



## **Crop Diversity Conservation for Sustainable Use in Indonesia**

### **Part I: Project Information**

#### **GEF ID**

10511

#### **Project Type**

FSP

#### **Type of Trust Fund**

GET

#### **CBIT/NGI**

CBIT **No**

NGI **No**

#### **Project Title**

Crop Diversity Conservation for Sustainable Use in Indonesia

#### **Countries**

Indonesia

#### **Agency(ies)**

FAO

#### **Other Executing Partner(s)**

Indonesian Centre for Agricultural Biotechnology and Genetic Resources Research and Development  
(Ministry of Agriculture)

#### **Executing Partner Type**

Government

#### **GEF Focal Area**

Biodiversity

#### **Taxonomy**

Focal Areas, Land Degradation, Sustainable Land Management, Sustainable Livelihoods, Integrated and Cross-sectoral approach, Sustainable Forest, Income Generating Activities, Sustainable Agriculture, Food Security, Climate Change, Climate Change Adaptation, Climate resilience, Biodiversity, Financial and Accounting, Payment for Ecosystem Services, Protected Areas and Landscapes, Terrestrial Protected Areas, Productive Landscapes, Mainstreaming, Agriculture and agrobiodiversity, Species, Plant Genetic Resources, Crop Wild Relatives, Threatened Species, Influencing models, Transform policy and regulatory environments, Convene multi-stakeholder alliances, Strengthen institutional capacity and decision-making, Demonstrate innovative approaches, Stakeholders, Indigenous Peoples, Type of Engagement, Participation, Information Dissemination, Consultation, Partnership, Private Sector, Individuals/Entrepreneurs, SMEs, Local Communities, Beneficiaries, Civil Society, Community Based Organization, Non-Governmental Organization, Academia, Communications, Education, Awareness Raising, Behavior change, Public Campaigns, Gender Equality, Gender Mainstreaming, Women groups, Sex-disaggregated indicators, Gender-sensitive indicators, Gender results areas, Participation and leadership, Access and control over natural resources, Access to benefits and services, Capacity Development, Capacity, Knowledge and Research, Targeted Research, Learning, Adaptive management, Indicators to measure change, Theory of change, Innovation, Knowledge Exchange

**Sector**

**Rio Markers**

**Climate Change Mitigation**

Climate Change Mitigation 0

**Climate Change Adaptation**

Climate Change Adaptation 0

**Submission Date**

3/16/2020

**Expected Implementation Start**

10/1/2022

**Expected Completion Date**

9/30/2027

**Duration**

60In Months

**Agency Fee(\$)**

588,306.00

**A. FOCAL/NON-FOCAL AREA ELEMENTS**

<b>Objectives/Programs</b>	<b>Focal Area Outcomes</b>	<b>Trust Fund</b>	<b>GEF Amount(\$)</b>	<b>Co-Fin Amount(\$)</b>
BD-1-4	Mainstream biodiversity across sectors as well as landscapes and seascapes through Sustainable Use of Plant and Animal Genetic Resources	GET	5,692,694.00	87,000,000.00
BD-3-9	Further development of biodiversity policy and institutional frameworks through the Implementation of the Nagoya Protocol on Access and benefit sharing	GET	500,000.00	5,815,024.00
<b>Total Project Cost(\$)</b>				<b>92,815,024.00</b>

**B. Project description summary**

**Project Objective**

To strengthen the conservation and sustainable use of globally significant Indonesian crop diversity, in the wild and on-farm, through sustainable practices and improved capacities, as well as strengthened enabling environment and the development of long-term incentive mechanisms

Project Compo nent	Finan cing Type	Expected Outcomes	Expected Outputs	Tr us t F u n d	GEF Project Financi ng(\$)	Confirm ed Co- Financi ng(\$)
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Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
1. Strengthen the enabling environment to promote the conservation and sustainable use of globally important crop diversity	Technical Assistance	<p><b>1.</b> Harmonized, cross-sectoral and inclusive policy frameworks support the conservation and sustainable use of globally unique Indonesian plant genetic resources ensuring the continued availability of the target species[1] for long-term <i>in situ</i> conservation</p> <p>[1] The five target crops of the project include rice, taro, yam, cloves, and nutmeg.</p>	<p><b>1.1</b> Cross-sectoral, inclusive national policy platform for mainstreaming conservation and sustainable use of important plant genetic resources established</p> <p><b>1.2</b> Policy, legal and capacity gap analysis in relation to the conservation and sustainable use of the target crops carried out</p> <p><b>1.3</b> Capacity of policymakers at national, provincial, and local level to plan and implement policies in support of the target crops enhanced</p> <p><b>1.4</b> Cross-sectoral National Strategy and Action Plan and policy recommendations for the conservation and sustainable use of the target crops developed in line with relevant international instruments, including UNDRIP[1]</p> <p><b>1.5</b> Access and benefit sharing (ABS) procedures harmonized, and capacities for their implementation developed, including in relation to traditional knowledge relevant to plant genetic resources, UNDRIP and in consideration of FPIC and Masyarakat Adat Plans[2] as outlined in Annex J</p>	GET	844,575.00	10,000,000.00

[1] United Nations Declaration on the Rights

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
2. Conservation and utilization of selected crops and their crop wild relatives (CWR) for sustainable agricultural development, food security and environmental stability	Technical Assistance	2. CWR and landraces (LRs) of target Indonesian crops are effectively safeguarded within an integrated conservation and use system to halt genetic erosion and contribute to national and global food and nutrition security in the face of climate change	<p>2.1 The diversity of CWR and LR of target Indonesian crops assessed, mapped and hotspots identified for active <i>in situ</i> and on farm conservation facilitating access and use of genetic resources while ensuring the respect of FPIC and Masyarakat Adat Plans as outlined in Annex J</p> <p>2.2 Capacity of all stakeholders[1] to deploy effective integrated, culturally sensitive and gender-sensitive approaches for <i>in situ</i>/on farm conservation and use of target Indonesian crops enhanced as per the FPIC processes and Masyarakat Adat Plans (including through establishment of genetic reserves and community nurseries/participatory plant breeding)</p> <p>2.3 Good practices and incentive mechanisms for <i>in situ</i>/on farm conservation and use of target CWR and LR identified, adopted and disseminated. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation as per Annex J</p> <p>2.4 A national network of stakeholders and conservation sites to support conservation, access and exchange of seeds and plant materials of CWR and LR of target crops developed, inclusive of Masyarakat</p>	GET	2,996,495.00	64,000,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
3. Development of market/non-market incentives and linkages in target sites for the target crops	Technical Assistance	3. Producers, Masyarakat Adat, processors, consumers, and researchers are aware and benefit from the sustainable use of the target crops	<p><b>3.1</b> Barriers limiting the production and use of target species in value chains assessed and strategies to address them developed, respecting the FPIC and rights to self-determined development of the Masyarakat Adat (see Annex J)</p> <p><b>3.2</b> Market and non-market incentives for farmers and Masyarakat Adat to grow the target crops in pilot communities identified and tested and agreed through the FPIC processes and Masyarakat Adat Plans</p> <p><b>3.3</b> Capacity of producers, processors, consumers, and researchers to use and benefit from the target crops enhanced</p> <p><b>3.4</b> Inclusive information campaigns (e.g., on diversity, nutrition, interculturality, cultural heritage) at the national, local, and provincial levels developed and implemented as per FPIC for Masyarakat Adat crops and foods, to foster greater appreciation and demand for the target crops</p>	GET	1,218,367.00	10,000,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
4. Strengthening knowledge management	Technical Assistance	4. Policy makers, farmers, Masyarakat Adat, breeders, extension officers and land managers have a one-stop access to knowledge on the target crops and their traits to support their conservation and use	<p><b>4.1</b> Knowledge management platforms documenting diversity, traditional knowledge (TK) and practices in support of <i>in situ</i>/on farm conservation and sustainable use of the target crops developed. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation as per Annex J</p> <p><b>4.2</b> Guidelines for improved use of the target crops, including processing, food safety measures, and recipes adapted to modern lifestyles based on traditional food systems developed. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation as per Annex J</p> <p><b>4.3</b> Tools and methods upscaled and disseminated. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation as per Annex J</p>	GET	610,867.00	3,839,128.00



Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Project Monitoring and Evaluation	Technical Assistance	Project M&E	Project M&E is conducted regularly	GET	227,500.00	591,633.00
Sub Total (\$)					5,897,804.00	88,430,761.00
Project Management Cost (PMC)						
GET			294,890.00	4,384,263.00		
Sub Total(\$)			294,890.00	4,384,263.00		
Total Project Cost(\$)			6,192,694.00	92,815,024.00		

Please provide justification

**C. Sources of Co-financing for the Project by name and by type**

<b>Sources of Co-financing</b>	<b>Name of Co-financier</b>	<b>Type of Co-financing</b>	<b>Investment Mobilized</b>	<b>Amount(\$)</b>
Recipient Country Government	Indonesian Center for Agricultural Biotechnology and Genetic Resource Research and Development (ICABIOGRD)	In-kind	Recurrent expenditures	32,664,085.00
Recipient Country Government	Indonesian Center of Food Crops Research and Development (ICFORD)	Public Investment	Investment mobilized	2,418,809.00
Recipient Country Government	Indonesian Center of Estate Crops Research and Development (ICECRD)	Public Investment	Investment mobilized	4,441,651.00
Recipient Country Government	Indonesia Center for Rice Research (ICRR)	Public Investment	Investment mobilized	34,136.00
Recipient Country Government	Indonesian Center for Agricultural Postharvest Research and Development (ICAPRD)	Public Investment	Investment mobilized	1,669,629.00
Recipient Country Government	Indonesia Center for Agriculture Technology Assessment and Development (ICATAD)	Public Investment	Investment mobilized	30,815,700.00
Recipient Country Government	Plant Variety Protection and Agricultural Licensing Center (PVTTP), Ministry of Agriculture	Public Investment	Investment mobilized	171,101.00
Recipient Country Government	Environment and Forestry Agency of Central Java Province	Public Investment	Investment mobilized	620,965.00
Recipient Country Government	Agriculture and Plantation Agency of Central Java Province	Public Investment	Investment mobilized	10,274,783.00

<b>Sources of Co-financing</b>	<b>Name of Co-financier</b>	<b>Type of Co-financing</b>	<b>Investment Mobilized</b>	<b>Amount(\$)</b>
Recipient Country Government	Agriculture Agency of North Maluku Province	Public Investment	Investment mobilized	1,168,727.00
Recipient Country Government	Agriculture and Food Security Agency of Magelang Regency	Public Investment	Investment mobilized	237,077.00
Recipient Country Government	Agriculture, Plantation and Food Security Agency of South Halmahera Regency	Public Investment	Investment mobilized	565,682.00
Recipient Country Government	Agriculture Agency of Tidore Islands City Regency	Public Investment	Investment mobilized	1,363,957.00
Recipient Country Government	Agriculture and Food Security Agency of Blora Regency	Public Investment	Investment mobilized	496,194.00
Recipient Country Government	Agriculture, Food Security and Fisheries Agency of Klaten Regency	Public Investment	Investment mobilized	1,674,000.00
Recipient Country Government	Agriculture, Livestock and Fisheries Agency of Lamandau Regency	Public Investment	Investment mobilized	59,253.00
Recipient Country Government	Agriculture and Food Security Agency of Seruyan Regency	Public Investment	Investment mobilized	113,019.00
Recipient Country Government	Agriculture Agency of Kapuas Regency	Public Investment	Investment mobilized	69,837.00
Private Sector	PT Sido Muncul	In-kind	Recurrent expenditures	139,183.00

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Indonesian Center for Agricultural Biotechnology and Genetic Resource Research and Development (ICABIOGRD)	Public Investment	Investment mobilized	3,817,236.00
<b>Total Co-Financing(\$)</b>				<b>92,815,024.00</b>

**Describe how any "Investment Mobilized" was identified**

The following exchange rate was used: USD 1 = IDR 14,319 (UNORE midmonth currency rate, January 2022). (Please refer to the overview table in the Documents section of the Portal.) // Total co-financing is USD 92,815,024 compared to USD 58,578,224 at PIF stage. Investment mobilized was identified in consultation with partners during the project development phase and totals USD 60,011,756 in public investment from national and subnational Government agencies. Recurrent expenditures total USD 32,803,268 including in-kind contribution of USD 32,664,085 from ICABIOGRD and USD 139,183 from private sector. // The co-financing contributions include: // (1) In-kind and public investment contribution from the executing agency ICABIOGRAD for land, buildings, gardens and facilities, including co-financing of PMU costs (such as office costs, National Project Coordinator). // (2) Public investment contributions from central government agencies, including research and development centres, for their work on biodiversity management, seed production, biogenetic resource collection and evaluation, germplasm maintenance, variety improvement, farmer capacity building, mentoring and release of varieties, mentoring to seed production and agriculture business, collection gardens, local food diversification research, research and development of postharvest technologies. // (3) Public investment contributions from the provincial government agencies for their work on community empowerment, economic development training, facilitation and production of seed and postharvest equipment, pest and disease control. // (4) Public investment contributions from local government agencies in the three provinces for their work related to the 5 target crops especially nutmeg and cloves (seed provision, farmer business, road construction etc), community empowerment, food diversification, local food processing training, included management of biogenetic resource of animal, plant and microorganism as well as the utilization of animal and plant biogenetic resources, program related to nutmeg and cloves extensification, value chain development, rehabilitation, maintenance of gardens (conservation), agriculture extension and development of village food estate. // (5) In-kind contribution from a private company for sharing their experience and identify potential opportunities for product marketing and community development. //

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
FAO	GET	Indonesia	Biodiversity	BD STAR Allocation	6,192,694	588,306	6,781,000.00
Total Grant Resources(\$)					6,192,694.00	588,306.00	6,781,000.00

**E. Non Grant Instrument**

NON-GRANT INSTRUMENT at CEO Endorsement

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Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)  
PPG Required **true**

PPG Amount (\$)  
200,000

PPG Agency Fee (\$)  
19,000

Agenc y	Trus t Fun d	Countr y	Focal Area	Programmin g of Funds	Amount(\$ )	Fee(\$)	Total(\$)
FAO	GET	Indonesi a	Biodiversit y	BD STAR Allocation	200,000	19,000	<b>219,000.0 0</b>
Total Project Costs(\$)					<b>200,000.0 0</b>	<b>19,000.0 0</b>	<b>219,000.0 0</b>

## Core Indicators

### Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
1300000.00	1300000.00	0.00	0.00

### Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
1,300,000.00	1,300,000.00		

### Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

### Type/Name of Third Party Certification

### Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

### Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

## Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted
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### Indicator 6 Greenhouse Gas Emissions Mitigated



Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO <sub>2</sub> e (direct)	0	498148	0	0
Expected metric tons of CO <sub>2</sub> e (indirect)	0	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO <sub>2</sub> e (direct)		498,148		
Expected metric tons of CO <sub>2</sub> e (indirect)				
Anticipated start year of accounting		2023		
Duration of accounting		20		

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO <sub>2</sub> e (direct)				
Expected metric tons of CO <sub>2</sub> e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
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**Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment**

	<b>Number (Expected at PIF)</b>	<b>Number (Expected at CEO Endorsement)</b>	<b>Number (Achieved at MTR)</b>	<b>Number (Achieved at TE)</b>
<b>Female</b>	10,000	10,055		
<b>Male</b>	10,000	10,055		
<b>Total</b>	20000	20110	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

The target area of 1.3 million hectares includes target areas in the three provinces of Central Kalimantan, Central Java and North Maluku Provinces. Beneficiaries are estimated based on the estimated number of farmers, Masyarakat Adat persons, and other stakeholders that will be engaged or will benefit from the project interventions. Please refer to the separate Excel file for the detailed calculations. // Benefits to biodiversity: Benefits to biodiversity resulting from the GEF investment include (1) conservation of globally significant biodiversity ? namely, globally unique crop wild relatives and local varieties of rice (*Oryza* spp.), taro (*Colocasia esculenta* (L.) Schott), yam (*Dioscorea* spp.), cloves (*Syzygium aromaticum* syn. *Eugenia aromatica*), and nutmeg (*Myristica* spp.), (2) sustainable use of the components of globally significant biodiversity, and (3) fair and equitable sharing of the benefits arising from the utilization of genetic resources, including by appropriate access to genetic resources. The project will also result in enhanced ecosystem services through the promotion of sustainable agricultural practices and sustainable land and forest management. The project interventions will result in enhanced ecosystems services and conservation of globally significant biodiversity through improved management in an area of 1.3 million hectares.

## Part II. Project Justification

### 1a. Project Description

#### 1) Global environmental and/or adaptation problems, root causes and barriers that need to be addressed

Genetic erosion of both rare and common plant and animal species is occurring at alarming rates across the globe (Hoban et al. 2021; Khoury et al. 2021). Genetic erosion is defined as the loss of diversity in a given area over time and measured by a decline of species, variety and/or within-variety variation (Thormann and Engels, 2015). If unstopped, the continued loss of genetic diversity will have serious repercussions on the capacity of humankind to adapt to more extreme, changeable, and uncertain environmental conditions. At the agricultural level, genetic erosion *in situ* is affecting plant species on-farm (particularly among local landraces), wild plant species with potential for increased resilience and nutrition (crop wild relatives) and wild-harvested species used for food in their natural habitats. Genetic erosion also poses a severe threat to food security in the long term, both at global and national level (FAO, 2019), by undermining the productivity, resilience, and adaptive capacity of agriculture.

Drivers of genetic erosion are: i) agricultural intensification using improved varieties leading to the displacement of local landraces and breeds, and ii) impacts of urbanization, habitat fragmentation, climate change, pollution, and globalization of markets).

The pivotal role of plant genetic resources in addressing global challenges is recognized by the Convention on Biological Diversity (CBD), which stresses that Contracting Parties should develop policies and measures that promote the sustainable use of genetic resources including PGRFA. However, the contribution of traditional crops, wild edible species and CWR to Indigenous Peoples' food systems, food security and nutrition, climate change adaptation and mitigation strategies depends on their conservation and accessibility for use (Tyack et al. 2020). In turn, this relies on increasing efforts to improve the mainstreaming of biodiversity conservation and sustainable use in policy and practice (Redford et al., 2015). More and more, the nexus between Biodiversity conservation and sustainable food systems is being researched and evidence is informing global and regional discussions. The importance of Indigenous Peoples' Food systems in maintaining biodiversity and in managing territories and natural resources in a sustainable and resilient way has been documented in different FAO and Partners' publications. The importance of native seeds and planting material for both wild, semidomesticated and domesticated varieties in sustaining food systems capable of maintaining ecosystems and biodiversity is being progressively understood by practitioners and policy makers. Conservation measures may be taken *in situ* either on-farm or in-garden for domesticated species, or in genetic reserves for wild species or *ex situ* in genebanks outside their natural habitats (including seed banks, field genebanks, *in vitro* and cryopreservation, botanic gardens, DNA banks, and pollen banks) (Dulloo, 2019).

The proposed Project focuses on the *in situ* conservation and sustainable use of globally important crops (namely, rice, taro, yam, nutmeg and clove), which has the potential to ensure crop production and to make food generation systems, production systems and livelihoods more resilient to shock and stresses, including those linked to climate change (FAO, 2019). Locally developed traditional varieties that grow predominantly in farmers' fields and Masyarakat Adat land and territories, and crop wild relatives (CWR), which continue to evolve adaptive traits in the environments in which they grow, have the potential to:

- ? increase productivity, food security and nutrition, and economic returns
- ? diversify the food base by incorporating new varieties of edibles
- ? reduce pressure of agriculture on fragile areas, forests, and endangered species

- ? make agri-food systems more diverse, stable, robust, and sustainable, particularly in marginal environments
- ? using the most adapted crops and varieties, thus decreasing chemical inputs for pest and disease management
- ? conserve soil and increase natural soil fertility and health
- ? contribute to sustainable intensification of farming systems.

However, gaps and challenges exist when it comes to knowing what to protect and how to protect it. The main barriers that prevent the conservation and sustainable use of the target crops are: i) uncoordinated and non-inclusive policy support; ii) limited capacity for plant genetic resources conservation and sustainable use; iii) limited access to plant genetic material and associated information; and iv) lack of interculturality, understanding and respect of the different cultural contexts in particular with respect to Masyarakat Adat.

i) A disconnect exists between the biodiversity, agriculture and other relevant sectors that can contribute to solving the multi-dimensional issue of economic and social development, food and nutrition security using biodiversity-based approaches as part of the solution. There is a clear need for harmonization of legislation across the sectors to promote cross-sectoral delivery of conserving and sustainably using the target crops. This results in a lack of joined-up thinking when it comes to policy or integration, and a rather poor enabling environment in which countries must manoeuvre.

ii) Research on the bottlenecks hindering greater use of plant genetic resources (Kell & Maxted, 2017) has highlighted the need for investments in both human and institutional capacity in all areas of sustainable use. This includes building capacity in: (a) plant breeding and crop improvement; (b) seed system, diversification, and marketing; (c) research and data access; (d) policy and economics; (e) public awareness, education and capacity building; and (f) cross-sector collaboration.

iii) While research has focused on mainstream crops, limited genetic material and information is available on the conservation status of starchy roots and tubers, pulses, fruits and vegetables, medicinal plants, and spices (FAO, 2019; Khoury et al. 2021). Regions recognised as being the centre of diversity of plant genetic resources, such as Indonesia, remain poorly studied when it comes to lesser-known crops that used to be widely grown and consumed, but which have fallen into agricultural neglect. The same holds true for establishing the rate of loss of species that continue to grow and evolve in the wild. The few genetic reserves for active *in situ* conservation that exist at the global level do not meet the required management standards to maintain populations of CWR and their genetic diversity long-term (Iriando et al., 2012). Furthermore, target species may fall outside protected areas requiring additional measures to maintain populations throughout a species range.

In addition to the limited knowledge on the importance of genetic diversity, and on baseline levels of genetic diversity from which to start, there is also limited guidance and capacity to connect science to action. Evidence of successful interventions and increased capacity building and networks are needed that can cross science-policy divides. More information is also required on the diversity typically ignored at the smaller geographic scale, such as plant genetic resources of crops grown in home-gardens, shifting cultivation practiced by Masyarakat Adat, and on small-scale farms, as well as in protected areas. Additionally, information needs to be collected on the reasons and incentives that induce small-scale farmers and Masyarakat Adat to maintain this diversity in the food systems, particularly those consisting in food generation and food production systems as well as those relying on farm.

When plant genetic resources are used, mostly by manufacturing companies, the trickle-down of benefits derived from their exploitation rarely reaches Masyarakat Adat and farmers (particularly women) who are known to play a vital role in maintaining this diversity, including the interaction between CWR and their domesticates (FAO, 2019; Casas et al. 2007). **Generally, farmers and particularly Masyarakat Adat are neither appreciated nor compensated for the public-good**

**conservation service they provide** and have no incentives to continue to maintain this diversity in their agri-food systems. In addition, well intended policies, plans, projects and activities are often implemented at the expense of Masyarakat Adat rights who see their right to Self-Determined development and Free Prior and Informed Consent not respected. Finally, market incentives to grow mainstream commodities are such that, in many parts of the world, farmers and Masyarakat Adat have given up growing traditional varieties and landraces and have abandoned ancestral habits such as carrying CWR into fields and home gardens for cultivation (FAO, 2019).

The good news is that growing demand from consumers in developed and developing countries for diversity and novelty foods is creating new markets for traditional foods. Many of these foods, often labelled as 'superfoods' are Indigenous Peoples' foods that have been consumed within Indigenous Peoples' Food systems for hundreds of years. Some of the best known, such as stevia, quinoa, kiwicha, tarwi, have been consumed by Indigenous Peoples and are often associated with ceremonies and cultural practices. Indigenous Peoples knowledge of medicinal plants and herbs has been recognized across the world. For example, the Baka in Central Africa are known to have used over 500 different medicinal and food plants, including several varieties of tubers. Plant genetic resources, often harvested in the wild, are valued for their medicinal or cosmetic properties in many traditional medicines, representing a growing market sector worldwide. In low-income countries, traditional medicine plays an important role especially among the poor, offering an affordable alternative for expensive commercial pharmaceutical products. The systematic documentation of locally important plant genetic resources and their ownership rights combined with the exploration of functional ingredients for commercial purposes have shown to work well to help sustain ecosystems successfully when there are schemes in place to share the benefits among the small farmers and Indigenous Peoples. In order to achieve these benefits, it is essential from the early stages to involve small farmers and Indigenous Peoples by consulting them and in ensuring processes of Free, Prior and Informed Consent (FPIC). This and generating new income opportunities for farmers in less-favoured environments where traditional varieties and landraces often have comparative advantages over commercial crops, can improve incomes, livelihoods, and food security strategies, which are powerful but barely explored incentives for the enhanced conservation and sustainable use of unique local plant genetic resources (IFAD and Bioversity International, 2021).

**Indonesia has a high degree of globally significant crops, varietal and wild relatives' diversity**, especially wild species of rice, taro and yams, distributed over a range of agricultural ecosystems and climatic zones (FAO, 2010). Indonesia, as part of the 7A Vavilov Centre of Diversity covering the Siam-Malaya-Java region, is a centre of origin and/or diversity for some of the major crops in the world, with regard to both crop wild relatives (including wild rice, banana, mango, breadfruit, sugarcane, taro, coconut, sweet potato, melon, sorghum, citrus, and aubergine<sup>[1]</sup>) as well as locally adapted cultivars. Indonesia is also one of the countries with the most country-endemic tree species and home to many common spice trees (many with medicinal properties) such as nutmeg (*Myristica* spp.) and cloves (*Syzygium aromaticum* syn. *Eugenia aromatica*). These unique, and oftentimes novel, plant genetic resources 'especially within species diversity (intra-specific diversity)' are central to the prosperity of Indonesia and the livelihood strategies of small-scale farmers, rural communities, and Masyarakat Adat. It is estimated that 40 million rural Indonesians rely on the country's biodiversity for sustenance (Sabran et al., 2019).

But the wealth of Indonesian horticultural, tree and plant diversity 'domesticated and wild' is not evenly spread across the country and is often found growing in Masyarakat Adat lands and territories and on the fringes of protected areas often at the interface of agricultural and natural ecosystems. Genetic erosion in farmers' fields has not been systematically documented in the country, although it has been reported that 75% of agricultural genetic resources have been lost due to the **lack of conservation and the excessive use of one or two varieties** (Sabran et al., 2019). In different Masyarakat Adat territories, FAO has been profiling with Indigenous Organizations four different food systems in Java and Kalimantan showing the rich variety of genetic resources utilized by Masyarakat Adat across the country. The role of this knowledge is essential in

guaranteeing the food generation capacity, sustainability and resilience of these Indigenous Peoples Food systems. For example, the Green Revolution launched in Indonesia in the late 1960s, led to erosion in traditional rice varieties. By the early 1990s, some 70% of 8-9 million hectares of wet rice fields were planted with one rice variety, IR64, in a monoculture system which in turn led to increased pest and disease risks including severe outbreaks of leaf blight disease, tungro virus and brown planthopper (Bottrell and Schoenly, 2011; Thorburn, 2015; Mackill and Khush, 2018). The use of high yielding varieties in monoculture systems such as this also resulted in the massive application of pesticides and the replacement of many traditional varieties on farm, thus narrowing the genetic base of agricultural crops, not just rice. Native varieties and landraces have been marginalized and are gradually disappearing from production systems. The native and local varieties that survive are mostly maintained by Masyarakat Adat, who continue planting and conserving these genetic resources on-farm.

Further, in the past five decades, **Indonesia has experienced the rapid loss and degradation of home gardens, orchards, farmers' fields and production forests** because of urbanization and population growth, as well as deforestation from illegal logging and other forms of land use change. The latter has particularly affected Masyarakat Adat including their food systems and their lands. In the target areas, land-use changes and job shifts are reported as one of the main drivers of loss of the diversity of traditional crops and their wild relatives. With Indonesia's population growth, economic development and increase in commercial farming, many farmers are changing profession, with landowners either converting land to other uses or selling it and moving to work in mining and oil-palm plantations. Overharvesting of natural resources by local communities for trade and domestic use has also contributed to habitat degradation and dramatic reductions in species' populations. This trend has also affected Masyarakat Adat across the country, with different peoples engaging in palm oil plantation, mine work and intensive farming. Where reforestation and large-scale agroforestry programmes have been carried out, they have generally focused on a few exotic tree species such as eucalyptus and teak and overlooked the potential use of native tree species.

Indonesia has been evaluated as one of the ten highest priority countries for collection of CWR, with more than 234 taxa established as a priority for conservation (Rahman et al., 2019). CWR are now only found in a small number of geographically dispersed sites, which are threatened by land conversion (to forestry, commercial agriculture), overgrazing, tourism, desertification, construction, and pollution. The full extent of these drivers on crop diversity in Indonesia is unknown. Further, the important economic crops, such as nutmeg and cloves, which originate from Indonesia, require urgent assessment and enhanced mainstreaming for their continued survival in cultivation and in the wild.

**Traditional and Masyarakat Adat knowledge associated with the management and use of native species** developed and transmitted through generations of women and men, mostly Masyarakat Adat, **remains poorly documented**. This culturally specific knowledge is threatened by cultural change and out-migration especially of younger generations from rural areas in search of education and job opportunities. Inadequate inclusive and culturally sensitive programmes placing Masyarakat Adat at the centre of the management have led to unintended situations that have not favoured the consideration of Masyarakat Adat Knowledge in the country. The number of unique and culturally distinctive Food systems practiced by Masyarakat Adat in Indonesia is unknown and requires further intercultural research. The evidence from the profiles undertaken by different actors is that the richness and variety of edibles wild, semidomesticated and domesticated utilized by Masyarakat Adat is much larger than those utilized in others agri-food systems. These findings coincide with similar evidence from the research undertaken since 2008 by FAO with Bioversity and McGill in different Indigenous Peoples' food systems across the world.<sup>[2]</sup> The limited market value and thus income obtained from the sale of traditional fruit and vegetables and the marginally higher incomes earned by working in rubber and oil plantations, agroforestry and mining have driven farming communities in forest buffer zones to stop cultivating and/or managing native crops, tree and plant species. In addition, limited investment by research organizations and

agricultural extension services to create markets and income from native species exacerbates this trend. In the Southeast Asia region, CWR will be important at the national and regional level, to increase the genetic diversity of crops which is being lost to genetic erosion. While, at the global level, wild relatives from this region could be used for cultivar development to offset the predicted changes in the tropical belt (Jarvis et al. 2008).

While nationally, there is commitment to conserving biodiversity and plant genetic resources overall, and a significant number of laws and regulations have been approved targeting the conservation of biodiversity, limited steps have been taken to address the recommendations highlighted in the Indonesia country report prepared for the *Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture* (FAO, 2010). This includes steps to improve the coordination between national, provincial and district/regency level implementation of these regulations, particularly for *in situ* management, and harmonization of legislation across the sectors (forestry, agriculture, environment, health, social development, value chains) to promote cross sectoral delivery of conserving and sustainably using plant genetic resources. The report also emphasized the need to continue surveying, collecting, and documenting the conservation status of plant genetic resources, especially wild plant genetic resources and landraces growing in remote areas. To date, however, legal/regulatory frameworks in Indonesia related to biodiversity have mostly been related to ecosystems, and species-level treatment has rarely been related to genetic resources. **The management of genetic resources has been limited to breeding programmes, and to date has not involved farmers nor Masyarakat Adat in the utilization or protection or crop genetic diversity.** In addition, the Masyarakat Adat have not been included in the policy framework and breeding programmes. Low awareness of the contribution of plant genetic resources to environmental ecosystem benefits, weak institutional platforms for collective action and the lack of access and benefit sharing agreements for the use and conservation of native tree and plant biodiversity have further limited the number of farmers and Masyarakat Adat involved in biodiversity conservation practices.

In view of the above threats and challenges, the main barriers that the project seeks to address, by component, are detailed below:

Note: Any project activities impacting, including and targeting Masyarakat Adat, are to be implemented following the *Masyarakat Adat Plan*, in order to ensure full participation of the Masyarakat Adat, and that their rights to self-determined development and FPIC are respected. Please refer to Annex J for more details.

***Barrier 1 ? Current enabling environment (institutions, laws and policies) for conservation and sustainable use of the target crops is fragmented and incomplete at national, regional and local levels in Indonesia (addressed by Component 1)***

This barrier, addressed by Component 1, consists of the following elements:

- |  |
|--|
| <ol style="list-style-type: none"><li>1. Enabling environment for conservation and use of the target crops is fragmented and incomplete at national, regional, and local level</li><li>2. Institutional arrangements and legal instruments are poorly developed or do not address issues in Access and Benefit Sharing (ABS)</li><li>3. Limited institutional capacity to implement integrated approaches for the conservation and sustainable use of the target crops</li></ol> |
|--|

*Current enabling environment (institutions, laws and policies) for the conservation and sustainable use of the target crops is fragmented and incomplete at national, regional and local levels in Indonesia.* Currently, a disconnect exists between the agriculture, environment and other sectors such as health, social development and education. In general, there has been limited collaboration and coordination among the relevant sectors that can contribute to solving the multi-dimensional



issue of biodiversity loss, economic growth, food and nutrition security using biodiversity-based approaches as part of the solution. Environmental, agricultural, social development policies and programmes are rarely coordinated and currently no cross-sectoral, national policy platform exists to mainstream the conservation and sustainable use of plant genetic resources. An additional barrier is the limited coordination between national, provincial and district/regency level implementation of existing regulations. There is a clear need for harmonization of legislation across the sectors (forestry, agriculture, environment and markets/value chains) to promote cross-sectoral delivery of conserving and sustainably using the target crops. Additionally, current policies and programs focus mainly on the few major crops and varieties and do not sufficiently encourage crop diversity.

*Limited institutional capacity to implement integrated approaches for the conservation and sustainable use of the target crops and Access and Benefit Sharing (ABS)*

Despite ratifying the Nagoya Protocol of the United Nations Convention on Biological Diversity (CBD) in 2013 that regulates access to genetic resources and promotes the fair and equitable sharing of benefits arising from their use as well as the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) in 2006, Indonesia has a limited harmonized regulatory and administrative framework to nationally implement the two agreements in a mutually supportive manner (Humphries et al. 2021). Coordination between the national focal points and the technical inter-linkages between the two instruments/sectors need to be strengthened. Implementation of the Nagoya Protocol (which entered into force in 2014) is at an embryonic stage in Indonesia and many other parties to the CBD are struggling to adopt legislative, administrative or policy implementing measures at the national level (Mardiastuti, 2019). Although Indonesia has a single competent national authority (CNA) ? the Ministry of Agriculture ? that deals with genetic resources linked to food and agriculture more broadly, roles and responsibilities linked to ABS are shared among several ministries (Table 1). It follows that there is limited capacity to fully promote and exploit biodiversity and agriculture using integrated approaches. Although a regulatory framework and procedures for Prior Informed Consent (PIC), Mutually Agreed Terms (MAT), and Material Transfer Agreement (MTA) do exist, procedures regarding the free, prior and informed consent from Masyarakat Adat, farmers and local communities as well as benefit sharing still need to be harmonized.<sup>[3],[4]</sup>

***Barrier 2 ? Key actors do not have the necessary knowledge, capacity, and incentives to secure the long-term conservation and sustainable use of the target crops on-farm and in situ (addressed by Component 2)***

The barrier consists of the following elements, addressed by Component 2:

1. Genetic erosion of the target crops (including CWR) has not been systematically documented
2. Limited capacity to support long-term conservation of target crops and their CWR
3. Farmers and other land managers have limited incentives to catalyze dynamic on-farm and *in situ* conservation of the target crops (including CWR).
4. Absence of a national network of stakeholders to support access and exchange of plant genetic resources material and lack of a national strategy/plan for the *in situ* conservation of the target crops (including CWR)

*Genetic erosion of the target crops and their CWR has not been systematically documented*

There is evidence that many Indonesian crops are undergoing genetic erosion caused by increased genetic uniformity of crop cultivars and the reduced use of local cultivars, for example of rice and taro (Rahman et al., 2021). The conversion of traditional agricultural systems to monocultures is reducing crop diversity on-farm, where these crops evolve most of the adaptive traits needed by farmers and breeders. Farmers and breeders need access to advanced germplasm to overcome production constraints, and to boost incomes via new product development for domestic and export markets. At present, there is no comprehensive threat assessment or report documenting the conservation status of the target crops and their CWR. Little is known of the occurrence of local



cultivars and wild types growing in and outside conservation areas and in farmers' fields. The assessments carried out as part of the PPG (see [Baseline scenario](#)) have demonstrated that diversity of the target crops still exists in the project sites, however, we do not know over what area of cultivation, nor across what agroecological conditions. What is needed is an accurate measure of this diversity and the monitoring of genetic diversity loss from farmers' fields over time, with surveys undertaken on a regular basis. Surveying however only provides information and does not prevent genetic or biodiversity loss, which can only be achieved via political action and effective interventions. Note: Any surveys should be carried out whilst following the *Masyarakat Adat* Plan (more details in Annex J), in particular in respect to the rights to self-determined development of the *Masyarakat Adat* and their FPIC.

Short-term conservation of Indonesian crops occurs in smaller genebanks scattered across several research centers, while long-term conservation is carried out by the Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development (ICABIOGRD) genebank equipped with seed storage facilities (Hidayatun et al., 2017). ICABIOGRD also carries out *in vitro* conservation and is responsible for field collections. On-farm conservation, on the other hand, is monitored by the Assessment Institute for Agriculture Technology (AIAT/BPTP) (Hidayatun et al., 2017). Currently, no seed collections exist for the target crops except for the 3,400 accessions of rice and their CWR (Hidayatun et al., 2017). Although field collections of several tuber crops exist, the facilities are known to face water shortages during the dry season and often have problems linked to weed and pest control (Hidayatun et al., 2017). Furthermore, financial constraints sometimes limit proper regeneration. Maintaining living collections of vegetatively propagated root crops such as taro (either in the field or under tissue culture) is expensive, and many institutional *ex situ* collections have been reduced in size because of disease or lack of sustained funding (Ebert & Waqainabete, 2018). The economic downturn caused by the COVID-19 pandemic has further exacerbated the problem and driven the Indonesian government to reduce operational costs and limit activities linked to plant genetic resources conservation (Hidayatun et al., 2022).

*Limited capacity to secure the long-term conservation and sustainable use of the target crops*

Custodian farmers, protected areas' managers, breeders, extension services, and other land managers, have limited knowledge, experience, and capacity to secure the long-term conservation and sustainable use of the target crops to deploy effective integrated conservation approaches and utilization of these crops. Limited efforts have been made yet to promote the *in situ* conservation of CWR and wild plants for food production.<sup>[5]</sup> While the public extension service is a well-established knowledge transfer system, stakeholder consultations conducted during PPG indicated that extension officers do not always have sufficient capacity, and their knowledge on biodiversity, traditional crops or alternative farming methods is limited. Similarly, Irawanti et al. (2014) found that extension workers lack training materials and that their own knowledge is limited by their lack of experience and training opportunities. Limited funding was also a constraint in the extension sector.

*Farmers and other land managers have limited incentives to catalyze dynamic on-farm and in situ conservation of the target crops.*

In Indonesia, the cost of maintaining diversity for local, national and global benefit is currently borne by smallholder farmers. To secure socially desirable levels of conservation for the greater public good and to protect the priority crops and CWR that are at the most risk of extinction, there must be recognition of the value of farmers' work in maintaining such agricultural biodiversity. Currently there is limited provision of positive incentives compensating farmers for maintaining certain crop species/traditional varieties at their own cost for reasons other than just high output. Indonesia organizes a Genetic Resources Congress every two years, during which custodian farmers are awarded prizes for the conservation services they provide. However, there are still limited monitoring mechanisms and government investments targeting the sustainability of these schemes such as building farmer capacity to continue conserving the target crops.<sup>2</sup>

***Barrier 3 ? Limited market incentives, value chains and awareness of the benefits of the target crops (addressed by Component 3)***

This barrier, addressed by Component 3, is described below:

1. Value chains for target crops are poorly developed
2. Lack of market incentives for farmers to produce the target crops thereby contributing to their conservation.
3. Limited market demand for target crops despite farmers growing or managing the species mostly for own consumption or cultural value
4. Limited data and information, including traditional knowledge of the benefits of the target crops

Mainstreaming biodiversity and ecosystem values into the agrifood value chain remains a major challenge in Indonesia. Recurring issues affecting value chains for the target species were identified in meetings with government agencies, farmers, and home industries across the target provinces and districts/regencies. These include:

***Lack of market incentives for farmers to produce the target crops thereby contributing to their conservation***

The preliminary baseline assessments undertaken as part of the PPG revealed the lack of output markets, market imperfections and failures, and low or fluctuating prices. This appears to be a systemic problem for all target crops with mutually reinforcing negative feedback loops, i.e., the low market demand drives lower production, and the low production discourages any significant investment and industry development for these crops. Additional barriers included low prices and demand for the crops, lack of data and information to boost demand, low interest among stakeholders, preference for other crops, and limited marketing, technology, and investments. So far, private sector and government programs have focused on promoting the cultivation of mainstream crops and cash crops such as palm oil and improved rice varieties.

***Poorly developed infrastructure and markets***

Traditionally, the consumption of agricultural biodiversity has taken place through non-market channels and subsistence use, and in many areas marketing pathways remain poorly organized. Market entry remains difficult for farmers and other user groups hoping to trade in traditional crops. Increased commercialization will demand increased uniformity of the product, larger quantities supplied on a regular and reliable basis, as well as attention to issues of food safety. High transaction costs, poor infrastructure and a lack of regulations cause producers to capture a small fraction of the profits generated by the final sale of the product, thus discouraging investments in their production systems. This situation is complicated by the absence of biodiversity certification schemes that could bolster the market value of agricultural biodiversity. These issues all influence access to national and international markets of the biodiversity of concern in this Project.

Although efforts to develop value chains for these minor crops are limited in the target sites, opportunities exist with respect to rising consumer awareness of the need to diversify diets while protecting the environment and sustaining local producers. Discussions with stakeholders revealed that research and development on diversification, processing and marketing of local crops could help overcome some of the above challenges, with extension agents acting as the main mediators for knowledge transfer.

***Barrier 4 ? Limited collation and codification of available knowledge to inform policy and to generate public support (addressed by Component 4)***

The barrier, addressed by Component 4, is detailed below:

1. No database/no multidisciplinary and cross-sectoral platforms
2. Data scattered across several ministries
3. No guidelines or best practices documented

#### *Poor information management and accessibility*

Plant genetic resources material (germplasm) or associated information required for its effective conservation and sustainable use is difficult to come by. Currently, information is fragmented, scattered in various publications and reports or not easily accessible databases. There is no comprehensive national portal or repository of information on the target crops that might better facilitate their use and which would be a vital tool for practitioners and decision makers. Furthermore, there may be issues related to standardisation, methodology and quality of data. Limited information is available on the diversity of most of the target crops with some information available on crops that are mainstream commodities, such as rice.<sup>[6]</sup>

In Indonesia, several records and databases relating to genetic resources exist that could be built upon to include matters linked to ABS; for example, the Indonesian Biodiversity Information System (InaBIF) maintained by the Indonesian Institute of Sciences (LIPI), or the Plant Species Database (as mandated by the Global Taxonomy). The MoEF has also developed several databases (mostly relating to national parks and protected areas), which include plant and animal species to be found within these protected spaces. Another existing database relates to environment and wildlife crimes, but biopiracy issues are not included. In 2019, the Indonesia Biology Consortium (KOBBI) launched the Indonesia Biodiversity Index, which attempts to provide a comprehensive database on the archipelago's rich diversity of flora and fauna. The index was devised to measure the country's biodiversity status, including at the regional level, and detail the results of sustainability programs across Indonesia. It was also developed to help policymakers better plan policies and legislation on biodiversity management, including identifying priority areas where biodiversity management is most needed. However, efforts to formulate reliable indicators to capture trends in biodiversity conservation status are reportedly still outstanding (Adelayanti, 2020). Linkages could also be sought with the platform being developed by the Legal Services Division of the Ministry of Law and Human Rights (*Kemenukham*). The platform, with its foundation in Law 13/2017 concerning Common Intellectual Property Data, seeks to bring together Intellectual Property (IP) data currently scattered across several Ministries, promote cultural identity, and record IP in the form of traditional knowledge, traditional cultural expressions, genetic resources, and Geographical Indications of origin. Registration and the protection of IP could vest communities living in the target districts/regencies, such as the Masyarakat Adat, with their FPIC, in food innovations made with the target crops and create the much-needed economic incentives for farmers to continue growing and maintaining traditional varieties and their crop wild relatives.

#### *Complex regulations and standards for novel foods*

There are currently no specific regulations or guidelines on the use of novel food and ingredients in Indonesia. However, demanding standards for novel foods are required by the export market placing a considerable burden of proof on those introducing traditional biodiverse foods and derived products on the market. The EU Novel Foods Regulation (EU 258/97), for example, imposes non-tariff trade barriers for heritage foods from developing countries and has discouraged investment in supply chains and market development<sup>[7]</sup>. Novel foods entering the EU must be documented free of allergenic, toxic, and other hazards before they can be offered for sale. The cost of conducting a scientific evaluation for such foods by developing countries is considerable. Future development activities promoting export food chains involving neglected food species will have to increasingly accommodate food safety concerns in project design.

#### *Negative perceptions and attitudes towards local, traditional foods*

There is low recognition of value and perception of traditional foods as being 'food for the poor' or 'famine foods' to be harvested when staple crops fail, or as un-modern compared to Western diets and considerable effort is required to overcome this barrier. Even in rural areas, where the use of a wide range of foods remains an option, effective promotion may be necessary to preserve not only agricultural biodiversity but also the skills and knowledge to make use of it.<sup>[8]</sup> Further, traditional foods are often perceived as inconvenient due to time needed for gathering, preparing, and cooking (e.g., to reduce toxicity of taro and yams) and competition may be hard against white

rice, instant noodles and wheat flour, which in many cases are cheaper. The consumption of traditional foods may also be discouraged because the product is perceived as being of lower quality. In this regard access to appropriate technology or infrastructure may be an important barrier.

*Lack of evidence demonstrating or comparing the most (cost-) effective methods and approaches for implementing conservation and use strategies:*

If conserving and using plant genetic resources of the target crops is to compete as a viable intervention to meet growing environmental challenges, and if such approaches are to enter the mainstream, information must be available on what works on the ground. A broad spectrum of resources is deemed important to support the work of practitioners in this field (Kell & Maxted, 2017). These include:

- ? Clear guidelines on the implementation of plant genetic resources-related policy
- ? Directory/network of potential collaborators/advisors in aspects of sustainable use
- ? Access to plant genetic resources-related publications
- ? Case studies illustrating aspects of successful implementation of sustainable use strategies
- ? E-learning/training courses, in particular on the right of Free, Prior and Informed Consent and self-determination of Masyarakat Adat.
- ? Printable educational/training materials

## **2) Baseline scenario and any associated baseline projects**

In recent years, the Government of Indonesia (GOI) has adopted a number of legislative, administrative or policy measures at the national level, which provide a suitable baseline for the proposed *Crop Diversity Conservation for Sustainable Use in Indonesia* project. These measures demonstrate efforts to address both the conservation and sustainable use issues in agricultural landscapes through better management and promotion of plant genetic resources. The GOI recognizes the highlighted threats, barriers and the associated problems of agrobiodiversity loss and ecosystem degradation highlighted above and has developed strategies and plans, which are starting to address these issues. These measures and associated budgets provide a strong baseline for ongoing biodiversity mainstreaming in the country, however additional efforts are needed to facilitate more holistic and integrated approaches to plant genetic resources conservation and use. Further, better planning to coordinate and bring together the relevant sectors and agencies and to integrate current initiatives, to improve the involvement of, and benefits to, farmers and communities is urgently needed. The main national policies and plans, baseline situation and baseline investments in the target areas are described below.

## National policies and plans and institutional arrangements

The Nagoya Protocol was ratified in 2013 through Law No. 11 concerning Ratification of the Nagoya Protocol: Number P.2/2018, which addresses access to species' genetic resources and benefit sharing for its utilization. The ABS national focal point is the Director General of Natural Resources and Ecosystem Conservation of the Ministry of Environment and Forestry. With regard to the ITPGRFA, it was ratified through Law No. 4 of 2006 concerning the Ratification of International Treaty on Plant Genetic Resources for Plant and Agriculture. Of particular relevance to the proposed project are Article 5.1d ? Promote *in situ* conservation of wild crop relatives and wild plants for food production, including in protected areas, by supporting, inter alia, the efforts of indigenous and local communities; and Article 6 ? Sustainable Use of Plant Genetic Resources. The national focal point is housed by Center for Biotechnology and Genetic Resources (ICABIOGRD/BB Biogen) in the Ministry of Agriculture.

The regulation of access to genetic resources (SDG in Bahasa) and their utilization, especially in regard to preservation and utilization of plant genetic resources has been regulated in various laws and regulations by the Government of Indonesia prior to the ratification of the Nagoya Protocol. Preservation and utilization of plant genetic resources is regulated through preparation of Material Transfer Agreement through Minister of Agriculture Regulation (Permentan) No. 15 the Year 2009 ([Kementan, 2009](#)) for working unit in Agriculture Research and Development Agency, Regulation of Minister of Agriculture (Permentan) No. 37 Year 2011 concerning Preservation and Utilization of Genetic Resources ([Kementan, 2011](#)); Permentan No. 217 Year 2018 concerning National Commission on Genetic Resources; and Regulation of Head of Indonesian Institute of Sciences (LIPI) No. 9 Year 2014 ([LIPI, 2014](#)) for material transfer agreement in LIPI, and Regulation of Minister of Health (Permenkes) No. 657 Year 2009 concerning delivery and use of clinical specimens, biological material and information of its content ([Kemkes, 2009](#)).<sup>[9]</sup> However, specific regulatory instruments for access to genetic resources and equitable and balanced distribution of benefits from the use of genetic resources over the Convention on Biological Diversity have not yet been regulated. Besides, recognition and efforts to protect traditional knowledge related to genetic resources and the utilization of the wealth of traditional knowledge, especially the distribution of benefits resulting from its utilization, also not yet regulated in the legislation.<sup>[10]</sup> As explained above, gaps still exist in legislation and regulations related to the Nagoya Protocol, although a regulatory framework and procedures regarding PIC, MAT and MTA do exist. The roles and responsibilities relating to ABS across Indonesian ministries are outlined below.<sup>[11]</sup>

**Table 1.** