

GLDC PIM information

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PIM A TABLE: GLDC Contributions to the SRF targets in 2018-2022

CGIAR Target	Target contribution	Unit of target	Amount Needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	Synergies with other CRP's/ Platforms (click Ctrl for multiple selection)
100 million more farm households have adopted improved varieties, breeds or trees, and / or improved management practices	8.9	million farm households	60,608,060	10	20	70	0	Genebanks, Genetic Gain platform
30 million people, of which 50% are women, assisted to exit poverty	4.4	million people	101,013,440	10	20	70	0	Big Data, CCAFS, FTA, Genebanks, Genetic Gain platform,
Improve the rate of yield increase for major food staples from current <1% to 1.2-1.5% per year	1.2	%	80,810,750	10	20	70	0	Genebanks, Genetic Gain platform
30 million more people, of which 50% are women, meeting minimum dietary energy requirements	12.7	million people	24,243,230	10	20	70	0	A4NH, Genebanks, Genetic Gain platform, Livestock, Maize, PIM, Rice,
150 million more people, of which 50% are women, without deficiencies in one or more of the following essential micronutrients: iron, zinc, iodine, vitamin A, folate and vitamin B12	29.8	million people	52,526,990	10	20	70	0	A4NH, Genebanks, Genetic Gain platform, Livestock, Maize, PIM, Rice, RTB, Wheat
10% reduction in women of reproductive age who are consuming less than the adequate number of food groups	7.5	%	48,486,450	10	20	70	0	A4NH, Genebanks, Genetic Gain platform, Livestock, Maize, PIM, Rice,
5% increase in water and nutrient (inorganic, biological) use efficiency in agro- ecosystems, including through recycling and reuse	4.9	%	8,081,080	10	20	70	0	CAAFS, Genebanks, Genetic Gain platform
55 million hectares (ha) degraded land area restored	0.2	millions of ha	4,040,540	10	20	70	0	Livestock, Maize, Rice, RTB, Wheat
2.5 million ha of forest saved from deforestation	0.5	millions of ha	24,243,210	10	20	70	0	Livestock
		Total	404,053,750					

PIM A TABLE: GLDC Contributions to the SRF targets in 2018-2022

CGIAR Target: 100 million more farm households have adopted improved varieties, breeds or trees, and / or improved management practices		
CGIAR Target countries	Other Country	Target contribution in country
Burkina Faso	–	0.86
Ethiopia	–	0.57
India	–	2
Malawi	–	0.57
Mali	–	1.14
Niger	–	0.28
Nigeria	–	1.14
Myanmar		0.57
Sudan		0.28
Tanzania	–	0.86
Uganda	–	0.57

CGIAR Target: 30 million people, of which 50% are women, assisted to exit poverty		
CGIAR Target countries	Other Country	Target contribution in country
Burkina Faso		0.42
Ethiopia		0.28
India		1
Malawi		0.28
Mali		0.57
Niger		0.14
Nigeria		0.57
Myanmar		0.28
Sudan		0.14
Tanzania		0.42
Uganda		0.28

CGIAR Target: Improve the rate of yield increase for major food staples from current <1% to 1.2-1.5% per year

CGIAR Target countries	Other Country	Target contribution in country
Burkina Faso	–	1.2
Ethiopia	–	1.2
India	–	1.2
Malawi	–	1.2
Mali	–	1.2
Niger	–	1.2
Nigeria	–	1.2
Myanmar	–	1.2
Sudan	–	1.2
Tanzania	–	1.2
Uganda	–	1.2

CGIAR Target: 30 million more people, of which 50% are women, meeting minimum dietary energy requirements

CGIAR Target countries	Other Country	Target contribution in country
Burkina Faso	–	1.23
Ethiopia	–	0.82
India	–	2.86
Malawi	–	0.82
Mali	–	1.63
Niger	–	0.41
Nigeria	–	1.63
Myanmar	–	0.82
Sudan	–	0.41
Tanzania	–	1.23
Uganda	–	0.82

CGIAR Target: 150 million more people, of which 50% are women, without deficiencies in one or more of the following essential micronutrients: iron, zinc, iodine, vitamin A, folate and vitamin B12

CGIAR Target countries	Other Country	Target contribution in country
Burkina Faso	–	2.88
Ethiopia	–	1.92
India	–	6.73
Malawi	–	1.92
Mali	–	3.85
Niger	–	0.96
Nigeria	–	3.85
Myanmar	–	1.92
Sudan	–	0.96
Tanzania	–	2.88
Uganda	–	1.92

CGIAR Target: 10% reduction in women of reproductive age who are consuming less than the adequate number of food groups

CGIAR Target countries	Other Country	Target contribution in country
Burkina Faso	–	0.72
Ethiopia	–	0.48
India	–	1.7
Malawi	–	0.48
Mali	–	0.97
Niger	–	0.24
Nigeria		0.97
Myanmar	–	0.48
Sudan	–	0.24
Tanzania	–	0.72
Uganda		0.48

CGIAR Target: 5% increase in water and nutrient (inorganic, biological) use efficiency in agro-ecosystems, including through recycling and reuse

CGIAR Target countries	Other Country	Target contribution in country
Burkina Faso	–	0.47
Ethiopia	–	0.31
India	–	1.11
Malawi	–	0.31
Mali	–	0.63
Niger	–	0.16
Nigeria		0.63
Myanmar	–	0.31
Sudan	–	0.16
Tanzania	–	0.47
Uganda		0.31

