Platform Annual Plan of Work and Budget (POWB) for 2017

AfricaRice
Benin

Bioversity International
Belgium

International Center for Agricultural Research in the Dry Areas
Morocco and Lebanon

International Center for Tropical Agriculture
Colombia

International Crops Research Institute for the Semi-Arid Tropics
India

International Institute for Tropical Agriculture
Nigeria

International Livestock Research Institute
Kenya

International Maize and Wheat Improvement Center
Mexico

International Potato Center
Peru

International Rice Research Institute
Philippines

World Agroforestry Center
Kenya

A. Platform LEVEL

A1. Delivery

A1.1 Adjustments/ changes to your Theories of Change

There are no adjustments to the proposed Theory of Change for the Genebank Platform.

A1.2 Highlight expected Outputs and Outcomes

The Genebank Platform's activities and outputs are extended from the Genebank CRP's investments to support the achievement of ***sub-IDO 4.4: increased conservation and use of genetic resources***. The singular most important output of the Genebank Platform, supported by more than 90% of the budget, is the provision, in an effective and timely manner, of healthy, viable, documented germplasm from the 35 crop and tree collections, which are maintained effectively in long-term conservation conditions in accordance with Article 15 of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).

The outcome of the **Conservation Module** is disease-free, viable, documented germplasm is made available. In 2017, the 11 genebanks are prepared to provide germplasm to respond to AFS-CRP's needs and to more than 2000 external users. Numerous individual Centre outputs are also expected as a result of the previous five years investment and ongoing funding to improve genebank operations, including the opening of new genebank facilities of AfricaRice (financed by Genebanks CRP) and ILRI (financed by ILRI), stratification of ILRI and CIAT collections in response to the conservation strategy on tropical and subtropical forages, piloting of an automated rice seed sorter at IRRI (financed by Genebanks CRP), and continued reconstitution of the active collection at ICARDA. New investment will support the development of methodologies to assess the coverage in collections of global landrace diversity and the review of the status and critical needs of the 11 Germplasm Health Units (GHUs).

The outcome of the **Use Module** is to enable more effective access and use of germplasm. An important activity towards the achievement of this outcome in 2017 is the piloting and adoption of Digital Object Identifiers (DOIs) in five genebanks and piloting in a further six genebanks.

The **Policy Module** is a new area of investment aimed at developing a supportive plant genetic resources (PGR) policy environment. The 2017 outputs include the submission of white papers on PGR policy to the Center Director Generals and a document to the ITPGRFA Governing Body, highlighting issues of importance to the CGIAR.

Fundamental to strengthening of genebank operations and efficiency is **capacity-development**, both internally in the CGIAR genebanks and externally to our national partners in the global system of crop diversity conservation. Developing the capacity of CGIAR and NARS is an integral part of nearly all Module activities, involving staff from genebanks, GHUs, & policy focal points throughout the CGIAR System. Focus in 2017 is on activities to strengthen staff succession as three more genebank managers (ICARDA, ICRISAT, ILRI) and a number of additional key genebank staff approach retirement. Resources and tools will be made available on the Genebank Platform website in 2017 and two Genebank Operations & Advanced Learning (GOAL) workshops will also take place this year.

A.1.3 Use of Different Funding Sources

Funding from Crop Trust endowment (bilateral) will be dedicated to activities under Module 1 (objective 1.1.1 & 1.1.2). W1 funds are used for personnel, operating and institutional costs of all Genebank Platform activities.

Table 1: Platform planned budget by module for 2017

Module Name	Planned Budget 2017 (USD 000s)		
	W1/W2	W3/bilateral	Total
Module 1	22,051	6,750	28,801
Module 2	1,340	0	1,340
Module 3	776	0	776
Management & Support Cost	693	0	693
Total	24,860	6,750	31,610

A1.4 Planned revisions to your Program of Work
There are no significant changes to the POW.

