▪ Number of existing/new public and private sector institutions strengthening their research/development capacity using MAIZE tools/technologies/know-how and decision support systems ▪ Number of policy decisions taken based on engagement and information dissemination by MAIZE	▪ At least 250 existing/new private sector institutions and 50-60 existing/new public sector partner institutions continue to engage under MAIZE and strengthen their research/development capacity in the target geographies using MAIZE tools/technologies/know-how and decision support systems ▪ At least one policy decision taken based on engagement and information dissemination by MAIZE
FP1, FP2, FP3, FP4			D.1	D.1..1 Enhanced institutional capacity of partner research organizations	Number of existing/new NARS institutions benefiting from MAIZE research outputs, infrastructure development, and capacity strengthening programs	At least 40-50 existing/new NARS partner institutions benefit from MAIZE research outputs, infrastructure development, and capacity strengthening programs

PIM (Policies, Institutions and Markets)

PIM FP1: Technological Innovation and Sustainable Intensification

Milestone Description for 2017		Means of Verifying	For which 2022 outcomes	2017 W1-2 budget	6-year W1-2 budget
1.1	Updated foresight modeling data, tools and analyses are used by CRPs and CGIAR Centers	References in CRP and partner organization plans	Foresight models and results are used by 12 regional and national research organizations or government agencies in Africa, Asia and Latin America and global development organizations as inputs to their priority-setting (includes capacity development)	1,035,000	6,398,163
1.2	Advancement of biosafety regulatory frameworks at national level	Tracking of policy changes on web and project progress reports	Studies on policies, regulations, and investment in support of agricultural science, technology, and innovation are used by key government entities in 3 CGIAR countries of collaboration (includes capacity development)	1,242,000	7,677,795
1.3	Data and analyses of agricultural R&D are used in strategies and programming decisions in national agricultural research organizations	Data available on ASTI websites, NARS annual reports, CRP led assessments	Budget allocations for agricultural research exceed projections of the 2012-2016 trend in 5 CGIAR countries of collaboration (includes capacity development)	828,000	5,118,530
1.4	Implementation partners use research results on innovative dissemination methods to increase technology adoption	Impact assessment studies	In 3 CGIAR countries of collaboration, adoption of selected promising technologies and management practices is 20% above counterfactual without supportive technology dissemination innovations and policies (includes capacity development)	1,035,000	6,398,163

PIM FP2: Economywide Factors Affecting Agricultural Growth and Rural Transformation

Milestone Description for 2017		Means of Verifying	For which 2022 outcomes	2017 W1-2 budget	6-year W1-2 budget
1.1	Evidence on the ways that alternative (agricultural and non-agricultural) public expenditures and public services contribute to agricultural development and rural welfare considered by governments and civil society via policy fora in 1 CGIAR country of collaboration	Country and cross-country research and policy studies	Governments in at least 3 CGIAR countries of collaboration use empirical evidence and quantitative methods to modify their allocation of public resource towards better targeted investments favouring inclusive agricultural growth and rural transformation (includes capacity development)	813,000	5,025,803
1.2	Evidence on the constraints and opportunities for raising agricultural growth and rural incomes considered by governments via policy fora in 2 CGIAR countries of collaboration	Country and cross-country research and policy studies	Governments in at least 3 CGIAR countries of collaboration use tools and evidence on the economy-wide factors affecting rural transformation to develop policies that are better targeted towards raising agricultural growth and rural incomes (includes capacity development)	1,219,500	7,538,705
1.3	Evidence on viable entry points for integrating research into the policy process used in multi-stakeholder fora in 1 CGIAR country of collaboration	Country and cross-country research and policy studies	Governments in at least 3 CGIAR countries of collaboration use tools and evidence on the economy-wide factors affecting rural transformation to develop policies that are better targeted towards raising agricultural growth and rural incomes (includes capacity development)		
1.4	NONE		Agricultural growth and rural incomes are increased (above counterfactual trend) in 3 CGIAR countries of collaboration implementing evidence-based policies and/or public expenditure allocations (includes capacity development)	677,500	4,188,170

PIM FP3: Inclusive and Efficient Value Chains

Milestone Description for 2017		Means of Verifying	For which 2022 outcomes	2017 W1-2 budget	6-year W1-2 budget
1.1	Evidence is used to support changes in trade policy and/or regulations with global and regional implications in 1 instance	PIM assessment studies	Evidence is used to support changes in trade policy and/or regulations with global and regional implications in 3 instances (includes capacity development)	702,000	4,339,624
1.2	The main distortions in international and national markets and priority interventions for major 5 value chains in CGIAR countries of collaboration are identified	Nominal rates of protection from the Ag-Incentives Consortium (FAO, World Bank, OECD, IFPRI)	Research and development organizations use PIM tools for value chain analysis and development in 20 instances in 6 countries of CGIAR collaboration (includes capacity development)	1,228,500	7,594,341
1.3	Postharvest losses by source are quantified, leading to prioritization of actions in priority value chains in CGIAR countries of collaboration	PIM studies and documentation of consultations with implementation partners	Research and development organizations use PIM tools to address postharvest losses in 10 countries, including 5 CGIAR countries of collaboration (includes capacity development)	702,000	4,339,624
1.4	Value chain scaling models are used by public and private sector agents to achieve greater development impact in 2 CGIAR countries of collaboration	Impact assessment studies	Implementation partners in three countries use analysis of approaches to scaling to increase numbers of beneficiaries by 50% in designated projects (includes capacity development)	526,500	3,254,718
1.5	NONE		Earnings of smallholder male and female farmers from specific value chains increase by 20% as a result of interventions in these value chains in 3 CGIAR countries of collaboration (includes capacity development)	351,000	2,169,812

PIM FP4: Social Protection for Agriculture and Resilience

Milestone Description for 2017		Means of Verifying	For which 2022 outcomes	2017 W1-2 budget	6-year W1-2 budget
1.1	Evidence is used in policy discussions of national social protection programs and policies in 2 CGIAR countries of collaboration	PIM study reports	National social protection programs and policies are modified based on evidence in 4 countries, including 3 CGIAR countries of collaboration (includes capacity development)	632,000	3,906,898
1.2	New social protection implementation mechanisms are tested across different in several CGIAR countries of collaboration	Monitoring reports of implementing partners impact assessment studies	Improved social protection innovations provide food and nutrition benefits to poor households in 3 countries (includes capacity development)	553,000	3,418,535
1.3	New insurance products are tested at scale with implementation partners in 1 CGIAR country of collaboration	Monitoring reports of implementing partners impact assessment studies	New insurance products are being used by smallholder farmers in 3 countries, including 2 CGIAR countries of collaboration (includes capacity development)	395,000	2,441,811

PIM FP5: Governance of Natural Resources

Milestone Description for 2017		Means of Verifying	For which 2022 outcomes	2017 W1-2 budget	6-year W1-2 budget
1.1	The toolbox of methods for tenure research is used by researchers	PIM website and outcome assessments	Evidence informs natural resource governance and tenure policy processes/implementation in 12 countries, including 6 CGIAR countries of collaboration (includes capacity development)	699,000	4,321,078
1.2	In collaboration with policy makers, innovative tenure security-enhancing innovations are tested across relevant contexts in 2 CGIAR countries of collaboration	Study reports	Improved policies, institutions, or implementation modalities regarding tenure security are adopted in 6 countries, with greater security of beneficiaries documented in at least 2 (includes capacity development)	699,000	4,321,078
1.3	Opportunities for landscape governance work across CRPs are agreed upon and initiated	Study reports	Improved landscape-level governance arrangements are implemented in 6 countries, with more productive and equitable management in at least 2 (includes capacity development)	932,000	5,761,438

PIM FP6: Cross-cutting Gender Research and Coordination

Milestone Description for 2017		Means of Verifying	For which 2022 outcomes	2017 W1-2 budget	6-year W1-2 budget
1.1	PIM gender research methods and guidelines are used by CGIAR researchers and partner research organizations in 5 CGIAR countries of collaboration	Study reports citations of PIM publications on gender research methods	National researchers use improved gender research methods in 5 CGIAR countries of collaboration (includes capacity development)	489,250	2,936,355
1.2	Gender equity enhancing recommendations from case studies are synthesized and discussed with policy makers in 2 CGIAR countries of collaboration	Policy briefs and PIM studies	Gender dimensions of policies are strengthened in 4 CGIAR countries of collaboration (includes capacity development)	293,550	1,761,813
1.3	Research on effective interventions for empowering women in agriculture is used by 2 implementation partners	PIM outcome assessments	The value of indicators of women's empowerment in agriculture increase in 3 CGIAR countries of collaboration (includes capacity development)	195,700	1,174,542

PIM Table 2. Proposed indicators by sub-IDO. November 14, 2016

FP	SLO	IDO	Sub-IDO	Proposed draft indicators	Targets for 2017
FP4	Reduced poverty (SLO1)	Increased resilience of the poor to climate change and other shocks	Increased household capacity to cope with shocks	# households covered by social protection programs that benefited from input from PIM # farmers using improved insurance/financial products improved by PIM	7,000,000 10,000
FP3 FP4		Enhanced smallholder market access	Improved access to financial and other services	# farmers using improved insurance/financial products improved by PIM	10,000
FP3			Reduced market barriers	Nominal rate of protection for targeted commodities and countries	Baseline established
FP2 FP3		Increased incomes and employment	Increased livelihood opportunities	Proportion non-farm income generation in rural areas Rural poverty rates in 10 countries of collaboration	Baseline established Baseline established
FP3			Increased value capture by producers	Nominal rate of protection for targeted commodities and countries	Baseline established
FP2 FP3			More efficient use of inputs	Proportion non-farm income generation in rural areas Rural poverty rates in 10 countries of collaboration	Baseline established Baseline established
FP3		Increased productivity	Reduced pre and post-harvest losses	# commodity x country studies of PHL using Improved measurement methods # commodity x country studies testing interventions to address PHL	6 2
FP1			Closed yield gaps	5-year moving average of yields for mandate products in 10 countries of collaboration	Baseline established
FP1			Increased conservation and use of genetic resources	Biodiversity indicators from foresight modelling work in 10 countries of collaboration	Baseline established
FP5 FP4			Increased access to productive assets, including natural resources	# countries tracking progress towards tenure policy reforms	8

FP	SLO	IDO	Sub-IDO	Proposed draft indicators	Targets for 2017
FP4	Improved food and nutrition security and health (SLO2)	Improved diets for poor and vulnerable people	Increased access to diverse nutrient rich foods	# households covered by social protection programs that benefited from input from PIM	7,000,000
FP5	Improved natural resources and agro-ecosystem services (SLO3)	Enhanced benefits from ecosystem goods and services	More productive and equitable management of natural resources	# of communities using identified improved models for managing shared resources	1,000
FP1	Climate change	Mitigation and adaptation achieved	Improved forecasting of impacts of climate change and targeted technology development	# organizations using improved foresight models incorporating climate change	6
FP2 FP3 FP4 FP5 FP6	Gender and youth	Equity and inclusion achieved	Gender equitable control of productive assets and resources	# tenure security interventions validated for equity effects Women's empowerment in agriculture index	2 Baseline established
FP1 FP6			Technologies that reduce women's labor and energy expenditure developed and disseminated	Women's empowerment in agriculture index	Baseline established
FP2 FP4 FP6			Improved capacity of women and young people to participate in decision making	Women's empowerment in agriculture index	Baseline established
FP1 FP2	Policies and institutions	Enabling environment improved	Increased capacity of partner organizations as evidenced by rates of investment in agricultural research	Expenditure on national agricultural R&D (from ASTI data)	Baseline established
FP1 FP2 FP3 FP5 FP6			Conducive agricultural policy environment	# policy oriented knowledge sharing events with policy makers Growth rate of agriculture production and value Nominal rate of protection for targeted commodities and countries	10 Baseline established Baseline established