PIM TABLE B - Flagship 1: Priority Setting and Impact Acceleration									
2022 outcome description	Amount needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	W1+W2 (Amount)	W3 (Amount)	Bilateral (Amount)	Other (Amount)
Outcome 1. Improved targeting and responsiveness of research to market and household demands in the face of climate change for greater technology adoption, food and nutrition security, resilience, and poverty reduction	12,208,772	10	27	63	0	2,188,969	1,364,440	8,655,362	0
Outcome 2. Market and household demand identified and trade-offs assessed for more inclusive value chains that improve income and nutrition status in target regions	8,720,550	10	27	63	0	1,563,549	974,600	6,182,401	0
Outcome 3. Inclusive and equitable technologies and innovation systems established for accelerated and broadened impact	3,488,220	10	27	63	0	625,420	389,840	2,472,960	0
Outcome 4. Prioritized scaling options for the agri- food systems with impact evidence and enabling policy support mechanisms for maximum livelihood impact and inclusiveness	10,464,662	10	27	63	0	1,876,260	1,169,520	7,418,882	0
	34,882,204					6,254,198	3,898,400	24,729,606	0

PIM TABLE C - Flagship 1: Priority Setting and Impact Acceleration									
Sub-IDO	Amount needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	W1+W2 (Amount)	W3 (Amount)	Bilateral (Amount)	Other (Amount)
Reduced production risk	4047206	10	27	63	0	725,643	452,312	2,869,251	0
Reduced market barriers	7038549	10	27	63	0	1,261,975	786,621	4,989,952	0
Increased livelihood opportunities	7696372	10	27	63	0	1,379,920	860,139	5,456,314	0
Increased access to diverse nutrient-rich	4297112	10	27	63	0	770,450	480,241	3,046,421	0
Improved capacity of women and young people to participate in decision- making	2200174	10	27	63	0	394,480	245,889	1,559,805	0
Conducive agricultural policy environment	5077725	10	27	63	0	910,410	567,481	3,599,834	0

Enhanced institutional capacity of partner research organizations	2210179	10	27	63	0	396,274	247,007	1,566,898	0
Increased capacity for innovation in partner development	2314888	10	27	63	0	415,047	258,710	1,641,131	0
and in poor and vulnerable communities	34,882,204					6,254,198	3,898,400	24,729,606	
	4047206					725,643	452,312	2,869,251	0

PIM TABLE B - Flagship 2: Functional Agrifood Systems									
2022 outcome description	Amount needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	W1+W2 (Amount)	W3 (Amount)	Bilateral (Amount)	Other (Amount)
FP2.O1: Multi-dimensional impacts of innovative agricultural value chain options are transparent to governance actors and provide incentives for adapting the enabling environment.	12,845,054	16	20	64	0	1,653,827	5,789,200	5,402,026	0
FP2.O2: Actors in GDLC priority agricultural value chains developed innovative value chain options and are empowered to develop independently sustainable business models.	25,690,107	16	20	64	0	3,307,655	11,578,400	10,804,052	0
FP2.O3: Governance mechanisms are revised and harmonized in a way that encourages improved agrifood system strategies adapted to specific social-ecological	25,690,107	16	20	64	0	3,307,655	11,578,400	10,804,052	0
	64,225,268					8,269,137	28,946,001	27,010,130	0

PIM TABLE C - Flagship 2: Functional Agrifood Systems									
Sub-IDO	Amount needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	W1+W2 (Amount)	W3 (Amount)	Bilateral (Amount)	Other (Amount)
Reduced market barriers	12,845,054	16	20	64	0	1,653,827	5,789,201	5,402,026	0
Increased value capture by producers	6,422,526	16	20	64	0	826,914	2,894,600	2,701,013	0
Reduced pre and post-harvest losses, incl. climate change	6,422,526	16	20	64	0	826,914	2,894,600	2,701,013	0
Increased availability of diverse nutrient-rich foods	12,845,054	16	20	64	0	1,653,827	5,789,201	5,402,026	0
Increased capacity of beneficiaries to adopt research outputs	6,422,526	16	20	64	0	826,914	2,894,600	0	0
Conducive agricultural policy environment	12,845,054	16	20	64	0	1,653,827	5,789,200	5,402,026	0
Increased capacity for innovation in partner development organizations and in poor and vulnerable communities	6,422,526	16	20	64	0	826,914	2,894,600	2,701,013	0
	64,225,268					8,269,137	28,946,001	27,010,130	0

PIM TABLE B - Flagship 3: Integrated Farm & Household Management									
2022 outcome description	Amount needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	W1+W2 (Amount)	W3 (Amount)	Bilateral (Amount)	Other (Amount)
FP3.O1. Cropping systems sustainably intensified and diversified	25,109,128	12	14	74	0	3,436,672	4,363,456	17,309,000	0
FP3.O2. Pest and diseases controlled safely and with reduced agro-chemical	44,949,609	12	14	74	0	6,152,227	7,811,328	30,986,053	0
FP3.O3. Tested, adapted and validated options applied for sustainable intensification and livelihood diversification by	21,467,690	12	14	74	0	2,938,270	3,730,648	14,798,771	0
	91,526,427					12,527,170	15,905,432	63,093,824	0

PIM TABLE C - Flagship 3: Integrated Farm & Household Management									
Sub-IDO	Amount needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	W1+W2 (Amount)	W3 (Amount)	Bilateral (Amount)	Other (Amount)
Reduced production risk	12,756,294	12	14	74	0	1,745,946.58	2,216,784.46	8,793,562	0
Increased livelihood opportunities	7,168,595	12	14	74	0	981,161.47	1,245,756.04	4,941,677	0
Reduced pre and post- harvest losses, incl. climate change	22,234,679	12	14	74	0	3,043,247.71	3,863,935.07	15,327,496	0
Increased safe use of inputs	1,255,456	12	14	74	0	171,833.55	218,172.74	865,450	0
Gender-equitable control of productive assets and resources	17,941,141	12	14	74	0	2,455,593.64	3,117,805.48	12,367,741	0
Technologies that reduce women's labor and energy expenditure developed and disseminated	9,152,642	12	14	74	0	1,252,716.86	1,590,543.08	6,309,382	0
Improved capacity of women and young people to participate in decision- making	21,017,621	12	14	74	0	2,876,669.68	3,652,435.13	14,488,516	0
	91,526,427					12,527,170	15,905,432	63,093,824	0