A2. Collaboration and Integration
A2.1 Contribution to and from CRPs
Through the support of the Genebank Platform, the CGIAR genebanks are expected to provide between 50,000 and 70,000 germplasm samples upon request to Agrifood System CRPs (AFS CRPs) for research, evaluation and breeding. In addition, they will respond to requests from users outside the CGIAR. Based on current trends, we expect the CGIAR to receive approximately 2,000 requests from external users, and to distribute at least 30,000 samples. The role of the GHUs in processing germplasm samples through phytosanitary controls on behalf of Centers' breeding and research programs, as well as genebanks, is also highlighted.

Genebank staff members collaborate with colleagues in AFS CRPs according to individual strategies tailored to specific crops and regions; each genebank plays a unique role depending on specific needs. The Genebank Platform will coordinate the System-wide implementation of DOIs and accession tracking. Genebanks will commence with the implementation of DOIs in 2017 and, from 2018 will help facilitate the deployment of DOIs to track research and breeding materials in AFS CRPs. The Genebank Platform will consult users to determine priority needs in terms of the development of data resources and query mechanisms, user germplasm sets and traits. A first consultation will take place in 2017 on the development of Genesys.

The Policy Module interacts with policy focal points throughout the System to build awareness capacity and engagement in PGR policy issues, and collaborates with CCAFS specifically to build capacity nationally for the implementation of the ITPGRFA.

A2.2 Cross-Platforms interactions
The Excellence in Breeding (EIB) Platform provides a unique forum for discussion and sharing of tools and approaches between the genebanks and breeding programs. Genebank Platform

representatives have been identified to participate in the EIB Module Advisory Groups 2 to 5. Genebank managers are participating in EIB planning meetings (e.g. in January, March, etc). All of the System-wide activities mentioned under A.2.1 are relevant here: the implementation of DOIs, developing means of interoperability between data resources and also the development of shared ontologies.

The Genebank Platform, with resources such as Genesys, provides tangible examples of System-wide data integration, successful communities of practice and management of big data. It will seek support from the Big Data Platform for integration at a broader level, for instance with genomics data. Development and implementation of related policy concerning access and benefit sharing is also a key area for both the Genebank Platform and both other Platforms. The development of coherent mechanisms to address concerns regarding the dematerialization of genetic resources through making genetic sequencing data available will be a focus for the Policy Module in 2017.

A2.3 Expected Efforts on Country Coordination

The Genebank Platform is not working directly on country coordination activities.

A3. Management, Governance and Monitoring, Evaluation, Learning

A3.1 Relevant Changes

There are no major changes to the Platform proposal.

A3.2 Monitoring, Evaluation, Impact Assessment and Learning Plans

On process evaluation, the Platform will develop and initiate a second phase of Quality Management System (QMS) strengthening. This will involve the establishment of a schedule of on-site and document reviews of individual genebanks and GHUs, focusing on their Standard Operating Procedures and specific thematic areas. The online reporting tool (ORT), developed during the Genebank CRP, will continue to collate and provide quantitative data on the status of individual genebanks, but will be improved to capture relevant new activities and indicators.

With the recruitment of an M&E specialist, the Platform aims to be more strategic in both process and outcome evaluations to ensure the alignment of activities and outputs to broader development outcomes. The implementation of DOIs potentially represents the most significant milestone in facilitating the assessment of the impact of the genebanks. DOIs, if implemented successfully, will allow the tracing of germplasm from the genebanks to their use in breeding and research programs and beyond.

B. Conservation Module

B.1 Delivery

B.1.1 Expected Annual Milestones towards Outcomes 2022

The Conservation Module supports the core genebank operations, the minimum activities that must be undertaken by the genebanks, without which the fundamental security of the collections and their use are at serious risk.

Performance indicators concerning the availability and security of the collections were agreed in the Platform proposal, and all Centers are now working towards achieving 2022 targets for these measures. By the end of 2017, the planned status of the aggregated collections will be: i) 79% of accessions are available, ii) 60% of seed and 75% of clonal accessions are safety duplicated, and iii) 80% of germplasm requests are addressed.

An important activity to increase the conservation of plant genetic resources is to identify genuine gaps in collections. Methodologies will be developed to assess the collections' coverage of landrace diversity, with CIAT leading a spatial analysis, and to review the representation of desirable traits with ICARDA leading an analysis of projected trait distribution for individual crops.