FP4			Conducive environment for managing shocks and vulnerability	# social protection programs using improved delivery mechanisms	4
FP	**SLO**	**IDO**	**Sub-IDO**	**Proposed draft indicators**	**Targets for 2017**
FP1 FP2 FP3 FP4 FP6	Capacity development	National partners and beneficiaries enabled	Enhanced institutional capacity of partner research organizations	% PIM projects with national research partners	75
FP1 FP2 FP3 FP4 FP5 FP6			Enhanced individual capacity in partner research organizations through training and exchanage	# researchers trained in PIM research methods/tools % respondents to survey who reported improved knowledge of CGIAR gender research and tools	9,000 50
FP5			Increased capacity for innovation in partner development organizations	# groups and multi-stakeholder platforms facilitated by PIM	20

RICE

RICE FP1: Accelerating impact and equity in 2017

Milestone Description for 2017		Means of Verifying	For which 2022 outcome	Milestone budget 2017 W1-2/total $ (%)	6-year outcome budget W1-2/total $ (%)
1.1	Updated rice supply-demand scenario analyses, horizon scanning, and target domains for RICE technologies identified or refined (rolling plan)	Reports, targets domain maps, RICE Management Information System updates	Foresight analyses and priority setting used by RICE and partner scientists to develop and target technology options	466,878/ 2,900,367 (16%)	3,040,000 / 19,000,000 (16%)
1.2	Measures of women empowerment quantified using RICE baseline data at key action sites study on youth's role in decision making initiated	Women empowerment indicators in RICE Management Information System case stories reports	Improved role in decision making by women and youth in rice value chains as evidenced by empowerment measures at key action sites	432,229/ 2,685,119 (16%)	2,720,000 / 17,000,000 (16%)
1.3	10% of key regions have at least one functional multi-stakeholder platform at key action sites	Reports, RICE Management Information System indicators	Well-functioning multi-stakeholder platforms for innovation at six action sites (Bangladesh, India, Nepal, Nigeria, Senegal, Tanzania)	268,823/ 1,669,999 (16%)	1,760,000 / 11,000,000 (16%)
1.4	250-300 scholars (30% women) enrolled in advanced degree training (bachelors, masters, PhD)	Training center statistics	New cadre of young, well-trained scientists - 30% women - engaged in rice research	89,608/ 556,666 (16%)	640,000 / 4,000,000 (16%)
	No milestone in 2017	-	Effective public and private delivery systems for seeds of improved rice varieties in six countries (Bangladesh, India, Nepal Nigeria, Senegal, Tanzania)	-	800,000/5,000,000 (16%)
1.5	Adoption and impact studies on NRM technologies and/or varieties - rolling plan based on progress of technologies along the impact pathway	Reports RICE Management Information System updates	Impacts and adoption of RICE technologies assessed	390,201/ 2,424,029 (16%)	2,560,000 / 16,000,000 (16%)
1.6	Annual updates of progress and performance indicators reflective learning workshops commissioned reviews and evaluations (rolling plan)	Reports RICE Management Information System updates	Functional and effective results-based management system for RICE and its partners	510,211/ 3,169,564 (16%)	3,200,000 / 20,000,000 (16%)

RICE FP2: Upgrading rice value chains in 2017

Milestone Description for 2017		Means of Verifying	For which 2022 outcomes	Milestone budget 2017 W1-2/total $ (%)	6-year outcome budget W1-2/total $ (%)
	No milestone in 2017	-	Diversified enterprise opportunities through upgraded value chains at six action sites (Indonesia, Myanmar, Vietnam; Cote d'Ivoire, Nigeria, Tanzania)	-	3,698,076/10,200,000 (36%
1.1	Existing value chain services, finance options, and constraints identified at six action sites	Reports, case study documentation, significant change stories, RICE Management Information System indicators	Income by value-chain actors increased by 10% at six action sites through improved access to financial and other services (Indonesia, Myanmar, Vietnam, Cote d'Ivoire, Nigeria, Tanzania)	96,836/ 267,093 (36%)	576,000 / 1,600,000 (36%)
1.2	Baseline surveys conducted and entry points for loss reduction/value addition identified	Reports, case study documentation, significant change stories, RICE Management Information System indicators	Income by value-chain actors increased by 15% through adoption of at least one of the postharvest or value addition practices or technologies at six action sites (Bangladesh, Cambodia, Indonesia, Benin, Cote d'Ivoire, Nigeria)	174,637/ 481,683 (36%)	1,116,000 / 3,100,000 (36%)
	No milestone in 2017	-	Functional value chains for improved processing and novel products from rice at six action sites (Bangladesh, Cambodia, Indonesia; Benin, Cote d'Ivoire, Nigeria)	-	1,885,294/5,200,000 (36%
1.3	Capacity development needs among partner research organizations along the rice value chain identified	Reports, research projects at partner research organizations, RICE Management Information System updates	Capacity development needs among partner research organizations along the rice value chain identified	125,772/ 346,904 (36%	8282,000 / 2,300,000 (36%)

RICE FP3: Sustainable farming systems in 2017

Milestone Description for 2017		Means of Verifying	For which 2022 outcomes	Milestone budget 2017 W1-2/total $ (%)	6-year outcome budget W1-2/total $ (%)
1.1	Farming systems analyses platform established within RICE and with other CRPs at eight key action sites	Reports, case study documentation, RICE Management Information System indicators, management option dissemination materials	Results of completed farming systems analyses used to focus development activities on key opportunities for adapting to climate risks at eight action sites (Nigeria, Senegal, Tanzania, Madagascar, Vietnam, Indonesia, Bangladesh, Myanmar)	193,747/ 1,495,490 (13%)	1,300,000 / 10,000,000 (13%)
1.2	Baseline rice yield gap quantified, and constraints and opportunities identified at eight key action sites	Reports, case study documentation, significant change stories, RICE Management Information System indicators, management option dissemination materials	Improved management practices that reduce yield gap by 10-15% developed and disseminated at eight action sites (Nigeria, Senegal, Tanzania, Madagascar, Vietnam, Indonesia, Bangladesh, Myanmar)	308,590/ 2,381,939 (13%)	1,950,000 / 15,000,000 (13%)
	No milestone in 2017	-	Improved management practices that increase input use efficiency by 5% developed and disseminated at eight action sites (Nigeria, Senegal, Tanzania, Madagascar, Vietnam, Indonesia, Bangladesh, Myanmar)	-	1,943,311/ 15,000,000 (13%)
1.3	Benchmark indicators established for women farmers' labor use at seven key action sites	Reports, case study documentation, significant change stories, RICE Management Information System indicators, management option dissemination materials	Value chain actors including farmers and service providers using new mechanization options designed to increase women's labor productivity at seven action sites (Nigeria, Senegal, Tanzania, Vietnam, Indonesia, Bangladesh, Myanmar)	132,253/ 1,020,831 (13%)	845,000 / 6,500,000 (13%)
1.4	GHG emissions and carbon capture benchmarked at three action sites	Reports, case study documentation, significant change stories, RICE Management Information System indicators, management option dissemination materials	Improved rice management practices that reduce GHG by 5% disseminated at three action sites (Bangladesh, Philippines, Vietnam)	132,253/ 1,020,831 (13%)	910,000 / 7,000,000 (13%)
1.5	Baseline farming system description completed at six action sites	Reports, case study documentation, significant change stories, RICE Management Information System indicators, management option dissemination materials	Options to diversity rice farms with other crops, animals, or trees developed and disseminated at six action sites (Cote d'Ivoire, Madagascar, Tanzania, India, Bangladesh, Myanmar) (together with other CRPs)	345,622/ 2,667,786 (13%	6,760,000 / 52,000,000 (13%)
	No milestone in 2017	-	Diversified on-farm diets sourced through diversified farming systems at four action sites (Cote d'Ivoire, Madagascar, Bangladesh, Myanmar) (together with other CRPs)	-	2,202,419/ 21,600,000 (13%)
	No milestone in 2017	-	Increased capacity for innovation in partner research organizations	-	2,798,367/ 21,600,000 (13%)

RICE FP4: Global Rice Array in 2017

Milestone Description for 2017		Means of Verifying	For which 2022 outcomes	Milestone budget 2017 W1-2/total $ (%)	6-year outcome budget W1-2/total $ (%)
1.1	Global array delimited, baseline information including gender mapping (FP1) and historic climate and crop performance data gathered for crop-model assisted constraint mapping (current scenario)	Existence of rice array sites, data in open access data bases, reports, RICE Management Information System indicators	Predicted global rice production risks used to guide development and targeting of climate change-adapted technologies at least for the most vulnerable rice agroecosystems	424,952/ 1,398,942 (30%)	2,700,000 / 9,000,000 (30%)
1.2	Existing HTP field-based and specialized platforms upgraded and 60% of phenotyping sites managed by NARS identified	Existence of phenotyping platforms, phenotype-genotype data in open access data bases, reports, RICE Management Information System indicators	A functional global phenotyping network composed to 30% by non-CRP partners (including self-sponsored), and genetic donors (>10) and ideotypes (2-4) adopted by breeding programs to develop climate-smart rice varieties	904,267/ 2,976,850 (30%)	5,760,000 / 19,200,000 (30%)
	No milestone in 2017	-	Characterized pathogens populations and diversity used to predict varietal deployment for at least 3 major rice diseases	-	6,287,963/ 20,698,265 (30%)
1.3	Genomic information baseline obtained for populations to be phenotyped in CoA 4.2	Publications, reports, open access data bases (eg SNP Seek)	At least 5 major QTLs/genes that are stable across environment and management, for all four mega rice environments, are integrated in the respective varietal development pipelines	409,155/ 1,346,939 (30%)	2,610,000 / 8,700,000 (30%)
	No milestone in 2017	-	A functional rice data hub providing open access phenotypic and genotypic information and data analysis tools to global users	-	2,399,754/ 7,900,000 (30%)
1.4	Capacity development needs in pre-breeding and Big Data identified among partner research organizations	Reports, research projects at partner research organizations, RICE Management Information System updates	Increased capacity for innovation in pre-breeding and Big Data in partner research organizations	162,260/ 534,160 (30%)	1,020,000 / 3,400,000 (30%)

RICE FP5: New rice varieties in 2017

	Milestone Description for 2017	Means of Verifying	For which 2022 outcomes	Milestone budget 2017 W1-2/total $ (%)	6-year outcome budget W1-2/total $ (%)
1.1	5-10 donors/genes achieved from GRiSP in use by breeding programs screening of of 100 accessions from 3 K panel each year to identify donors/gene/QTLs for trait biology (biotic, abiotic) initiated, diversity analysis and system biology research initiated	Genes, markers etc described in publications and reports, open access data bases (eg SNP Seek)	Rice diversity in rice gene banks used globally for identification of traits and discovery of new genes	502,270/ 3,014,210 (16%)	3,120,000 / 19,500,000 (16%)
1.2	Based on GRiSP results, analysed and identified new breeding tools and resources for precision breeding, gene editing, genomic selection, breeding simulations, candidate genes (20), markers (16), reference panels (4)	Tools described in publications and reports, available online, documented use in reports	Novel tools for precision biotech breeding based on genetic diversity shared open access and globally	848,175/ 5,090,044 (16%)	5,264,000 / 32,900,000 (16%)
1.3	Upgraded breeding programs, and 10-20 lines from GRiSP with 5-10% higher yield nominated for release	Existence of lines and new varieties, line development and variety release tracking in RICE Management Information System	New rice varieties resulting in 1.3 % genetic gain in intensive systems	1,012,789/ 6,077,915 (16%)	6,288,000 / 39,300,000 (16%)
	No milestone in 2017	-	Rice varieties with 20, 15, 10% reduction in yield loss caused by factors induced by climate change, in mega deltas, rainfed lowlands, and uplands, respectively	-	6,798,675/ 40,800,000 (16%)
	No milestone in 2017	-	High quality and high nutritious rice varieties that are preferred by men and women farmers and consumers	-	1,083,122/ 6,500,000 (16%)
	No milestone in 2017	-	Prototype C4 rice lines with increased yield potential available	-	533,229/ 3,221,306 (16%)
1.4	Capacity development needs on modern rice breeding technologies identified among partner research organizations	Reports, research projects at partner research organizations, RICE Management Information System updates	Increased capacity on modern rice breeding technologies in partner research organizations	646,908/ 3,882,206 (16%)	4,000,000 / 25,000,000 (16%)

Table 2: RICE-FPs, SLOs, IDOs and sub-IDOs with proposed indicators

The indicators proposed in Table 2 are high-level development outcome indicators. In addition, and in consultation with donors/System Council, many of the indicators from CRP phase 1 can be monitored and reported, such as number of publications, data bases, data base usage, key technologies in development, in field testing, etc (see Annex 1 of the annual CRP phase 1 reports).

Most of the indicators in Table 2 are contributed to by a combination of flagship projects (FPs) working together. For example, most household surveys to collect indicators at farm level are done by FP1, while changes in the indicator values are driven by adoption of technologies developed and disseminated by other FPs; the development of improved rice varieties is contributed to by both FP 4 and 5, while large-scale distribution of new rice varieties is facilitated by the work on improved seed systems in FP1 (hence all contributing to indicators related to the sub-IDO 'increased genetic gain'); the development of improved crop and post-harvest management technologies is undertaken in FPs 3 and 2, respectively, but dissemination through partnership, multi-stakeholder platforms, and innovation systems is facilitated by FP1; validation of adoption rates of improved varieties, management and post-harvest technologies (developed in FPs 4-5, 3 and 2, respectively) and impact on income and livelihoods is undertaken in FP1.

SLO	IDO	Sub-IDO	Indicator	FP	Target 2017
Reduced poverty (SLO1)	1.3 Increased incomes and employment	1.3.2 Increased livelihoods opportunities	Diversity of farm activities (crop types, livestock and fish breeds, tree species); (survey annual rapid and 3-4y detailed)	FP1, FP3	New indicator from GRiSP; Baseline established
		1.3.3 Increased value capture by producers	Farmers' income, gender disaggregated where possible (survey annual rapid and 3-4y detailed)	FP1, FP3	Income by farmer adopters (GRiSP carry-over) increased by 5-10% over non-adopters at three-five key action sites
		1.3.4 More efficient use of inputs	Water- and nutrient-use efficiency (survey annual rapid and 3-4y detailed)	FP1, FP3	Water and/or nutrient efficiencies by farmer adopters (GRiSP carry-over) increased by 5% over non-adopters at three-five key action sites
	1.4 Increased productivity	1.4.1 Reduced pre and post-harvest losses, incl. climate change	Adoption rate of technologies that reduce postharvest loss in the rice value chain, gender disaggregated where possible (every 3-4 year)	FP2	Methodology established for tracking adoption rate of post-harvest technologies
		1.4.2 Closed yield gaps through improved agronomic and animal husbandry practice	National rice yields; yield at farm level (survey annual rapid and 3-4y detailed)	FP1, FP3	Maintain global average rice yield increase of 50 kg/ha/year; corroborated at farm level at key action sites
			Yield gap at farm level (survey annual rapid and 3-4y detailed)	FP1, FP3	Yield gap by farmer adopters (GRiSP carry-over) reduced by 5% over non-adopters at three-five key action sites

			Adoption rate of improved crop and natural resource management technologies (including adaptive to climate change, and mitigating GHG emissions), gender disaggregated where possible (survey annual rapid and 3-4y detailed)	FP1, FP3	5% adoption of GRiSP improved technologies (over baseline) at key action sites (eg through STRASA, CSISA, CORIGAP, FLAR etc; East India, Africa Hubs; FLAR countries Latin America)
		1.4.3 Enhanced genetic gains	Rice genetic gain (Annual)	FP4, FP5	1.1-1.3% genetic gain (yearly)
			Number of new rice varieties with high yield potential, tolerance to stress, high market quality, and/or high nutritious value released by national systems (Annual)	FP4, FP5	50-70
			Adoption rate of new rice varieties with high yield potential, tolerance to stress, high market quality, and/or high nutritious value, gender disaggregated where possible (national rice statistics, survey annual rapid and 3-4y detailed)	FP1, FP5	5% adoption of GRiSP improved varieties (over baseline) at key action sites. Globally: Annual adoption rate of rice varieties with GRiSP-center pedigree on 4-5 million hectares by around 7 million farmers (50% female)
		1.4.4 Increased conservation and use of genetic resources	Number of rice variety seed lots distributed globally (Annual)	FP 4, FP5	75,000-100,000 seed lots
Improved Food and Nutrition Security and health (SLO2)	2.1 Improved diets for poor and vulnerable people	2.1.2 Increased access to diverse nutrient-rich foods	Number of new rice varieties with high yield potential, tolerance to stress, high market quality, and/or high nutritious value released by national systems (Annual)	FP4, FP5	1-2 high zinc rice varieties
			Adoption rate of new rice varieties with high yield potential, tolerance to stress, high market quality, and/or high nutritious value, gender disaggregated where possible (survey annual rapid and 3-4y detailed)	FP1, FP5	Baseline to be established
			Diversity of farm activities (crop types, livestock and fish breeds, tree species); (survey annual rapid and 3-4y detailed)	FP1, FP3	New indicator from GRiSP; Baseline established
Improved natural	3.3 More sustainably managed agro-ecosystems	3.3.2 Enhanced adaptive capacity to climate risk	Number of new rice varieties with high yield potential, tolerance to stress, high market quality, and/or high nutritious value released by national systems (Annual)	FP4, FP5	25-35

			Adoption rate of new rice varieties with high yield potential, tolerance to stress, high market quality, and/or high nutritious value, gender disaggregated where possible (survey annual rapid and 3-4y detailed)	FP1, FP5	5% adoption of GRiSP improved varieties (over baseline) at key action sites (eg through STRASA, CSISA, CORIGAP, FLAR etc; East India, Africa Hubs; FLAR countries Latin America)
			Adoption rate of improved crop and natural resource management technologies (including adaptive to climate change, and mitigating GHG emissions), gender disaggregated where possible(survey annual rapid and 3-4y detailed)	FP1, FP3	5% adoption of GRiSP improved technologies (over baseline) at key action sites (eg through STRASA, CSISA, CORIGAP, FLAR etc; East India, Africa Hubs; FLAR countries Latin America)
			Diversity of farm activities (crop types, livestock and fish breeds, tree species); (survey annual rapid and 3-4y detailed)	FP1, FP3	New indicator from GRiSP; Baseline established
		3.3.3 Reduced net greenhouse gas emissions from agriculture, forests and other forms of land use	Adoption rate of improved crop and natural resource management technologies (including adaptive to climate change, and mitigating GHG emissions), gender disaggregated where possible (survey annual rapid and 3-4y detailed)	FP1, FP3	5% adoption of GRiSP improved technologies to reduce GHG emissions through adapted water management (over baseline) at three key action sites
Cross cutting issues	A.1 Mitigation and adaptation achieved	A.1.4 Enhanced adaptive capacity to deal with climate risk	Number of new rice varieties with high yield potential, tolerance to stress, high market quality, and/or high nutritious value released by national systems (Annual)	FP4, FP5	25-35
			Adoption rate of new rice varieties with high yield potential, tolerance to stress, high market quality, and/or high nutritious value, gender disaggregated where possible (survey annual rapid and 3-4y detailed)	FP1, FP5	5% adoption of GRiSP improved varieties (over baseline) at key action sites (eg through STRASA, CSISA, CORIGAP, FLAR etc; East India, Africa Hubs; FLAR countries Latin America)
			Adoption rate of improved crop and natural resource management technologies (including adaptive to climate change, and mitigating GHG emissions), gender disaggregated where possible(survey annual rapid and 3-4y detailed)	FP1, FP3	5% adoption of GRiSP improved technologies (over baseline) at key action sites (eg through STRASA, CSISA, CORIGAP, FLAR etc; East India, Africa Hubs; FLAR countries Latin America)
			Diversity of farm activities (crop types, livestock and fish breeds, tree species); (survey annual rapid and 3-4y detailed)	FP1, FP3	New indicator from GRiSP; Baseline established

	B.1 Equity and inclusion achieved	B.1.2 Technologies that reduce women's labor and energy	Number of manual labor days contributed by women farmers, or adoption rate of mechanization machinery (survey annual rapid and 3-4y detailed)	FP1, FP3	New indicator from GRiSP; Baseline established
		B.1.3 Improved capacity of women and youth to participate in decision making	Women farmer empowerment index (survey annual rapid and 3-4y detailed)	FP1	New indicator from GRiSP; Baseline established
	C.1 Enabling environment improved	C.1.1 Increased capacity of beneficiaries to adopt research outputs	Adoption rate of new rice varieties with high yield potential, tolerance to stress, high market quality, and/or high nutritious value, gender disaggregated where possible (national rice statistics, survey annual rapid and 3-4y detailed)	FP1, FP5	5% adoption of GRiSP improved varieties (over baseline) at key action sites. Globally: Annual adoption rate of rice varieties with GRiSP-center pedigree on 4-5 million hectares by around 7 million farmers (50% female)
			Adoption rate of improved crop and natural resource management technologies (including adaptive to climate change, and mitigating GHG emissions), gender disaggregated where possible (survey annual rapid and 3-4y detailed)	FP1, FP3	5% adoption of GRiSP improved technologies (over baseline) at key action sites (eg through STRASA, CSISA, CORIGAP, FLAR etc; East India, Africa Hubs; FLAR countries Latin America)
			Adoption rate of technologies that reduce postharvest loss in the rice value chain, gender disaggregated where possible (every 3-4 year)	FP2	New indicator from GRiSP; Baseline established
	D.1 National partners and beneficiaries enabled	D.1.2 Enhanced individual capacity in partner research organizations through training and exchange	Number of male and female interns, and MS and PhD scholars in RICE (annual)	All FPs, but all reported under FP1	150-175 female short-term trainees; 200-225 male short-term trainees (BsC, MsC, PhD, interns) enrolled
		D.1.4 Increased capacity for innovation in partner development organizations and in poor and vulnerable communities	Number of innovation platforms, learning alliances, and other multi-stakeholder platforms (annual)	FP1, FP2, FP3	3-5 at end of GRiSP

RTB (Roots, Tubers and Bananas)