PIM TABLE B - Flagship 4: Variety and Hybrid Development									
2022 outcome description	Amount needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	W1+W2 (Amount)	W3 (Amount)	Bilateral (Amount)	Other (Amount)
FP4.01. New varieties & allied innovations improving productivity & production potential, agribusiness opportunity & stabilize food supply.	130,505,325	7	19	74	0	15,299,969	19,309,278	95,896,077	0
FP4.02. Robust and responsive global to national breeding systems produce and deliver novel varieties and allied innovations at appropriate scale and scope	37,452,903	7	19	74	0	4,390,842	5,541,448	27,520,612	0
	167,958,228					19,690,812	24,850,727	123,416,689	

PIM TABLE C - Flagship 4: Variety and Hybrid Development

Sub-IDO	Amount needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	W1+W2 (Amount)	W3 (Amount)	Bilateral (Amount)	Other (Amount)
Reduced production risk	16,795,820	7	19	74	0	1,969,081	2,485,072	12,341,667	0
Reduced pre and post- harvest losses, incl. climate	16,795,820	7	19	74	0	1,969,081	2,485,072	12,341,667	0
Closed yield gaps through improved agronomic and animal husbandry practices	25,193,730	7	19	74	0	2,953,621	3,727,608	18,512,501	0
Enhanced genetic gains	16,795,820	7	19	74	0	1,969,081	2,485,072	12,341,667	0
Increased availability of diverse nutrient-rich foods	16,795,820	7	19	74	0	1,969,081	2,485,072	12,341,667	0
Reduced biological and chemical hazards in the food system	16,795,820	7	19	74	0	1,969,081	2,485,072	12,341,667	0
Increased resilience of agro-ecosystems and communities, especially those including smallholders	25,193,730	7	19	74	0	2,953,621	3,727,608	18,512,501	0
Gender-equitable control of productive assets and resources	8,397,910	7	19	74	0	984,540	1,242,536	6,170,834	0
Increased capacity of beneficiaries to adopt research outputs	10,077,492	7	19	74	0	1,181,449	1,491,043	7,405,000	0
Increased capacity for innovation in partner research organizations	15,116,264	7	19	74	0	1,772,176	2,236,569	11,107,519	0
	167,958,228					19,690,812	24,850,727	123,416,689	0

PIM TABLE B - Flagship 5: Pre-Breeding and Trait Discovery									
2022 outcome description	Amount needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	W1+W2 (Amount)	W3 (Amount)	Bilateral (Amount)	Other (Amount)
FP5.O1. Prebreeding products through use of genebanks and other sources and modern tools to increase genetic	6,819,244	8	20	72	0	1,178,765	829,980	4,810,498	0
FP5.O2. Trait discovery and development based on genomics and phenomics to generate new markers to support trait integration through use of modern enabling technologies and forward breeding	27,276,977	8	20	72	0	4,715,061	3,319,920	19,241,993	0
FP5.O3. National researchers able to apply the acquired skills in other pre-breeding programmes. Development of enabling technologies platforms to be used for rapid trait discovery, trait validation, trait development, and trait introgression	11,365,407	8	20	72	0	1,964,609	1,383,300	8,017,497	0
	45,461,627					7,858,435	5,533,200	32,069,988	0

PIM TABLE C - Flagship 5: Pre-Breeding and Trait Discovery									
Sub-IDO	Amount needed (\$)	W1+W2 (%)	W3 (%)	Bilateral (%)	Other (%)	W1+W2 (Amount)	W3 (Amount)	Bilateral (Amount)	Other (Amount)
Reduced production risk	2,727,697	8	20	72	0	471,506	331,992	1,924,199	0
Reduced pre and post-harvest losses, incl. climate change	4,546,163	8	20	72	0	785,843	553,320	3,206,999	0
Enhanced genetic gains	27,845,247	8	20	72	0	4,813,291	3,389,085	19,642,868	0
Increased conservation and use of genetic resources	1,363,850	8	20	72	0	235,753	165,996	962,100	0
Increased availability of diverse nutrient-rich foods	3,864,239	8	20	72	0	667,967	470,322	2,725,949	0
Enhanced capacity to deal with climatic risks and extremes	1,932,119	8	20	72	0	333,983	235,161	1,362,974	0
Enhanced individual capacity in partner research organizations through training and exchange	3,182,313	8	20	72	0	550,090	387,324	2,244,899	0
	45,461,627					7,858,435	5,533,200	32,069,988	0

PIM TABLE D - Flagship 1: Priority Setting and Impact Acceleration

Year	Milestone description	Means of verifying	For which outcomes
2018	Pre-proposal foresight and ex-ante impact analyses conducted to guide priorities across crops, countries, and the major technical lines of GLDC research. This involves: (a) yield gaps/constraints analysis to identify a set of potential research and technology options and to estimate the associated yield gains or yield loss reductions; (b) ex-ante impact evaluation to estimate potential economic benefits and rates of return; and (c) foresight analysis of production and demand for GLDC crops.	GLDC proposal with the crop, country, and trait priorities informed by the results of the foresight and ex-ante impact analyses. The detailed foresight and ex-ante impact evaluation reports should also be made available either as annexes or in a shared folder.	FP1.O1: Improved targeting and responsiveness of research to market and household demands in the face of climate change for greater technology adoption, food and nutrition security, resilience, and poverty reduction
2019	Expanded foresight and ex-ante evaluation of GLDC research and technology options (including quality improvement research) conducted and preliminary results shared on the potential economic, environmental, and poverty reduction impacts	Preliminary foresight and ex-ante impact evaluation results that will be shared with GLDC researchers and stakeholders at the annual review and planning meeting to seek feedback and further inputs	FP1.O1: Improved targeting and responsiveness of research to market and household demands in the face of climate change for greater technology adoption, food and nutrition security, resilience, and poverty reduction
2020	Expanded foresight and ex-ante evaluation of GLDC research and technology options (including quality improvement research) completed and working papers published on the potential economic, environmental, and poverty reduction impacts to guide priority setting	Foresight and ex-ante evaluation working papers and the final results that will be shared with GLDC researchers and stakeholders at the annual review and planning meeting	FP1.O1: Improved targeting and responsiveness of research to market and household demands in the face of climate change for greater technology adoption, food and nutrition security, resilience, and poverty reduction
2021	The results of the priority assessment process applied in consultation with GLDC management and scientists to adjust GLDC priorities for increased research effectiveness and efficiency	Refined GLDC program with adjusted work plans for 2021 featuring priority research options and countries	FP1.O1: Improved targeting and responsiveness of research to market and household demands in the face of climate change for greater technology adoption, food and nutrition security, resilience, and poverty reduction
2022	Ex-ante case studies conducted to assess the potential impacts of alternative lines of GLDC research addressing emerging constraints and opportunities	Preliminary ex-ante case study results that will be shared with GLDC researchers and stakeholders at the annual review and planning meeting	FP1.O1: Improved targeting and responsiveness of research to market and household demands in the face of climate change for greater technology adoption, food and nutrition security, resilience, and poverty reduction
2022	Ex-ante case studies completed and working papers published on the potential impacts of alternative lines of GLDC research addressing emerging constraints and opportunities	Ex-ante case study working papers and the final results that will be shared with GLDC researchers and stakeholders at the annual review and planning meeting	FP1.O1: Improved targeting and responsiveness of research to market and household demands in the face of climate change for greater technology adoption, food and nutrition security, resilience, and poverty reduction

2018	Diversity of farm household preferences vis-a-vis market demand by context outlined in view of research in GLDC	At least one paper by region outlining household typologies and market demands	FP1.02: Market and household demand identified and trade-offs assessed for more inclusive value chains that improve income and nutrition status in target regions
2019	Shared learning across GLDC stakeholders and FPs on implications of diverse targets aspirations and future scenarios leading to strategic adjustments.	Report on diversity of target group preferences and match and mismatch of GLDC research targets based on meetings and workshops across GLDC	FP1.02: Market and household demand identified and trade-offs assessed for more inclusive value chains that improve income and nutrition status in target regions
2020	Underlying principles established for diversity assessment and matching of technologies across contexts	Published options of how to meet diverse target group needs in GLDC research and scaling	FP1.02: Market and household demand identified and trade-offs assessed for more inclusive value chains that improve income and nutrition status in target regions
2021	Verification of varying targets and improvements in research outcome match for adoption and marketing	Assessment of changes in strategies and implications for matching household needs and market and value chain demands	FP1.02: Market and household demand identified and trade-offs assessed for more inclusive value chains that improve income and nutrition status in target regions
2022	Technologies matched to typologies and contexts. Fine tuning of typologies	Report on early adoption and household feedback for fine-tuning of typologies to improve GLDC research strategy	FP1.02: Market and household demand identified and trade-offs assessed for more inclusive value chains that improve income and nutrition status in target regions
2022	Technologies matched to typologies and contexts. Outcome/effectiveness assessment for learning related to adoption at scale and increased market participation	Verification of improved adoption speed and value chain inclusiveness for higher profits and nutrition based on improved technologies targeting	FP1.02: Market and household demand identified and trade-offs assessed for more inclusive value chains that improve income and nutrition status in target regions
2018	Inclusive and equitable innovation system for accelerating impacts for women and young people designed and piloted underlying design principles proven	Innovation systems for empowering women and youth design reports sex disaggregated and gender relevant datasets policy brief [paper] on gender and social analysis informing intervention design	FP1.03: Inclusive and equitable technologies and innovation systems established for accelerated and broadened impact across the agrifood system
2019	Inclusive and equitable innovation system tested and adjusted to different biophysical and socioeconomic contexts including policy interactions	Reports on performance of innovation systems for women and youth in different contexts including recommendations for enabling environments synthesis report [paper] on improved capacities and skills for women and youth	FP1.03: Inclusive and equitable technologies and innovation systems established for accelerated and broadened impact across the agrifood system

2020	Functioning innovation systems established across GLDC sites and sustainably operating. Design of scaling systems in collaboration with CoA 1.4	Scaling out strategy for innovation systems for women and youth documented number of women and youth impacted by interventions documented	FP1.O3: Inclusive and equitable technologies and innovation systems established for accelerated and broadened impact across the agrifood system
2021	Functioning innovation systems established across GLDC sites and sustainably operating. Scaling out supported and system fine-tuned to new target areas	A synthesis report on performance of innovation systems for women and youth in scale-out areas Report [paper] on improved market opportunities for women and youth	FP1.O3: Inclusive and equitable technologies and innovation systems established for accelerated and broadened impact across the agrifood system
2022	Functioning innovation systems in place and supported in all target countries	Reports on sustainability of innovation systems for women and youth impact assessment of innovations on women and youth [income, nutrition, livelihoods, market engagement] reports [paper]	FP1.O3: Inclusive and equitable technologies and innovation systems established for accelerated and broadened impact across the agrifood system
2022	Inclusive innovation systems running independently	Synthesis publication on progress and sustainability of innovation systems for women and youth	FP1.O3: Inclusive and equitable technologies and innovation systems established for accelerated and broadened impact across the agrifood system
2018	Options by context testing system designed for improved impact assessment and scaling facilitation	Reports on scaling facilitation through design of options by context testing system	FP1.O4: Prioritized scaling options for the agrifood systems with impact evidence and enabling policy support mechanisms for maximum livelihood impact and inclusiveness
2019	Improved options by context testing system designed for improved impact assessment and scaling facilitation	Reports on scaling facilitation through design of options by context testing system	FP1.O4: Prioritized scaling options for the agrifood systems with impact evidence and enabling policy support mechanisms for maximum livelihood impact and inclusiveness
2020	Option testing in collaboration with other FPs across heterogeneous conditions analyzed and scaling potential assessed	Report on implications for scaling based on option by context testing results	FP1.O4: Prioritized scaling options for the agrifood systems with impact evidence and enabling policy support mechanisms for maximum livelihood impact and inclusiveness
2021	Early impact and policy implications assessed and disseminated	Early impact assessments documented and communicated	FP1.O4: Prioritized scaling options for the agrifood systems with impact evidence and enabling policy support mechanisms for maximum livelihood impact

2022	Detailed feedback from impact assessment for GLDC and stakeholder learning and 2-way strategic adjustments	Synthesis of workshop reports and extent of strategic adjustments.	FP1.O4: Prioritized scaling options for the agrifood systems with impact evidence and enabling policy support mechanisms for maximum livelihood impact and inclusiveness
2022	Policy recommendations to support scaling and facilitation of spillovers based on learning from detailed impact studies conducted	Documentation of policy recommendations to support scaling and detailed impact studies published	FP1.O4: Prioritized scaling options for the agrifood systems with impact evidence and enabling policy support mechanisms for maximum livelihood impact and inclusiveness

PIM TABLE D - Flagship 2: Functional Agrifood Systems			
Year	Milestone description	Means of verifying	For which outcomes
2018	Tools are developed and open accessible to assess multidimensional value chain outcome preferences of stakeholders in agrifood systems. At least 50 NARS partners in eight target countries are trained in applying tools.	Publication, Reports, technical document, reports of partner institutions	FP2.O1: Multi-dimensional impacts of innovative agricultural value chain options are transparent to governance actors and provide incentives for adapting the enabling environment.
2022	In at least eight target countries multidimensional value chain outcome preferences of stakeholders in agrifood systems have been assessed.	Publication, Reports, technical document, reports of partner institutions	FP2.O1: Multi-dimensional impacts of innovative agricultural value chain options are transparent to governance actors and provide incentives for adapting the enabling environment.
2018	Tools are developed and open accessible to assess multidimensional value chain outcomes in agrifood systems. At least 50 NARS partners in eight target countries are trained in applying tools.	Publication, Reports, technical document, reports of partner institutions	FP2.O1: Multi-dimensional impacts of innovative agricultural value chain options are transparent to governance actors and provide incentives for adapting the enabling environment.
2022	In at least eight target countries multidimensional value chain outcomes in agrifood systems have been assessed.	Publication, Reports, technical document, reports of partner institutions	FP2.O1: Multi-dimensional impacts of innovative agricultural value chain options are transparent to governance actors and provide incentives for adapting the enabling environment.
2019	Dryland cereals and legumes post-harvest and commercial technologies available in the market and linked to seed systems in FP3.	Publication, Reports, technical document	FP2.O2: Actors in GDLC priority agricultural value chains developed innovative value chain options and are empowered to develop independently sustainable business models.
2022	New entrepreneurs with enhanced capacity to sustain their businesses and enhanced efficiency of public sector stakeholders in post-harvest & food processing of GLDC crops.	Publication, Reports, technical document	FP2.O2: Actors in GDLC priority agricultural value chains developed innovative value chain options and are empowered to develop independently sustainable business models.

2022	Value chain (digitalized) of GLDC crops strengthened and increased market share of GLDC crops based products.	Publication, Reports, technical document	FP2.O2: Actors in GDLC priority agricultural value chains developed innovative value chain options and are empowered to develop independently sustainable business models.
2022	Reduced post-harvest losses and drudgery (especially women), improved product quality and enhanced market demand of GLDC crop based products.	Publication, Reports, technical document, government statistics	FP2.O2: Actors in GDLC priority agricultural value chains developed innovative value chain options and are empowered to develop independently sustainable business models.
2020	Improved supply chain management and products quality leading to post-harvest losses.	Publication, Reports, technical document, government statistics	FP2.O2: Actors in GDLC priority agricultural value chains developed innovative value chain options and are empowered to develop independently sustainable business models.
2022	Nutritious and Innovative GLDC crop-based food products formulated based on market demand.	Publication, Reports, technical document, third party broad based surveys	FP2.O2: Actors in GDLC priority agricultural value chains developed innovative value chain options and are empowered to develop independently sustainable business models.
2022	Nutritional database of GLDC crops created for use by public and private sector through linkage with CRP A4NH	Publication, Reports, technical document, partner reporting	FP2.O2: Actors in GDLC priority agricultural value chains developed innovative value chain options and are empowered to develop independently sustainable business models.
2018	Analytical decision support tools developed for analyzing institutional frameworks related to GLDC value chains. At least 50 NARS partners in eight target countries are trained in applying tools.	Publication, Reports, technical document, reports of partner institutions	FP2.O3: Governance mechanisms are revised and harmonized in a way that encourages improved agrifood system strategies adapted to specific social-ecological contexts.
2019	Risks for markets to fail capturing critical societal outcomes across the value chain are identified in at least 8 target countries. Critical agrifood system actors, especially governance actors are aware of these risks.	Publication, Reports, technical document	FP2.O3: Governance mechanisms are revised and harmonized in a way that encourages improved agrifood system strategies adapted to specific social-ecological contexts.
2019	Interactions between community norms and rules, customary and statutory laws and policies in agrifood systems are well understood in different social-ecological system Approaches and tools are handed over to government and non-government implementing agencies and policy makers supporting context specific institutional change towards innovative agrifood system strategies	Publication, Reports, technical document, reports of partner institutions	FP2.O3: Governance mechanisms are revised and harmonized in a way that encourages improved agrifood system strategies adapted to specific social-ecological contexts.
2022	Innovative governance approaches supporting innovative agrifood system strategies are tested in cooperation with multiple governance actors.	Publication, Reports, technical document, reports of partner institutions	FP2.O3: Governance mechanisms are revised and harmonized in a way that encourages improved agrifood system strategies adapted to specific social-ecological

Year	Milestone description	Means of verifying	For which outcomes
2019	Map out areas suitable for crop diversification using GIS. Participatory field trials under smallholder conditions to evaluate the different cropping systems under different environments in different countries for farmers with landholdings less than 1 ha	a) Maps, b) reports on field trials, c) publications	FP3.O1: Cropping systems sustainably intensified and diversified
2022	Crop simulation modelling used to evaluate different crop sequence and crop mixes scenarios under different biophysical, climatic and socio-economic conditions. One model for each system to be applicable to different countries with similar conditions.	a) models/tools b) Publications (Articles, Proceeding)	FP3.O1: Cropping systems sustainably intensified and diversified
2019	300,000 farmers are trained in the use of crop mixes and sequences in which they have jointly identified with researcher for better water and soil management	Research and evaluation reports, training manuals, fact sheets and other IEC material	FP3.O1: Cropping systems sustainably intensified and diversified
2022	300,000 farmers in project sites increase the diversity within cropping a systems in their water and soil management developed by the joint farmer-researcher program	Research and evaluation reports, training manuals, fact sheets and other IEC material	FP3.O1: Cropping systems sustainably intensified and diversified
2019	At least two options per site per country to promote diversified, profitable and sustainable crop livestock systems discussed and agreed upon with local communities and researchers	a) Research reports, b) economic evaluation reports, c) field days and farmer exchange visits	FP3.O1: Cropping systems sustainably intensified and diversified
2022	The area managed with diversified, profitable and sustainable crop-livestock systems is increased by 20% from the baseline figure in project sites	a) Maps, b) reports, c) national statistics, d) local partners	FP3.O1: Cropping systems sustainably intensified and diversified
2019	Methods developed to document the land area the target sites that use crop mixtures and sequences as a means to minimize crop damage in project sites without increasing pesticide use	a) Research reports, b) publications and media releases	FP3.O1: Cropping systems sustainably intensified and diversified
2022	At least 20% increase in land area under crop mixtures and or crop sequences as a means to minimize crop damage in project sites without increasing pesticide use and reduced exposure to soil erosion	a) research reports, b) publications and media releases, c) farmer field days and exchange visits	FP3.O1: Cropping systems sustainably intensified and diversified
2022	Draught implements developed by NARS tested and promoted on farm and extended to other countries for diversified cropping systems	a) Research and training reports	FP3.O1: Cropping systems sustainably intensified and diversified
2022	20% female and youth farmers in target areas are trained to improve efficiency in use of draught animals	a) Research and training reports (with gender disaggregation), b) training manuals, fact sheets and other IEC material, c) number of female and youth farmers trained	FP3.O1: Cropping systems sustainably intensified and diversified
2019	Appropriate mechanization technologies identified and a strategy for comparison testing established. Technologies tested and extension training packages developed, ensuring that perverse incentives are not present	a) Research reports, b) training manuals and other IEC material, c) local partners (including NARS, NGOs and CBOs)	FP3.O1: Cropping systems sustainably intensified and diversified

2022	NARS promote at least three technical schemes adapted to smallholder farmers that reduce on farm and post-harvest losses	a) Research reports, b) training manuals and other IEC material, c) local partners (including NARS, NGOs and CBOs)	FP3.O1: Cropping systems sustainably intensified and diversified
2019	Appropriate mechanization technologies (production, harvesting and processing) identified and a strategy for comparison testing established	a) Private partnerships, b) local partners c) national statistics	FP3.O1: Cropping systems sustainably intensified and diversified
2022	At least one processing company or group per project site/district use different production, harvesting and processing equipment that can use diversified materials adapted to women and youth use	a) Private partnerships, b) local partners c) national statistics	FP3.O1: Cropping systems sustainably intensified and diversified
2022	At least four local government development and/or local extension units provide access and training to the use of mechanization adapted to small holder farmers	a) Local partners b) national statistics, c) publications and press releases	FP3.O1: Cropping systems sustainably intensified and diversified
2018	Pest and diseases management components for the target pests in different regions fine-tuned	Publication, Reports	FP3.O2: Pest and diseases controlled safely and with reduced agro- chemical inputs
2018	Pest and diseases management components for the target pests in different regions evaluated	Publication, Reports	FP3.O2: Pest and diseases controlled safely and with reduced agro- chemical inputs
2019	Efficacy of selected pest and diseases management confirmed	Publication, Reports	FP3.O2: Pest and diseases controlled safely and with reduced agro- chemical inputs
2020	Effective pest and disease management components evaluated for controlling the target pests	Publication, Reports	FP3.O2: Pest and diseases controlled safely and with reduced agro- chemical inputs
2021	Efficacy of effective IPM modules confirmed in the target regions	Publication, Reports, technical document	FP3.O2: Pest and diseases controlled safely and with reduced agro- chemical inputs
2022	IPM modules for pest and disease management in different crops/ cropping systems in the target regions ready for scaling	Publication, Reports, technical document	FP3.O2: Pest and diseases controlled safely and with reduced agro- chemical inputs
2020	Portfolios of household activities, enterprises and management practices that materially and equitably enhance livelihoods (as defined at sub-IDO level) while minimizing negative externalities.	Publication, Reports, technical document	FP3.O3: Tested, adapted and validated options applied for SI and livelihood diversification delivering livelihood benefits for rural households.
2022	Evidence that household interventions can generate beneficial impacts on CGIAR sub-IDOs at scale.	Publication, Reports, technical document, third party surveys	FP3.O3: Tested, adapted and validated options applied for SI and livelihood diversification delivering livelihood benefits for rural households.

2022	Environmental and livelihood impacts of GLDC intervention tested at scale to avoid negative unintended consequences, and amplifying synergies contributing to, poverty reduction, equitable access to development opportunities, and nutritional security identified taking into account ecosystem services.	Publication, Reports, technical document	FP3.O3: Tested, adapted and validated options applied for SI and livelihood diversification delivering livelihood benefits for rural households.
2022	Improved understanding of the social-ecological factors strongly affecting livelihood system impacts in drylands.	Publication, Reports, technical document	FP3.O3: Tested, adapted and validated options applied for SI and livelihood diversification delivering livelihood benefits for rural households.
2022	Awareness created amongst key stakeholders for trade-offs and synergies at scale related to alternative livelihood strategies.	Publication, Reports, technical document, review of partner documentation	FP3.O3: Tested, adapted and validated options applied for SI and livelihood diversification delivering livelihood benefits for rural households.

PIM TABLE D - Flagship 4: Variety and Hybrid Development

Year	Milestone description	Means of verifying	For which outcomes
2018	Breeding lines from Phase I of the CRP being tested by NARS and CGIAR - 8 crops X 3 trait clusters X 2 regions advanced.	Publication, Reports, technical document	FP4.O1: New technologies improve production and productivity reducing yield gap and sustaining supply
2018	Phase I genetic materials deployed in GLDC crop improvement by CGIAR centers - annually 8 crops X 3 trait clusters X 2 regions tested by NARS.	Publication, Reports, technical document	FP4.O1: New technologies improve production and productivity reducing yield gap and sustaining supply
2018	Breeding lines from Phase I enter the National performance trials or release - 8 crops X 3 trait clusters-3-4 lines per trait X 2 regions entered in NPT.	Publication, Reports by the CGIAR and Partner	FP4.O1: New technologies improve production and productivity reducing yield gap and sustaining supply
2018	Nursery management strengthened to support early generation seed availability for evaluations - 9 crops X 2 priority trait clusters (1° & 2°)- 20 lines per trait X 2 regions supplied.	Publication, Reports, technical document	FP4.O2: Robust and responsive global to national breeding systems produce and deliver novel varieties and allied innovations at appropriate scale and scope.
2018/19	New suite of resilient varieties released by NARS partners. (Phase 1 investments start being released)	Publication, Reports, Variety Registration Certificates, MoA reports	FP4.O1: New technologies improve production and productivity reducing yield gap and sustaining supply
2018	Studies conducted to inform the seed systems strengthening areas for target cereals and legumes - at least 1 study per crop x agrifood systems x region.	Publication, Reports, technical document	FP4.O2: Robust and responsive global to national breeding systems produce and deliver novel varieties and allied innovations at appropriate scale and scope underpinned by FP4 short term on seed systems outcome.
2018	Complementary partners engaged to support scaling efforts based on country strategies.	Publication, Reports by the CGIAR and Partner	FP4.O2: Robust and responsive global to national breeding systems produce and deliver novel varieties and allied innovations at appropriate scale and scope.

2020	NARS partners supplied with advanced breeding lines from GLDC - crops X 2 priority trait clusters (1° & 2°)- 30 lines per trait X 2 regions supplied.	Publication, Reports, technical document, copies of MTAs	FP4.O1: New technologies improve production and productivity reducing yield gap and sustaining supply
2020	TPEs guide deployment of new varieties in places where they have the highest likelihood for adaptability and adoption. At least two trials Africa and one in India by end of year two and annually for the rest of the CRP.	Publication, Reports, technical document	FP4.O2: Robust and responsive global to national breeding systems produce and deliver novel varieties and allied innovations at appropriate scale and scope underpinned by FP4 short term outcome on breeding program efficiency improvement.
2021	Improved legumes and dry land cereals meet current and emerging and diverse demand for food and feeds leading to increased competitiveness of GLDC commodities.	MoA reports, Publication, Reports by the CGIAR and Partner	FP4.O2: Robust and responsive global to national breeding systems produce and deliver novel varieties and allied innovations at appropriate scale and scope.
2018	Gender studies and opportunities for youth in agriculture conducted. At least 2 interventions per region studied- 2 in Africa and 2 in Asia.	Reports on gender analysis. This will also include research and training reports (with gender disaggregation), b) training manuals, fact sheets and other IEC material, c) number of female and youth farmers trained	FP4.O2: Robust and responsive global to national breeding systems produce and deliver novel varieties and allied innovations at appropriate scale and scope.
2022	NARs staff trained in new advances and analytics, limited infrastructure development. Annually at least 100 staff trained 10 per crop for Africa and Asia respectively.	a) Training reports (with gender disaggregation), b) training manuals, fact sheets and other IEC material, c) number of female and youth farmers trained, Infrastructure developed etc.	FP4.O2: Robust and responsive global to national breeding systems produce and deliver novel varieties and allied innovations at appropriate scale and scope underpinned by FP4 short term outcome on capacity.
2020	New varieties deployed as part of IPM/IDM minimize use of chemicals. Will target legumes and susceptible cereals, releasing 2-3 new varieties for each crop biannually per partner country.	Publication, Reports, technical document	FP4.O1: New technologies improve production and productivity reducing yield gap and sustaining supply.
2022	New varieties will minimize food contamination with mycotoxins are released	Publication, Reports, technical document	FP4.O1: New technologies improve production and productivity reducing yield gap and sustaining supply
2022	Snap millets that are easy to harvest, easy to shell, machine amenable varieties for harvesting, pesticide use etc.	Reports on gender analysis. This will also include research and training reports (with gender disaggregation), b) training manuals, fact sheets and other IEC material, c) number of female and youth farmers trained	FP4.O1: New technologies improve production and productivity reducing yield gap and sustaining supply
2022	Participatory breeding methods and Innovation platforms used as early as 2018 in partnership with FP2 and FP3 involving communities and partners in target countries. The new varieties will be the building block for such activities.	a) research reports, b) training manuals and other IEC material, c) local partners (including NARS, NGOs and CBOs), engaged, infrastructure developed, Partnerships leveraged.	FP4.O2: Robust and responsive global to national breeding systems produce and deliver novel varieties and allied innovations at appropriate scale

2022	NARS partners trained in participatory breeding methods, as well as gender and its role on adoption of new varieties. Other skills sets included Marker assisted breeding in partnership with FP5 At least. (Annually at least 100 staff trained 10 per crop for Africa and Asia respectively)	a) Training reports (with gender disaggregation), b) training manuals, fact sheets and other IEC material, c) number of female and youth farmers trained, Infrastructure developed etc.	FP4.O2: Robust and responsive global to national breeding systems produce and deliver novel varieties and allied innovations at appropriate scale
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PIM TABLE D - Flagship 5: Pre-Breeding and Trait Discovery

Year	Milestone description	Means of verifying	For which outcomes
2018	Prioritization of 2 traits in one crop for pre-breeding and identification of germplasm and cultivars to initiate pre-breeding	4 Publications/reports/technical bulletins	FP5O1: Prebreeding products through use of genebanks and other sources and modern tools to increase genetic diversity in breeding programs globally
2019	Development/refinement of technologies for overcoming barriers to wide crosses for 1 crop	4 Publications/reports/technical bulletins	FP5O1: Prebreeding products through use of genebanks and other sources and modern tools to increase genetic diversity in breeding programs globally
2020	Development/refinement of technologies for overcoming barriers to wide crosses 1 crop	2 Publications/reports/technical bulletins	FP5O1: Prebreeding products through use of genebanks and other sources and modern tools to increase genetic diversity in breeding programs globally
2021	Development of segregating populations for development of intermediate products for 1 priority traits in 1 crops	2 publications/reports and intermediate pre-breeding products for 1 trait in 1 crop available for breeders	FP5O1: Prebreeding products through use of genebanks and other sources and modern tools to increase genetic diversity in breeding programs globally
2022	Development of segregating populations for development of intermediate products for 1 priority traits in 2 crops	2 publications, and intermediate pre-breeding products for 1 trait in 2 crops available for breeders	FP5O1: Prebreeding products through use of genebanks and other sources and modern tools to increase genetic diversity in breeding programs globally
2022	Characterization and selection of intermediate products in 2 traits in 2 crops and making available to breeding programs	2 publications/reports, intermediate pre-breeding products available for 2 traits in 2 crops for breeders	FP5O1: Prebreeding products through use of genebanks and other sources and modern tools to increase genetic diversity in breeding programs globally
2018	Germplasm reference sets, other germplasm sets, mapping populations assembled and traits prioritized for discovery research in 3 legumes and 3 cereals	4 publications/reports/technical bulletins	FP5O2: Trait discovery and development based on genomics and phenomics to generate new markers to support trait integration through use of modern enabling technologies and forward breeding
2019	Precision phenotyping for key traits for these collections and genotyping to identify novel alleles for 2 traits in 2 crops that have limited variability in breeding populations.	4 publications/reports and 1 databases	FP5O2: Trait discovery and development based on genomics and phenomics to generate new markers to support trait integration through use of modern enabling technologies and forward breeding

2020	Marker development through a variety of genetic resources for top 2 priority traits in 3 legumes and 3 cereals.	8 publications/reports, diagnostic markers for 2 key traits in 6 crops, fully functional 1 databases	FP5O2: Trait discovery and development to be based on genomics and phenomics to generate new markers to support trait integration through use of modern enabling technologies and forward breeding
2021	Promising markers are validated and those found useful are promoted to forward breeding programs as required by breeding pipelines for target GLDC countries.	4 publications, forward breeding a routine in 4 crops, 1 marker assisted breeding products in 2 crops	FP5O2: Trait discovery and development based on genomics and phenomics to generate new markers to support trait integration through use of modern enabling technologies and forward breeding
2022	The validated markers are used in forward breeding programs as required by breeding pipelines for target GLDC countries.	4 publications, forward breeding a routine in 5 crops, 1 marker assisted products in 3 crops	FP5O2: Trait discovery and development based on genomics and phenomics to generate new markers to support trait integration through use of modern enabling technologies and forward breeding
2022	The validated markers are used in forward breeding programs in 2 major cereals and 3 major legumes as required by breeding pipelines for target GLDC countries.	4 publications, forward breeding a routine in 4 crops, 1 marker assisted breeding products in 3 crops	FP5O2: Trait discovery and development based on genomics and phenomics to generate new markers to support trait integration through use of modern enabling technologies and forward breeding
2018	All GLDC trait discovery programs migrate data to IBP, BMS, GOBII to manage genotypic and phenotypic data.	1 publications, and 2 fully functional databases	FP5O3: Development of enabling technologies platforms to be used for rapid trait discovery, trait validation, trait development, and trait
2019	Network of precision phenotyping sites is established across GLDC crops to provide unique and relevant testing locations for key traits. Gain-of-function or loss of function platform in 1 cereal and 2 legumes established	2 publications, and 2 fully functional databases. Transgenic platform for gain or loss of function in 3 crops	FP5O3: Development of enabling technologies platforms to be used for rapid trait discovery, trait validation, trait development, and trait introgression
2020	TILLING population developed at least in 1 cereal and 1 legume for forward and reverse genetic screens	2 publications and 1 TILLING population each in 2 crop available	FP5O3: Development of enabling technologies platforms to be used for rapid trait discovery, trait validation, trait development, and trait introgression
2021	One quality lab each at ICRISAT, IITA and ICARDA strengthened for priority nutritional quality traits of GLDC crops	2 nutritional labs established	FP5O3: Development of enabling technologies platforms to be used for rapid trait discovery, trait validation, trait development, and trait introgression

2022	Development/refinement of technologies for development of double haploids and/or rapid generation turnover in at least one legume and one cereal.	2 publications, proof of concept for DH in 2 crops, multiple generation per year in 2 crops	FP5O3: Development of enabling technologies platforms to be used for rapid trait discovery, trait validation, trait development, and trait introgression
2022	Capacity development of partners in using various technologies in gene discovery and breeding	10 training courses/workshops/conferences, 25 students trained by 2022	FP5O3: Development of enabling technologies platforms to be used for rapid trait discovery, trait validation, trait development, and trait introgression