New technologies, knowledge and processes offer the possibility of raising standards to become more efficient and more effective. The genebanks must work strategically, both individually and together within the global system, to exploit new opportunities, conserve more diversity and respond to more demands while controlling costs. In 2017, the conservation Module aims to have at least: i) 30 SOPS in place, ii) 500 accessions successfully introduced into cryobanks, and iii) 20 NARS staff involved in capacity-building events.

With a view to achieving gains in conservation efficiency, IRRI will lead an initiative to improve seed quality management. In 2017, historical seed germination data will be collated and a workshop will be held to build capacity in genebanks to optimize processes for the enhancement of long-term storage. IITA will initiate and coordinate the collective activities of the GHUs to develop and improve procedures, implement and harmonize standards, and collaborate with NARS to build capacity in phytosanitary measures and compliance. A workshop will take place and an initial assessment of the status of GHUs will be conducted in 2017. CIP, IITA and Bioversity will continue to cryopreserve accessions to increase the size of cryobanks of potato, banana and cassava accessions. Further, CIP and IITA will work on the optimization of protocols to cryopreserve yams and sweet potato.

B.1.2 Output towards Outcomes 2022

With the secured support of the Genebank Platform, the genebanks contribute incrementally towards increasing the availability, representation, documentation, and safety duplication of the collections under their management, in effect adding annually to the Platform outcomes and CGIAR sub-IDO of increased conservation and use of crop diversity.

Use Module

B.2 Delivery

B.2.1 Expected Annual Milestones towards Outcomes 2022

It is the premise of this module that access to more and better quality accession-specific information will drive increased use of genebank accessions.

A primary activity in 2017 will be to incorporate DOIs into mainstream genebanking systems. Five genebanks (Bioversity, CIAT, CIMMYT, CIP and IRRI) will lead this activity in the first six months, followed by seven genebanks in the latter half of the year. The five lead genebanks will jointly carry out training (workshops, seminars, etc.) to extend the understanding of the use of DOIs into the user community, starting first with the breeders in their corresponding AFS CRPs.

Another important activity will focus on developing systems for associating trait data to accessions and cross-linking data between databases. A key element in 2017 is to determine how best to quantify traits where data has been collected using different scales (e.g. disease and pest resistance) or different developmental stages (e.g. drought resistance). Common ontologies will need to be harmonized. Efforts will be coordinated with, and in some cases facilitated by, the EIB platform and the AFS CRPs.

Genesys development continues in 2017 with an objective to accommodate trait information collated from the above activities. Systems will be developed with the AFS CRPs and breeders to link databases or directly upload data to Genesys. Related to this will be the integration of descriptor data on genebank accessions. In addition, for the development of query mechanisms better designed to meet the needs of users, a case developer will be hired to help define common user queries. EIB and the AFS CRP scientists will be surveyed to understand their needs and how these can be accommodated. All 11 genebanks will define at least one new germplasm subset from their collections on an annual basis.

B.2.2 Output towards Outcomes 2022

The work of the genebanks in the Use Module, both collectively and individually, increases the quality, quantity and targeting of data resources, and strives towards enabling more effective access and use of germplasm, adding annually to the Platform outcomes and CGIAR sub-IDO of increased conservation and use of crop diversity.

Policy Module

B.3 Delivery

B.3.1 Expected Annual Milestones towards Outcomes 2022

To promote System-wide policy engagement and compliance on PGR policy issues, and to 'ground truth' issues, the Policy Module will establish a CGIAR Network Genetic Resources Policy Committee. To strengthen connections with experts outside the CGIAR, the Policy Module will also establish a multi-stakeholder policy group, with representatives from private sector, civil society, ITPGRFA, Convention on Biological Diversity (CBD), Commission on Genetic Resources for Food and Agriculture (CGRFA), and public research organizations.

In 2017 the Policy Module will monitor developments in international PGR policy, survey CGIAR scientists' needs for operating in compliance with international PGR agreements. and develop two white papers for the DGs concerning PGR policy issues of importance to the CGIAR.