FP1-Discovery research for enhanced utilization of RTB genetic resources

ID/ Source[34]	Milestone description for 2017	Means of verifying	For which outcomes (2022)	Budget 2017 (USD) W1-2 / total (%)	6-year (USD) W1-2 / total (%)
1.1 PIM TDA	Advanced tools applied for genomic mapping and editing for all RTB crops	Journal articles, Working papers	Outcome 1,1: For each RTB crop, populations with at least 3 end-users preferred traits and adapted to 2 targeted regions are available (For more details please refer to Table FP1,4)	874,526 / 3,015,606 (29%)	5,800,708 / 20,002,442 (29%)
1.2 PIM TDA	Participatory methods for trait definition and selection (including at least 30% of female participants) used in at least (5) RTB/partners joint assessments	Journal articles, Working papers, Annual reports of relevant stakeholders	Outcome 1,2: Across RTB crops, average 25% reduction of time needed for traits discovery and incorporation into breeding pipelines	1,311,789 / 4,523,409 (29%)	8,701,062 / 30,003,662 (29%)
1.3 PIM TDA	Best practices and existing systems for assessing and monitoring the conservation status of RTB wild relatives and landraces identified	Study report	Outcome 1,3: Conservation status of wild relatives and landraces of at least 3 RTB crops improved in 3 key hotspots	655,894 / 2,261,705 (29%)	4,350,531 / 15,001,831 (29%)
1.4 FPN[35]	SMART targets for traits linked with enhanced resilience of RTB populations to climate shocks formulated and included in breeding program designed for at least 2 RTB crops	Working papers, RTB internal documents	Outcome 1,4: At least 20% of newly developed RTB breeding populations with enhanced resilience to climatic shocks available for testing in FP2	655,894 / 2,261,705 (29%)	4,350,531 / 15,001,831 (29%)
1.5 PIM TD	Breeding community of practice established in collaboration with at least 15 stakeholders in 6 countries	Annual reports of relevant stakeholders	Outcome 1,5: Collaboration for more effective breeding enhanced through a breeding community of practices including at least 40 stakeholders in 10 countries	437,263 / 1,507,803 (29%)	2,900,354 / 10,001,221 (29%)
1.6 FPN[36]	Trainings for breeders and geneticists on gender roles and consumer preferences organized	Training reports	Outcome 1,6: Enhanced capacity in genomic selection and advanced breeding methods of at least 150 R&D partners, of which at least 30% are female, through short and long term trainings	437,263 / 1,507,803 (29%)	2,900,354 / 10,001,221 (29%)
TOTAL				4,372,629 / 15,078,031 (29%)	29,003,540 / 100,012,208 (29%)

[34] Sources: PIM TD – Performance Indicators Matrix Table D; PIM TDA – PIM TD Adjusted; FPN – CRP Full Proposal Narrative and Annexes

[35] See Section: 2.1.1.8 CLIMATE CHANGE

[36] See Section: 1.0.10 CAPACITY DEVELOPMENT – Table on CapDev Actions

FP2-Adaptive productive varieties and quality seed of RTB crops

ID/ Source[37]	Milestone description for 2017	Means of verifying	For which outcomes	Budget 2017 (USD) W1-2 / total (%)	6-year (USD) W1-2 / total (%)
2.1 PIM TDA	Rapid multiplication techniques for seed/planting material validated for at least 2 RTB crops and framework to support best fitting options for different seed multipliers categories developed	Program and Project Reports	Outcome 2,1: 20,000,000 people (4,000,000 HH), of which 50% are women, increased their annual income by increasing RTB sales and diversifying market strategies	825,066 / 5,893,325 (14%)	5,472,639 / 39,090,282 (14%)
2.2 PIM TD	Crop-specific evidences collected on the effect of genotype, management and environment on seed degeneration rate	Scientific publications and reports	Outcome 2,2: At least 5,000,000 HH increased their annual RTB yield by at least 10%	2,090,166 / 14,929,758 (14%)	13,864,020 / 99,028,716 (14%)
2.3 PIM TDA	Gender-differentiated users-need and preferences for trait selection assessed in 4 countries and results communicated to orient breeding programs	Scientific publications and reports, Annual reports of relevant stakeholders	Outcome 2,3: Targeted breeding programs increased by 10% the diversity of the genetic base used (e,g, number of banana wild species used as parental lines)	275,022 / 1,964,442 (14%)	1,824,213 / 13,030,094 (14%)
2.4 PIM TDA	At least one RTB candidate variety rich in vitamins and/or micronutrients proposed in (10) target countries for national trials	Annual reports of national breeding programs and other relevant partners	Outcome 2,4: Annual production of at least one nutrient-rich RTB crop increased by 5-10% in 10 targeted countries	880,070 / 6,286,214 (14%)	5,837,482 / 41,696,301 (14%)
2.5 PIM TDA	Climate responsive breeding targets developed for 3 RTB crops in at least 5 target environments	Scientific publications and reports	Outcome 2,5: Capacity to deal with climate risks and extremes increased for at least 1,000,000 HH	275,022 / 1,964,442 (14%)	1,824,213 / 13,030,094 (14%)
2.6 PIM TD	Baseline of gender roles in seed multiplication and/or crop production and/or varietal selection available in five countries/crops	Scientific publications and reports	Outcome 2,6: At least 35% increase in number of female and young beneficiaries of at least 500,000 HH perceive to have better control over assets and resources	220,017 / 1,571,553 (14%)	1,459,371 / 10,424,075 (14%)
2.7 PIM TDA	Regulatory frameworks for seed production and seed quality control (including QDS) under discussion in 5 countries	Program and Project Reports, Annual reports and official documents of relevant stakeholders	Outcome 2,7: Regulatory frameworks for seed production and seed quality control (including QDS) under implementation in10 countries	385,031 / 2,750,219 (14%)	2,553,898 / 18,242,132 (14%)
2.8 PIM TD	75 individuals (50% female) trained through long term programs (e.g. MSc and PhD students)	Program and Project Reports, Thesis	Outcome 2,8: Every year, 8,000 R&D stakeholders (50% female) trained through short term programs on designing and implementing smallholder-oriented breeding programs and sustainable seed systems	550,044 / 3,928,884 (14%)	3,648,426 / 26,060,188 (14%)
TOTAL				5,500,437 / 39,288,836 (14%)	36,484,263 / 260,601,882 (14%)

[37] Sources: PIM TD – Performance Indicators Matrix Table D; PIM TDA – PIM TD Adjusted; FPN – CRP Full Proposal Narrative and Annexes

FP3-Resilient RTB crops

ID/ Source[38]	Milestone description for 2017	Means of verifying	For which outcomes	Budget 2017 (USD) W1-2 / total (%)	6-year (USD) W1-2 / total (%)
3.1 PIM TDA	Baseline of pest incidence and damage available for 4 countries	Scientific publications and reports	Outcome 3.1: In areas affected by pests and diseases, RTB yield restored to pre-infection conditions for at least at least 1,500,000 farmer HH, of which at least 25% are female headed households	1,496,542 / 7,876,539 (19%)	9,926,529 / 52,244,887 (19%)
3.2 PIM TD	Global Pest Risk Analysis (PRA) available for at least 3 target RTB pests and diseases	Scientific publications and reports			
3.3 PIM TDA	At least 5 gender-sensitive and site-specific practices for crop, soil fertility and water management tested under diverse agro-ecologies	Scientific publications and reports	Outcome 3.2: 1,800,000 ha of current RTB production area converted to sustainable cropping systems	1,039,266 / 5,469,819 (19%)	6,893,423 / 36,281,172 (19%)
3.4 PIM TD	Downscaled climate change models linked to insect disease modelling for at least 5 major pest/regional combinations	Scientific publications, databases/models and reports	Outcome 3.3: Capacity to deal with climate risks and extremes increased for at least 1,000,000 HH	831,412 / 4,375,855 (19%)	5,514,738 / 29,024,937 (19%)
3.5 PIM TD	Gender differentiated needs assessment of capacity development available in at least 8 pest/country combinations	Scientific publications and reports	Outcome 3.4: New technologies and practices have been equally adopted women and men farmers	207,853 / 1,093,964 (19%)	1,378,684 / 7,256,234 (19%)
3.6 PIM TD	Cost effective diagnostic tools and protocols developed for at least 3 key pests and diseases	Scientific publications and reports	Outcome 3.5: 25 National and 5 regional plant protection agencies with strategies for containment and management under implementation	290,994 / 1,531,549 (19%)	1,930,158 / 10,158,728 (19%)
3.7 PIM TD	Engagement of stakeholders in impact pathway analysis for ICM/IPDM in at least 3 cluster/country combination	Program and Projects reports	Outcome 3.6: Growing number of extension services (governmental org., NGOs and private sector) providing advice on improved ICM and IPDM increased	290,994 / 1,531,549 (19%)	1,930,159 / 10,158,729 (19%)
TOTAL				4,157,062 / 21,879,274 (19%)	27,573,691 / 145,124,687 (19%)

[38] Sources: PIM TD – Performance Indicators Matrix Table D; PIM TDA – PIM TD Adjusted; FPN – CRP Full Proposal Narrative and Annexes

FP4-Nutritious RTB food and value added through postharvest innovation

ID/ Source[39]	Milestone description for 2017	Means of verifying	For which outcomes	Budget 2017 (USD) W1-2 / total (%)	6-year (USD) W1-2 / total (%)
4.1 PIM TD	RTB value chains, including processing supply chains and fresh market chains, analyzed in 5 countries, with a gender-sensitive approach, to identify opportunities for products improvement/ development	Scientific publications and reports	Outcome 4.1: 700,000 households, 25% of which are female headed, have increased their income by 15-20% by increasing and diversifying RTB sales (food, feed, industrial raw material and seeds)	358,365 / 3.257.864 (11%)	2,377,027 / 21,609,333 (11%)
4.2 PIM TD	Baseline of efficiencies and processing losses available for 5 local SME types in 3 countries	Scientific publications and reports	Outcome 4.2: 20,000 small scale processors, 30 % of which are female, reduced water- and energy-related production costs by 15-20% in cassava sector with growing spillover in other RTB crops	358,365 / 3.257.864 (11%)	2,377,027 / 21,609,333 (11%)
4.3 PIM TD	RTB value chains analyzed in 5 countries to identify priority entry points for reducing post-harvest losses, improving storage, and stepping up waste utilization	Scientific publications and reports	Outcome 4.3: Post-harvest physical and quality losses reduced in at least 10 countries through better post-harvest management, improved storage, and utilization of waste across RTB crops	268,774 / 2.443.398 (11%)	1,782,770 / 16,207,000 (11%)
4.4 PIM TD	For ongoing dissemination of OFSP, biofortified cassava, and other nutritious RTB crops: nutrition education/counseling and SBCC methodologies, partnerships, metrics and results documented and analyzed in 10 countries	Scientific publications and reports	Outcome 4.4: Diet quality indices increased by 20% for at least 2,000,000 farmer households and urban/rural consumers	447,956 / 4.072.330 (11%)	2,971,283 / 27,011,666 (11%)
4.5 PIM TD	Gender analysis of RTB value chains and RTB post-harvest intervention approaches documented in 4 countries	Scientific publications and reports	Outcome 4.5: At least 35% increase in number of women and youth beneficiaries in at least 200,000 HH who perceive to have better control over assets and resources	143,346 / 1.303.146 (11%)	950,811 / 8,643,733 (11%)
4.6 PIM TDA	RTB crops and products compliant with national nutrition and safety standards for inclusion in mainstream national nutrition programs in at least 2 countries	Study reports, Annual reports of relevant stakeholders, projects reports	Outcome 4.6: Food-based nutrition programs/ initiatives promoting RTB crops under implementation in at least 10 countries	107,510 / 977.359 (11%)	713,108 / 6,482,800 (11%)
4.7 FPN[40]	Partnership models and value chain approaches tested to strengthen institutional capacity for scaling	Program and Projects reports	Outcome 4.7: 60 development-focused organizations, including women's networks and alliances, having increased their capacity for innovation (e.g. enhanced human capital and improved collaboration network in relevant domains) to scale up fuller utilization of RTB	107,510 / 977.359 (11%)	2,377,027 / 6,482,800 (11%)
TOTAL				1,791,825 / 16,289,321 (11%)	11,885,133 / 108,046,665 (11%)

[39] Sources: PIM TD – Performance Indicators Matrix Table D; PIM TDA – PIM TD Adjusted; FPN – CRP Full Proposal Narrative and Annexes

[40] See Section: 1.0.10 CAPACITY DEVELOPMENT – Table on CapDev Actions

FP5-Improving livelihoods at scale

ID/ Source[41]	Milestone description for 2017	Means of verifying	For which outcomes	Budget 2017 (USD) W1-2 / total (%)	6-year (USD) W1-2 / total (%)
5.1 PIM TDA	Trade-offs and synergies among different SDI options for market-driven household income improvement in RTB-based farming systems analyzed in at least 2 target countries	Scientific publications and reports	Outcome 5.1: Income increased by 20% for at least 550,000 HH	736,533 / 2.946.134 (25%)	4,885,409 / 19,541,634 (25%)
5.2 PIM TDA	SDI options identified with farmers and farm communities and expected effects on whole-farm productivity assessed in at least 2 countries	Scientific publications and reports	Outcome 5.2: Whole-farm productivity increased by 25% for at least 1,000,000 HH	491,022 / 1.964.089 (25%)	3,256,939 / 13,027,756 (25%)
5.3 PIM TDA	Options for whole-diets improvements in RTB-related farming systems identified in 2 countries	Scientific publications and reports	Outcome 5.3: Diet quality indices increased by 20% for at least 300,000 farmer households	491,022 / 1.964.089 (25%)	3,256,939 / 13,027,756 (25%)
5.4 PIM TDA	In at least 3 RTB-related farming systems, effects of selected SDI approaches on soil water and nutrient cycles assessed and documented	Scientific publications and reports	Outcome 5.4: Improved soil management practices adopted on at least 200,000 ha cultivated by smallholder farmers	491,022 / 1.964.089 (25%)	3,256,939 / 13,027,756 (25%)
5.5 PIM TD	Households options for improving their resilience to climate risks and extremes assessed in RTB-related farming systems in 5 countries	Scientific publications and reports	Outcome 5.5: Capacity to deal with climate risks and extremes increased for at least 500,000 HH	491,022 / 1.964.089 (25%)	3,256,939 / 13,027,756 (25%)
5.6 PIM TDA	Gender-responsive methods and tools for assessing SDI options for market-driven household income improvement developed	Working papers, Manuals and training materials	Outcome 5.6: At least 35% increase in number of female and young beneficiaries of at least 200,000 HH perceive to have better control over assets and resources	245,511 / 982.045 (25%)	1,628,470 / 6,513,878 (25%)
5.7 FPN[42]	Tools and methods for CapDev on gender responsive and transformative approaches developed	Working papers, Training materials, Project and Program reports	Outcome 5.7: RTB delivery flagships and at least 55 research and development partner organizations with more gender-responsive planning and implementation processes, reflected in at least 5 additional collaborative arrangements with public sector and civil society organizations supporting gender transformation	245,511 / 982.045 (25%)	1,628,470 / 6,513,878 (25%)
5.8 PIM TD	At least 1 systems innovation coalition established in 5 countries selected for site integration and problem identification and prioritization exercises conducted	Annual reports of Innovation Coalitions and relevant stakeholders	Outcome 5.8: At least 66 cases where RTB crops/technologies are newly included in policies or programs executed by government agencies, NGOs, and/or private sector	491,022 / 1.964.089 (25%)	3,256,939 / 13,027,756 (25%)
5.9 PIM TD	At least 4 ex post impact studies completed	Project and Program reports	Outcome 5.8: At least 66 cases where RTB crops/technologies are newly included in policies or programs executed by government		

41 Sources: PIM TD – Performance Indicators Matrix Table D; PIM TDA – PIM TD Adjusted; FPN – CRP Full Proposal Narrative and Annexes

42 See Section: ANNEX 2: RTB Capacity Development (CapDev)

ID/ Source[41]	Milestone description for 2017	Means of verifying	For which outcomes	Budget 2017 (USD) W1-2 / total (%)	6-year (USD) W1-2 / total (%)
			agencies, NGOs, and/or private sector		
5.10 PIM TDA	20 individuals (50% female) trained through long term programs (e.g. MSc and PhD students)	Project and Program reports	Outcome 5.9: At least 1,500 research/development staff in RTB and in mixed-type partner organizations across prime target countries with strengthened research and innovation capacities including gender-responsive and transformative research	736,533 / 2.946.134 (25%)	4,885,409 / 19,541,634 (25%)
5.11 PIM TD	Comparative assessment of scaling models (desk study)	Scientific publications and reports	Outcome 5.10: At least 5 partnerships and scaling models tested in a minimum of 5 target countries and adjusted to be fit for purpose	491,022 / 1.964.089 (25%)	3,256,939 / 13,027,756 (25%)
TOTAL				4,910,223 / 19,640,893 (25%)	32,569,390 / 130,277,560 (25%)

TOTAL BUDGET 2017

	USD	%
FP1-Discovery research for enhanced utilization of RTB genetic resources	**15,078,031**	**13,44%**
FP2-Adaptive productive varieties and quality seed of RTB crops	**39,288,836**	**35,02%**
FP3-Resilient RTB crops	**21,879,274**	**19,50%**
FP4-Nutritious RTB food and value added through postharvest innovation	**16,289,321**	**14,52%**
FP5-Improving livelihoods at scale	**19,640,893**	**17,51%**
FPs Total	**112,176,354**	**100,00%**
Management and support cost	**2,000,000**	
Grand Total	**114,176,354**	

	USD	%
W1/2	**22,500,000**	**20%**
W3	**62,675,111**	**55%**
Bilateral	**29,001,242**	**25%**
TOTAL	**114,176,354**	**100%**

Table 2: RTB-FPs, SLOs, IDOs and sub-IDOs with proposed indicators

SLOs, IDOs and sub-IDOs, RTB-FPs contribution: proposed indicators and targets

SLOs	IDOs	Sub IDOs	FPs contribution					Indicators proposed	Annual targets[43]					
			1	2	3	4	5		1	2	3	4	5	6[44]
Reduced Poverty (SLO1)	1.4 Increased incomes and employment	1.3.1 Diversified enterprise opportunities		x		x	x	# of small and medium enterprises (SMEs) in seed and processing sectors reached through RTB and partners' initiatives informed by RTB research [b]	2K		10K			25K
		1.3.4 More efficient use of inputs				x		# of SMEs who adopted more efficient RTB post-harvest technologies and practices [b]			6K			20K
	1.3 Increased productivity	1.4.1 Reduced pre- and -post production losses, including those caused by climate change			x	x		# of farmer households in RTB farming systems who adopted sustainable management practices [b]			0,5 Mo			1,5 Mo
								# of SMEs who adopted more efficient post-harvest technologies and practices [b]			6K			20K
		1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices		x	x		x	# of farmer households who adopted quality planting material (improved RTB varieties or clean seeds) [b]			2,0 Mo			5,0 Mo
								# of farmer households in RTB farming systems who adopted sustainable management practices [b]			0,5 Mo			1,5 Mo
								Crop yield gap [a]						*NB*
		1.4.3 Enhanced genetic gain	x	x				Increase in yield under researcher controlled trials and other changes in quality parameters [c]						*NB*
		1.4.4 Increased conservation and use of genetic resources	x	x				# of RTB diversity key hotspots with improved conservation status of wild relatives and landraces [d]			2			5
Improved Food and Nutrition Security for Health (SLO2)	2.1 Improved diets for poor and vulnerable people	2.1.1 Increased availability of diverse nutrient-rich foods		x				# of countries with increased production (>5%) of targeted RTB crops [d]			3			10
		2.1.3 Optimized consumption of diverse nutrient-rich foods				x	x	# of farmer households who adopted RTB varieties rich in vitamins and/or micronutrients [d]			0,5 Mo			2 Mo

[43] Targets and proposed contribution to target by [flagship x sub-IDO] will need to be defined as indicative information by flagship science leaders

[44] Source: RTB Full proposal

SLOs	IDOs	Sub IDOs	FPs contribution					Indicators proposed	Annual targets[43]					
			1	2	3	4	5		1	2	3	4	5	6[44]
Improved Natural Resources Systems and Ecosystems Services (SLO3)	3.2 Enhanced benefits from ecosystem goods and services	3.2.2 Agricultural systems diversified and intensified in ways that protect soils and water					x	# of farmers in RTB farming systems who adopted sustainable management practices [b]			0,5 Mo			1,5 Mo
		3.2.3 Enrichment of plant and animal biodiversity for multiple goods and services	x					% of newly developed RTB breeding populations with enhanced resilience to climatic shocks available for testing in FP2 [d]	2		10			20
	3.3 More sustainably managed agro-ecosystem	3.3.1 Increased resilience of agro-ecosystems and communities, especially those including smallholders			x			# of National and regional plant protection agencies with strategies for containment and management of pests and diseases developed using PRA and Climate Change scenarios [d]	4		10			30
		3.3.2 Enhanced adaptive capacity to climate risks	x	x	x		x	% of RTB-developed technologies and practices assessed in terms of adaptation to future climates [d]	10		30			60
Climate change (CC)	A.1 Mitigation and adaptation achieved	A.1.4 Enhanced capacity to deal with climatic risks and extremes	x	x	x		x							
Gender and youth (CC)	B.1 Equity and inclusion achieved	B.1.1 Gender-equitable control of productive assets and resources		x	x	x	x	Increase (%) of female and young beneficiaries who perceive to have better control over assets and resources [d]		5		15		35
		B.1.3 Improved capacity of women and young people to participate in decision-making					x	# of partner organizations with more gender-responsive planning and implementation processes [d]		10		25		55
								# of collaborative arrangements with public sector and civil society organizations supporting gender transformation [d]		1		3		5
Policies and Institutions (CC)	C.1 Enabling environment improved	C.1.1 Increased capacity of beneficiaries to adopt research outputs					x	# of policies, regulatory frameworks or programs leaded by government agencies, NGOs, and/or private sector in relevant topics (e.g. RTB seed systems, quarantine and protocols for safe germplasm movements, agriculture for nutrition initiatives, standards for processed RTB-based food) that have included RTB research results in their design [d]		15		35		66
		C.1.3 Conducive agricultural policy environment		x	x	x								
	D.1 National partners and	D.1.1 Enhanced institutional capacity of	x				x	# multi-stakeholder partnerships and scaling models under implementation [d]		1		3		5

SLOs	IDOs	Sub IDOs	FPs contribution					Indicators proposed	Annual targets[43]					
			1	2	3	4	5		1	2	3	4	5	6[44]
Capacity development (CC)	beneficiaries enabled	partner research organizations												
		D.1.2 Enhanced individual capacity in partner research organizations through training and exchange	x	x			x	# short and long term trainings and trainees (disaggregated by topic and sex) [d]						
		D.1.4 Increased capacity for innovation in partner development organizations and in poor and vulnerable communities			x	x	x	# number of extension services (governmental org., NGOs and private sector) that are using RTB research results for providing advice on ICM and IPDM [d]						
								# of development-focused organizations, including women's networks and alliances, having increased their capacity for innovation (e.g. enhanced human capital and improved collaboration network in relevant domains) to scale up fuller utilization of RTB [d]		10		30		60

Sources

[a] CRP Full Proposal. Annex 5 - Results-based management strategy for RTB
[b] Indicator for CRP level goals. See RTB Full proposal, section: 1.0.2 GOALS, OBJECTIVES, TARGETS
[c] CRP Full Proposal. Table FP1.4. Overview of target traits for breeding of RTB crops
[d] Indicator for 2022 Outcomes. See RTB PIM Table B

Note
Indicators related to adoption rates will be calculated based on regular adoption studies realized by RTB, ISPC and other partner organizations. Targets and actual value will be presented every 3 years.

Indicators related with changes in skills and practices at the next-user level (e.g. NARS, government agencies, NGOs, private sector organizations) will be monitored and reported every year when the information will be provided directly by scientists and projects staff and every 2 years when data collection will be based on surveys.

WHEAT

WHEAT FP1: Enhancing wheat's R4D strategy for impact.

Milestone Description for 2017[45]		Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 ($ million) / total (%)[46]
1.1	Ex-ante impact assessments identify potential opportunities, threats and game changes for WHEAT to support outcomes 1.1, 1.2, 1.3	Supporting publications: Reports, policy briefs, dissemination documentation	Last mile provider (extension partners, farmer organization, community-based organizations, private sector) increased access and promotion of technologies to farmers	$337,269	2.29 / 4.41 (52%)
1.2	Adoption and impact studies on technologies– rolling plan based on progress of technologies along the theory of change	Reports, policy briefs, dissemination documentation	National and regional policy makers improved policy-making and increased investment based on evidence	$337,269	2.29 / 4.41 (52%)
1.3	Gender / social inclusion lenses will be applied to 2 to 4 WHEAT innovation pipelines and assessments	Reports, global recognized women empowerment indicators, case studies	Farmers have greater awareness and access to, and increased adoption and adaptation of improved technologies	$604,714	4.11 / 7.91 (52%)
1.4	Preparation and roll-out of rapid value chain assessments with proper gender lens conducted to identify opportunities and bottlenecks in WHEAT	Perform, review annual portfolio analysis Supporting publications (foresight; ex ante; impact pathways; value chains) publicized	Farmers have greater awareness and access to, and increased adoption and adaptation of improved technologies	$604,714	4.11 / 7.91 (52%)
				Total: $1,883,967	Total: 12.81 / 24.51 (52%)

[45] From WHEAT Full Proposal Table D
[46] From WHEAT Full Proposal Table B

WHEAT FP2: Novel diversity and tools for improving genetic gains and breeding efficiency.

Milestone Description for 2017[47]		Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 ($ million)/ total (%)[48]
1.1 2.1	Increased use of open-access databases to store and share WHEAT data.	Database usage/user monitoring (e.g. platforms available/used, open access databases, reports)	Crop researchers worldwide increased use of novel germplasm and tools for validation, refinement and development of products	$532,886	3.62 / 10.35 (35%)
2.2	New alleles for heat and drought, other climate change-related traits identified, validation work initiated, and incorporated into the breeding pipeline	Reports. Number of source germplasm available for use in breeding for each trait.	Crop researchers world-wide and across disciplines access more novel germplasm and tools	$1,065,772	7.24 / 20.71 (35%)
2.3	Greater number of experimental, pre-bred germplasm lines, incorporating enhanced drought, heat and yellow rust tolerance or resistance, available for evaluation and use by partners.	Number of pre-bred materials grown by partners, and number of partners participating and returning data about performance of the materials.	Breeders develop improved varieties more efficiently through greater access and use of documented germplasm and tools	$530,602	3.61 / 10.31 (35%)
2.4	Improved precision of GS models using high throughput phenotyping and/or environmental data	GS modeling outputs matched to phenotypic data	Crop researchers worldwide increased use of novel germplasm and tools for validation, refinement and development of products	$532,886	3.62 / 10.35 (35%)
				Total: $2,662,146	Total: 18.10 / 51.53 (35%)

[47] From WHEAT Full Proposal Table D
[48] From WHEAT Full Proposal Table B

WHEAT FP3: Better varieties reach farmers faster.

Milestone Description for 2017[49]		Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 / total (%)[50]
1.1 2.1	*No 2017 milestone, but 2018 is:* National regulators of variety release and seed supply provide enabling environment to speed up release of improved varieties and farmers' access to quality seed, in 2-3 target countries	Policy change tracking	National regulators of crop variety release improved enabling environment to speeding-up release of improved varieties (merge with 3.5 National partners increased improved variety release)	$1,053,413	7.16 / 16.6 (43%)
3.2	*No 2017 or 2018 milestone, but 2019 is:* Greater farmer adoption of released varieties (based on CGIAR research) in specific WHEAT target countries, compared to 1994-2014 average	Release and adoption data, via national focal point network, documented in wheatatlas.org	Non-and –subsistence farmers adopted improved varieties	$702,275	4.77 / 11.1 (43%)
3.3	*No 2017 milestone, but 2018 is:* Improved knowledge of genetic basis of climate change adaptation on global scale thru combination of GS, platforms, unified databases	Effect of applying genomic tools to improve CC-relevant traits / Rate at which high-quality phenotypic data, associated germplasm with heat, drought tolerance available for wheat breeders globally	Partner breeding teams improved breeding processes by adopting new technologies, methodologies, genetic resources	$1,755,688	11.94 / 27.77 (43%)
3.4	Initiate Global Pests & Diseases Observatory with user inputs, to monitor, assess races/biotypes of key diseases and pests	Number of cooperators (data contributors) and users	Partner breeding teams increased multidisciplinary and multi-institutional collaboration (merge with: Partner breeding teams improved breeding processes by adopting new technologies, methodologies, genetic resources)	$702,275	4.77 /11.1 (43%)
1.1 2.5	*No 2017 milestone, but 2018 is:* Develop wheat with enhanced healthy properties: reduce chronic diseases risk (incl high content of dietary fiber to address obesity)	With A4NH: Verify if consumption of wheat varieties with enhanced nutritional and healthy components reduces malnutrition rates, cardiovascular diseases, type 2 diabetes, cancer in CGIAR target geographies	Farmer organizations increased access and promotion of adoption of improved varieties to farmers (gender and other social identities as customer attributes in relation to seed diffusion interventions, including varietal promotion and replacement)	$1,053,413	7.16 / 16.66 (43%)
3.6	All molecular markers linked to traits of agronomic importance converted onto SNP-based platforms. SNP-based low and high density genotyping hubs established	Effects of markers and genes linked to target traits in diverse genetic backgrounds; rates of genetic gain by incorporating and combining new alleles (genetic studies) / Change in cultivar replacement rates	Partner breeding teams improved exchange and utilization of germplasm and data	$702,275	4.77 / 11.1 (43%)
3.7	New options, approaches piloted to fast track release of varieties, accelerated seed multiplication and dissemination	Change in sustainable farmer access to improved seeds; farmer uptake of seeds (vs own); Number of farmers with access to quality seeds / change in degree of commercialisation of seed sector (public, private) / change in scaling-up of new technologies and practices through Agricultural Innovation Platforms, innovation hubs	Extension partners (universities, national /state / provincial governments) increased access and promotion of adoption of improved varieties to farmers, and increased investment in emerging private sector circumstances (merge with: 3.8 Farmer organizations increased access and promotion of adoption of improved varieties to farmers)	$1,053,413	7.16 / 16.66 (43%)
				Total: $7,022,753	Total: 47.77 / 43%

[49] From WHEAT Full Proposal Table D
[50] From WHEAT Full Proposal Table B

WHEAT FP4: Sustainable intensification of wheat-based farming systems

Milestone Description for 2017[51]		Means of Verifying[1]	For which 2022 outcomes[1]	Budget 2017	6-year W1-2 ($ million) / total (%)[52]
4.1	Multi-criteria assessments taking into account environmental and social acceptability aspects, based on standardized protocols for multi-criteria 'step' assessments of advanced crop management packages (not individual technologies)	Cchange in: Food sufficiency & security; - Income & Assets; - Investment & ROI of (system) technology	4.7 Actors in SI increased participation in feedback loops via monitoring, evaluation and sharing of lessons learned & 4.8 Actors in SI increased consideratioC58:D59n and integration of gender and social inclusion into policies, processes and practices	$250,907	1.71 / 15.17 (11%)
4.2	Build skills necessary to monitor soil, crop parameters (to evaluate crop management practices)	CRP Commissioned External Evaluation; farmer organizations & innovation platforms: Change in degree of linkages to (private, public sector) input suppliers & output buyers	4.6 Private sector (and public sector) increased provision of services to smallholder farmers to increased their ability to adopt SI practices and products & 4.4 NARS increased use of participatory approach in system research, enhanced capacity and knowledge to create awareness and develop improved technologies	$250,512	1.70 / 15.15 (11%)
4.3	Water-saving benefits of farmers using most water-efficient cultivars and optimum agronomy and irrigation systems validated for 2 WHEAT target regions Increase resource use efficiencies (irrigation water, N, P) while maintaining high, stable yields: NW Mexico, the Indo-Gangetic Plains	% change in nitrate losses, P losses % change in herbicide/pesticide use per unit of production % change from baseline for fertilizer N consumption, soil C indices, erosion indices, soil biological properties SDSN 15: NUE in food systems (FAO, IFA as lead monitoring) SDSN 16: Crop water productivity (tons of harvested product per unit irrigation water, FAO lead monitor Change in nutrient, water & labor use	4.9 Smallholder farmers increased their capacity to adopt and adapt SI practices and products (associated with crosscutting sub-IDO) & 4.6 Private sector (and public sector) increased provision of services to smallholder farmers to increased their ability to adopt SI practices and products & 4.3 Local and regional actors (NGOs, farmer groups, extension agents, private sector) increased promotion of SI practices and products 4.2 Donors, policy-makers (local, regional and national), advocacy NGOs and private sector increased investment and improved enabling environment for adoption of SI practices and products & 4.3 Local and regional actors (NGOs, farmer groups, extension agents, private sector) increased promotion of SI practices and & 4.6 Private sector (and public sector) increased provision of services to smallholder farmers increased their ability to adopt SI practices and products	$250,907	1.71 / 15.17 (11%)

[51] From WHEAT Full Proposal Table D
[52] From WHEAT Full Proposal Table B

4.4	Increased adoption of combinations of SI strategies, technologies in specific target geographies compared to 2016 Better understand smallholder farming systems diversity and trajectories (which drive adoption) and feedback between farming systems and their operating landscapes	CRP Commissioned External Evaluation, project/donor-driven impact studies; national partner self-assessments Farm/System scale: System health (nutrient cycling, biodiversity, biomass) Landscape scale: Land-use change; Soil loss/ degradation; Soil health (AFSIS); - Net productivity (vegetation, biomass); Ecosystem services (biodiversity, water); Documentation review, Survey of private sector CRP Commissioned External Evaluation	4.7 Actors in SI increased participation in feedback loops via monitoring, evaluation and sharing of lessons learned & 4.8 Actors in SI increased consideration and integration of gender and social inclusion into policies, processes and practices & 4.10 Smallholder farmers adopted and adapted SI practices and products 4.2 Donors, policy-makers (local, regional and national), advocacy NGOs and private sector increased investment and improved enabling environment for adoption of SI practices and products & 4.3 Local and regional actors (NGOs, farmer groups, extension agents, private sector) increased promotion of SI practices and products & 4.6 Private sector (and public sector) increased provision of services to smallholder farmers to increased their ability to adopt SI practices and products	$752,327	5.12 / 45.49 (11%)
				Total: $1,504,653	Total: 10.23 / 90.99 (11%)

Table 2: WHEAT AFS -FPs, SLOs, IDOs and sub-IDOs with proposed indicators

(*) WHEAT-FPs and Sub-IDOs listed in black are extracted from the WHEAT PIM Table C (Full proposal)

(**) Targets for 2017 are in alignment with the WHEAT II PIM tables, in terms of contributions to the CGIAR SRF targets (2022) of the WHEAT AFS Phase-II Full Proposal

WHEAT FP (*)	SLO	IDO	Sub-IDO (*)	Proposed CRP-level indicators	Targets for 2017 (**)
FP1 FP3 FP4	Reduced Poverty (SLO1)	1.1 Increased resilience of the poor to climate change and other shocks	1.1.2 Reduced production risk	Adoption rate of WHEAT technologies (varieties/management practices) that potentially reduce production risks	At least 0.9 million farmers and others adopt new WHEAT technologies (varieties/management practices) that potentially reduce production risks
		1.3 Increased income and employment	1.3.3 Increased value capture by producers	Farmers' income, gender disaggregated where possible	At least 0.6 million farmers increase their income by 5%, of which 50% are female
			1.3.4 More efficient use of inputs	Adoption rate of WHEAT technologies (varieties/management practices) that potentially increase input use efficiency	At least 1.25 million farmers and others adopt new WHEAT technologies (varieties/management practices) that potentially increase input use efficiency
		1.4 Increased productivity	1.4.1 Reduced pre- and post-harvest losses, including those caused by climate change	Adoption rate of WHEAT technologies (varieties/management practices) that potentially reduce losses	At least 0.1 million farmers and others adopt new WHEAT technologies (varieties/management practices) that potentially reduce losses
			1.4.2 Closed yield gaps	Adoption rate of WHEAT improved crop management practices	At least 0.3 million farmers and others adopt new WHEAT improved crop management practices
			1.4.3 Enhanced genetic gain	▪ Wheat genetic gain ▪ Number of released wheat varieties with improved abiotic and biotic stress resilience ▪ Adoption rate of WHEAT improved varieties with abiotic and biotic stress resilience	1% increase in wheat genetic gain At least 60 new WHEAT-derived varieties released by NARS globally

					At least 0.9 million farmers and others adopt new WHEAT improved varieties with abiotic and biotic stress resilience
			1.4.4 Increased conservation and use of genetic resources	Number of legally and physically available accessions in the CIMMYT, ICARDA wheat genebanks Number of wheat germplasm accessions distributed to public and private sector partners (through SMTA) from CIMMYT and ICARDA wheat genebanks	# new wheat accessions in gene-bank # wheat accessions distributed globally
FP1 FP2 FP3	Improved Food and Nutrition Security and health (SLO2)	1.4 Increased productivity	1.4.4 Increased conservation and use of genetic resources	Number of legally and physically available accessions in the CIMMYT, ICARDA wheat genebanks Number of wheat germplasm accessions distributed to public and private sector partners (through SMTA) from CIMMYT and ICARDA wheat genebanks	# new wheat accessions in gene-bank # wheat accessions distributed globally
			1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices	Adoption rate of WHEAT improved crop management practices	At least 0.3 million farmers and others adopt new WHEAT improved crop management practices
		3.2 Enhanced benefits from ecosystem goods and services	3.2.3 Enrichment of plant and animal biodiversity for multiple goods and services	Adoption rate of WHEAT improved varieties with zinc enriched grains (zinc bio-fortified) in South Asia	At least 0.1 million farmers and others adopt new WHEAT improved varieties with abiotic and biotic stress resilience
FP1 FP4	Improved natural resources and agro-ecosystem services (SLO3)	3.2 Enhanced benefits from ecosystem goods and services	3.2.2 Agricultural systems diversified and intensified in ways that protect soils and water	Adoption rate of WHEAT technologies (varieties/management practices) that diversify and intensify WHEAT AFS and potentially increase input use efficiency	At least 0.3 million farmers adopt new WHEAT technologies (varieties/management practices) that diversify and intensify WHEAT AFS and potentially increase input use efficiency
				Adoption rate of WHEAT technologies (varieties/management practices) that diversify and intensify WHEAT AFS and potentially reduce GHG emissions	At least 0.3 million farmers adopt new WHEAT technologies (varieties/management practices) that diversify and intensify WHEAT AFS and potentially reduce GHG emissions EAT

FP4		Climate Change	A.1.4 Enhanced capacity to deal with climatic risks and extremes	Adoption rate of WHEAT technologies (varieties/management practices) that enhance capacity to deal with climatic risks and extremes	At least 0.9 million farmers and others adopt new WHEAT technologies (varieties/management practices) that enhance capacity to deal with climatic risks and extremes
FP1		Gender & Youth	B.1.3 Improved capacity of women and young people to participate in decision-making	Women farmer empowerment index (WEIA)	At least 0.12 million women increase their WEIA by 5%
FP1, 3, 4		Policies & Instit.	C.1.1 Increased capacity of beneficiaries to adopt research outputs	Adoption rate of WHEAT technologies (varieties/management practices)	At least 1.25 million farmers and others adopt new WHEAT technologies (varieties/management practices)
FP2, 3		Capacity Dev	D.1.1 Enhanced institutional capacity of partner research organizations	Number of partners formally trained (long- and short term trainings)	140 partners formally trained (long- and short term trainings)

WLE (Water, Land and Ecosystems)

WLE FP1: Restoring Degraded Landscapes (RDL)

CoA[1]	Milestone Description for 2017	Means of Verifying	For which 2022 outcomes	Budget 2017[2]	6-year W1-2 / total (%)
1.1	1. Analysis of factors affecting success and failure of land restoration initiatives and recommendations for new initiatives completed.	Draft synthesis report	Outcome 1.1: Governments, agencies, and local stakeholders invest in research based strategies and programs in 3 countries targeting adoption of restorative and preventative practices that enhance ecosystem services	W1-2: $184,000 W3/Bilateral: $373,730 Total: $557,810	W1-2 $5,624,472 (17%) W3/Bilateral $27,460,658 Total $33,085,130
	2. Work planning with governments, agencies and local stakeholders active in land restoration in three countries carried out.	Agreed work plan		W1-2: $593,000 W3/Bilateral: $917,000 Total: $1,510,000	
1.2	1. Methodological guide on measuring soil carbon for carbon trading identified, and guide content agreed upon in three focal countries.	Draft methodological guide completed	Outcome 1.2: Climate financing, national strategies and programs invest in research-based practices to build soil fertility and soil carbon in three countries, providing food security, adaptation and mitigation benefits	W1-2: $634,000 W3/Bilateral: $888,000 Total: $1,522,000	W1-2 $5,624,472 (17%) W3/Bilateral $27,460,658 Total $33,085,130
	2. Review of current and promising new predictive models to simulate Soil Organic Carbon-dynamics completed.	Synthesis report written and results presented at the 2nd Agriculture and Climate Change Conference (Spain)		W1-2: $226,000 W3/Bilateral: $356,000 Total: $581,000	
1.3	1. One national expert workshop on monitoring land restoration and avoiding land degradation conducted in each of the six focus countries.	Synthesis report of country workshops written including proposed monitoring framework	Outcome 1.3: Capacity of national partners enhanced leading to national, district, and regional agencies in 6 countries adopting recommended monitoring and verification frameworks	W1-2: $205,000 W3/Bilateral: $568,000 Total: $773,000	W1-2 $2,812,236/ (17%) W3/Bilateral $13,730,330 Total $16,542,566
	2. Review of key land degradation risks completed and respective risk maps produced	Publication on future land degradation risks including feedback from partners		W1-2: $205,000 W3/Bilateral: $568,000 Total: $773,000	

[1] CoA denotes a Cluster of Activities under a Flagship Project

[2] The W3/bilateral budget for 2017 is based on current estimates. Budgets will be developed in more detail as part of the 2017 planning process. An updated budget will be included in the 2017 POWB.

WLE FP2: Land and Water Solutions for Sustainable Intensification (LWS)

CoA[1]	Milestone Description for 2017	Means of Verifying	For which 2022 outcomes	Budget 2017[2]	6-year W1-2 / total (%)
2.1	1. Phase 1 business models refined and implemented with public/private sector involvement in 6 countries	Funded development proposals/policy briefs/press articles indicating LWS designs and recommendations	Outcome 2.1: Evidence of LWS solutions and investment options informing policy, practice, and investments into smallholder ALWM, in 4 countries	W1-2: $688,000 W3/Bilateral: $1,605,000 Total: $2,293,000	W1-2 $5,046,112 (17%) W3/Bilateral $24,636,900 Total $29,683,012
	2. Phase 1 recommendations on ALWM interventions evident in policy recommendations in Ethiopia, Ghana and India.	Policy brief (3) indicating the use of ALWM recommendations at scale		W1-2: $688,000 W3/Bilateral: $1,605,000 Total: $2,293,000	
2.2	1. Accelerate sustainable intensification by identifying key target points for new opportunities to scale-up and out field/farm interventions in irrigation systems	Synthesis document for 3 countries	Outcome 2.2 Adoption of sustainability considerations and management improvements into ALWM investments and revitalization, new-build investments for small, medium and large irrigation	W1-2: $153,000 W3/Bilateral: $357,000 Total: $510,000	W1-2 $7,569,168 (17%) W3/Bilateral $36,955,351 Total $44,524,519
	2. Improved baseline/ benchmark indicator systems that enhance irrigation performance, gender equity and ecosystem services in 2 African irrigation investments efforts with IFAs and/or national public sector investment partners	Funded development proposals/policy briefs/press indicating LSIS designs and recommendations		W1-2: $153,000 W3/Bilateral: $357,000 Total: $510,000	
	3. Identify how problematic LSIS in 3 countries (India, Ethiopia, Egypt) can be improved by new business models and partnerships and supporting capacity building needs	Proceedings of multi-stakeholder workshops in 3 countries outlining key intervention strategies for sustainable intensification of LSIS		W1-2: $153,000 W3/Bilateral: $357,000 Total: $510,000	

[1] CoA denotes a Cluster of Activities under a Flagship Project

[2] The W3/bilateral budget for 2017 is based on current estimates. Budgets will be developed in more detail as part of the 2017 planning process. An updated budget will be included in the 2017 POWB.

WLE FP3: Sustaining Rural- Urban Linkages (RUL)

CoA[1]	Milestone Description for 2017	Means of Verifying	For which 2022 outcomes	Budget 2017[2]	6-year W1-2 / total (%)
3.1	15 rapidly growing cities have* implemented in-depth analysis on their food value chains and farming system for capacity development and policy advice. **Led by city agencies in charge of agriculture or food*	City reports, factsheets, Policy briefs, and Policy narratives	Outcome 3.1: Increased capacity and evidence for male and female stakeholders and policy makers to implement urban and peri-urban agriculture (UPA) related policies and farming system innovations	W1-2: $132,000 W3/Bilateral: $416,000 Total: $548,000	W1-2 $2,085,733 (17%) W3/Bilateral $10,183,285 Total $12,269,018
	10 rapidly growing cities have adopted a monitoring system for UPA related innovations and development of food related policies and actions.	City strategic plans and monitoring reports		W1-2: $132,000 W3/Bilateral: $415,000 Total: $547,000	
3.2	Field trials for waste-based soil rehabilitation established for major plantation crops in Sri Lanka targeting recommendations for private sector investments on e.g. 180,000 ha under tea.	Project reports and websites, scientific papers	Outcome 3.2: Increased business capacities in nutrient, water and energy recovery from domestic and agro-industrial waste for intensified food crop production	W1-2: $132,000 W3/Bilateral: $ 250,000 Total: $382,000	W1-2 $2,762,561 (17%) W3/Bilateral $13,487,796 Total $16,250,357
	Innovative financing mechanisms developed to support implementation and catalyse scaling-up of RRR business models in Kenya, Ethiopia, Uganda and Ghana	Publications on innovative financing mechanisms and policy briefs		W1-2: $132,000 W3/Bilateral: $508,000 Total: $640,000	
	Business models (n=18) for resource recovery from fecal sludge promoted through the initiation of a free Massive Open Online Courses (MOOC) for entrepreneurs of both gender across Africa, Asia and Latin America.	MOOC Curriculum, website and subscription records		W1-2: $132,000 W3/Bilateral: $250,000 Total: $382,000	
3.3	Advisory services to ADB and World Bank in Nepal and India for adoption and replication of resource oriented solid and liquid waste management in small towns with potential to impact about 300,000 people.	Project implementation reports; acknowledged WLE guidance by developing banks	Outcome 3.3: Increased public and private investments and adoption of WLE FP3 policy advise on safe fecal matter management and environmental protection	W1-2: $221,000 W3/Bilateral: $319,000 Total: $540,000	W1-2 $2,762,561 (17%) W3/Bilateral $13,487,796 Total $16,250,357
	Guidelines developed for the Indian Ministry of Urban Development on safety handling of fecal sludge to be applied in 7,935 towns with a total population of 377 million.	MoUD acknowledges/ publishes guidelines		W1-2: $221,000 W3/Bilateral: $400,000 Total: $621,000	

[1] CoA denotes a Cluster of Activities under a Flagship Project

[2] The W3/bilateral budget for 2017 is based on current estimates. Budgets will be developed in more detail as part of the 2017 planning process. An updated budget will be included in the 2017 POWB.

WLE FP4: Managing Resource Variability, Risks and Competing Uses for Increased Resilience (VCR)

CoA [1]	Milestone Description for 2017	Means of Verifying	For which 2022 outcomes	Budget 2017[2]	6-year W1-2 / total (%)
4.1	1. Flood insurance theoretical and institutional framework and tools delivered. (co-developed with CCAFS)	Project reports, tools, documented, partnership platform	Outcome 4.1: Increased evidence for stakeholders and policy makers to implement WLE solutions that increase water supply for agricultural production, livelihoods and ecosystems, and that decrease economic and human losses from water variability extremes	W1-2: $243,000 W3/Bilateral: $372,000 Total: $570,000	W1-2 $3,339,314 (17%) W3/Bilateral $16,303,707 Total 19,643,021
	2. Initial results from water variability pilot experiments in the Ganges Basin and/or SE Asia adapted to Southern Africa.	Project reports, tools, documented.		W1-2: $81,000 W3/Bilateral: $777,000 Total: $858,000	
	3. Cross-CRP modes of operation and learning are identified to support ex-ante analyses of the impacts of water variability in selected AFS areas of intervention	Work plan developed with RICE, FISH and MAIZE		W1-2: $81,000 W3/Bilateral: N/A Total: $81,000	
	4. Science-policy exchange processes and learning alliances around water variability challenges and opportunities and the role of ecosystem services strengthened to increase resilience of investments in sustainable intensification	Blog pieces, events attended and co-developed products on water, the environment and resilience		W1-2: $243,000 W3/Bilateral: $100,000 Total: $343,000	
4.2	1. Increased capacity for better management of portfolios of natural and built infrastructure in an era of climate change in basin agencies in West and East Africa.	Results of multi-criteria optimization analysis; published recommendations, reports of capacity building for decision makers and technocrats.	Outcome 4.2: Increased public and private sector adoption of WLE policy advise on changes in water resource infrastructure planning and management, leading to enhanced ecosystem services and increased resilience	W1-2: $81,000 W3/Bilateral: $200,000 Total $281,000	W1-2 $2,226,209 (17%) W3/Bilateral $10,869,138 Total $13,095,347
	2. Methodology for the assessment of key targets under SDG 6 [water] developed and applied with linkages to SDG2.	Reports, papers and policy notes on key challenges and opportunities to meeting the water and food security goals		W1-2: $162,000 W3/Bilateral: $70,000 Total $232,000	
	3. Methodology for the assessment of risks and resilience in the upscaling of agri-food system strategies in the Eastern Gangetic Plains (India, Bangladesh and Nepal)	Report, blog pieces, draft journal article		W1-2: $81,000 W3/Bilateral: $40,000 Total $121,000	

4.3	1. Establishment of operational partnerships in the WLE Groundwater Solutions Initiative for Policy and Practice (GRIPP) Initiative	GRIPP website and publications	Outcome 4.3: Increased public investments into, and adoption of WLE policy advise on measures to reduce groundwater depletion and promote its sustainable use with associated increase in agricultural incomes	W1-2: $81,000 W3/Bilateral: $30,000 Total $111,000	W1-2 $3,339,314 (17%) W3/Bilateral $16,303,707 Total 19,643,021
	2. Information on risks and opportunities associated with groundwater use applied and taken up with key Government partners in India and promoted by GRIPP partners.	Documentation on use of WLE generated evidence on groundwater risks and opportunities		W1-2: $243,000 W3/Bilateral: $190,000 Total $433,000	
4.4	1. At least 2 water-energy-food nexus initiatives and national strategies are informed by WLE technology, policy and institutional insights	Documented requests on support with evidence and data on nexus solutions and insights	Outcome 4.4: Alignment of regional energy plans and food security initiatives with available water resources, leading to reduced production risks and increased resource use efficiency	W1-2: $162,000 W3/Bilateral: $350,000 Total $512,000	W1-2 $2,226,209 (17%) W3/Bilateral $10,869,138 Total $13,095,347
	2. ADB pilot tests WLE developed water-energy-food nexus checklist in irrigated agricultural projects	Report and policy note		W1-2: $162,000 W3/Bilateral: $150,000 Total $312,000	

[1] *CoA denotes a Cluster of Activities under a Flagship Project*

[2] *The W3/bilateral budget for 2017 is based on current estimates. Budgets will be developed in more detail as part of the 2017 planning process. An updated budget will be included in the 2017 POWB.*

WLE FP5 – Enhancing Sustainability across Agricultural Systems (ESA)

A reformulation of FP5 will take place through 2017 in response to donor and ISPC comments,

WLE Table 2: SLOs, IDOs and sub-IDOs with proposed indicators

SLO	IDO	Sub-IDO	Proposed draft indicators[53]	Flagship-Outcome[54]	Targets 2017	Targets 2022[55]
Reduced Poverty (SLO1)	Increased resilience of the poor to climate change and other shocks	Reduced production risk	Number of households which have adopted agricultural land and water management solutions in targeted Agri-Food System (AFS CRP) landscapes	FP2-O2.1	[target to be set following 2017 baseline exercise]	6 million households[i]
			Number of regional energy plans and food security initiatives aligned to available water resources, leading to reduced production risks and increased resource use efficiency	FP4-4.4	Nexus assessment initiated in two regions – one in Africa and one in Asia	2 Regions
Improved Food and Nutrition Security for Health (SLO2)	Improved human and animal health through better agricultural practices	Improved water quality	Increased public investments and adoption (by International Financial Institutions) of WLE policy advice on fecal sludge management for ecosystem service protection	FP3- O3.2	Two of targeted five IFIs draw on WLE solutions and advice	5 IFI's reference WLE; 9 m households
Improved Natural Resources Systems and Ecosystems Services (SLO3)	Natural capital enhanced and protected, especially from climate change	Land, water, and forest degradation minimized and reversed	Number of countries where soil carbon and soil fertility integrated into national climate strategies, budgets and programmes	FP1-O1.2 FP4-O4.1 FP3- O3.2	One Country (Kenya) in 2017	Three countries by 2022
		More productive and equitable management of natural resources	Number of countries in which stakeholders and policy makers implement approaches that increase water supply for agricultural production under conditions of water variability	FP4-O4.1	Initial results from pilot testing of innovative water management approaches in one country	3 Countries

[53] The proposed indicators are pitched at the highest attributable level. Mostly, these are at research outcome level, in the relevant sub-IDO. These should, following an alignment exercise, match up to sub-IDO level indicators~~)~~ covered by the CG-wide Task Force on SRF targets and indicators. These indicators will be aligned to those of the Task Force once completed.

[54] Drawn from WLE Full Proposal, noting that *several* WLE flagship outcomes contribute to the same sub-IDO. For this exercise, however, we have selected the outcome (indicator) that we feel best reflects the WLE investment in the sub-IDO. Note some sub-IDOs have more FP/outcomes contributing than others.

[55] 2022 targets drawn from the PIM tables. Annualization will be reviewed as appropriate depending on the impact pathway (when change will occur) and data availability. In some cases, targets for 2017 and outer years will be set following a 2017 baselining exercise. Endnotes provide the calculations, projections and evidence of the justification for the targets.

SLO	IDO	Sub-IDO	Proposed draft indicators[53]	Flagship-Outcome[54]	Targets 2017	Targets 2022[55]
			Level of public investment into policies that reduce groundwater depletion and promote its sustainable use with associated increase in agricultural incomes	FP4-04.3	Information on risks and opportunities of groundwater use applied by key Government partners in India via Groundwater Solutions for Policy and Practice Initiative	8 countries invest in USD 10m sustainable groundwater management
		Agricultural systems diversified and intensified in ways that protect soils and water	Increase in land area demonstrating improved water-use efficiency practices	FP2-O2.2	[Target to be set following 2017 baseline exercise]	Three million HA with improved water efficiency by 2022
			Countries increase nutrient use efficiency by recovering 10% of applied NPK from consumed food	FP3-O3.2	Two countries	10 countries
	More sustainably managed agro-ecosystems	Increased resilience of agro-ecosystems and communities, especially those involving smallholders	Number of countries in which governments, agencies and local stakeholders invest in research based strategies and programs targeting adoption of restorative and preventative practices against land degradation.	FP1-O1.1	Identification of relevant research to underpin strategies in two countries	Three countries by 2022
		Reduced net greenhouse gas emissions from agriculture, forests and other forms of land use	Number of countries where climate financing, national strategies and programs invest in research based practices to build soil fertility and soil carbon, providing food security, adaptation and mitigation benefits	FP1-O1.1 FP3-O3.2	One country in 2017 adopting WLE initiated CO2 offset measures	Three countries by 2022; 2m ton CO2-e per year
Climate change (CC SLO)	Mitigation and adaptation achieved	Enhanced capacity to deal with climate risks and extremes	Number of countries with demonstrable investment by donors, MDBs and Governments in landscape-based solutions to manage increased water variability	FP2-O2.1&2.2 FP4-O4.1 and 4.2	Increased capacity for better management of natural and built infrastructure portfolios in two basin agencies in the 3 countries	2 MDBs Three target countries by 2022
Gender and Youth (CC SLO)	Equity and inclusion achieved	Gender and equitable control of productive assets and resources	Number of public and private investors implementing irrigation system performance tools that remove gender barriers to accessing productive resources	FP1-O1.1 FP2-O2.2	[target to be set following 2017 baseline exercise]	Target to be determined
Policies and Institutions (CC SLO)	Enabling environment improved	Conducive agricultural policy environment	Number of cities with increased capacity and evidence for stakeholders and policy makers to implement urban and peri-urban agriculture related policies and farming system innovations	FP1-O1.1 FP3-03.1	8 cities in 5 countries	25 additional towns and cities have implemented urban food policies or strategies by 2022

SLO	IDO	Sub-IDO	Proposed draft indicators[53]	Flagship-Outcome[54]	Targets 2017	Targets 2022[55]
		Increased capacity of partner organizations, as evidenced by rate of investments in agricultural research	Number of professionals trained in land restoration methods, risk assessment, and monitoring and evaluation techniques	FP1-O1.3	Trainees identified and design of programmes initiated	100 trained professionals in 6 countries by 2022
Capacity Development (CC SLO)	National partners and beneficiaries enabled	Enhanced institutional capacity in partner research organizations	Number of countries where the capacity of national partners is enhanced leading to national, district, and regional agencies adopting recommended monitoring and verification frameworks for soil organic carbon	FP1-O1.3	Design of capacity building programmes initiated	6 countries by 2022
		Increased capacity for innovation in partner development organizations and in poor and vulnerable communities	Increased business capacities in nutrient, water and energy recovery from domestic and agro-industrial waste for intensified (peri)urban food production	FP3-O3.2	One business school in 2017 Table 1 One public (global) Massive Online Open Course (MOOC)	6 major business schools have courses including renewable resource recovery

[i] For details of regional/country modelling see: http://awm-solutions.iwmi.org/regional-mapping.aspx; http://awm-solutions.iwmi.org/country-mapping.aspx. For example, WLE research facilitated policy changes in West Bengal, India, enabling expanded farmer access to annually recharged groundwater aquifers resulting in over 140,000 new electric connections for tubewells, which improved irrigation on 250,000 ha for approximately 1.3 million water buyers (mostly smallholders) and led to greater net returns due to reduced production costs, improved water quality and higher value output. The estimated RoI for this research is $6/dollar including promotion of the uptake of recommended AWLM solutions.