To promote compliance, the Policy Module will convene a PGR Francophone Policy workshop for CGIAR and NARS. It will also publish 'Guidelines for CGIAR operating in compliance with the Nagoya Protocol' and establish a PGR Policy Helpdesk to provide advice about compliance.

In 2017, a scientific paper will be drafted to address governance and access and benefit-sharing (ABS) challenges emerging as a result of radically increased technological capacities to generate and use genetic sequence data.

The Policy Module will coordinate representation and participation of the CGIAR in at least six international policy making meetings, including:

- Governing Body of the ITPGRFA,
- Working Group to Enhance the Functioning of the Multilateral System of Access and Benefit-sharing (WG-EFMLS) (of the ITPGRFA),
- Ad Hoc Technical Expert Committee on Genetic Sequence Information (of the CBD),
- Team of Technical and Legal Experts on ABS and Intergovernmental Working Group on PGRFA (of the CGRFA)
- An international consultation meeting on Access and Benefit-Sharing convened by the Secretariat of the CGRFA.

Further, the Policy Module will support participation of Platform scientists in meetings organized by national or regional partners where PGR policy issues are addressed, publish a decision-making tool for developing national policies to implement the ITPGRFA's multilateral system and co-organize, together with the ITPGRFA, CBD, the ASEAN Biodiversity Centre and the ABS Capacity Development Initiative, a 'Tandem workshop' at IRRI for national focal points of both the ITPGRFA and Nagoya Protocol from 10 Asian countries.

B.3.2 Output towards Outcomes 2022

The Policy Module provides the capacity and expertise to coordinate Systemwide consideration of PGR policy developments, engage strategically in international policy fora, and strengthen capacity within the system for full and transparent compliance. The Platform engages in the development of these processes to ensure that they create a supportive policy environment for CGIAR genebanks, breeding programs and national partners in the global system.

B.3 Contribution of W1-2 Funds

Table 2: Expected Annual Milestones (progress markers) towards Outcomes 2022

Module No.	Module Outcome 2022	Milestone 2017 Max. of 3 milestones per module outcome 2022	Mapped budget request for 2017	
			W1/ W2 USD (000s)	W3/ bilateral USD (000s)
Conservation Module	**Outcome 1.1:** Disease-free, viable, documented germplasm made available	79% accessions available 60% seed accessions safety duplicated 75% clonal accessions safety duplicated 80% relevant requests met	17,715	6,750
	Outcome 1.2: Crop diversity conserved in a rational and effective global system	30 SOPs in place 500 accessions successfully introduced into cryobanks 20 NARS staff involved in capacity building events	4,336	0
Use Module	**Outcome 2:** More effective access & use of germplasm enabled	50% accessions with DOIs Consultation on user needs for searching on Genesys undertaken One new subset for a defined user developed in each genebank	1,340	0
Policy Module	**Outcome 3:** Supportive policy environment developed	Two white papers submitted to DGs Presentation at six international PGR policy meetings Decision making tool for national implementation of the ITPGRFA developed	776	0

Disclaimer:

1) Budget amounts are mapped to outcomes from costing outputs and activities that are required to enable changes that we expect to happen.
2) It is important to acknowledge that the budget amounts are most likely directly not correlated to the work proposed for this year, but building on investment and outputs from the past.

Table 3: Expected Output 2017 towards Outcomes 2022

G = Gender, Y = Youth, CD = Capacity Development; 0 = not targeted, 1 = significant, 2 = principal

			Tagging of expected outputs 2017		
Module No.	**Module Outcome 2022**	**Expected key outputs 2017**	**G**	**Y**	**CD**
Conservation Module	Disease-free, viable, documented germplasm made available	Representative and documented germplasm in 35 crop collections secure and available, and disease free germplasm distributed upon request.	0	0	1
	Crop diversity conserved in a rational and effective global system	Improved capacity in CGIAR genebanks, GHUs and NARS to conserve crop diversity	0	0	2
Use Module	More effective access and use of germplasm enabled	New phenotypic and trait data available for searching and development of subsets.	0	0	1
Policy Module	Policy engagement and compliance ensured	Capacity strengthened for compliance and engagement in international PGR policy fora	0	0	2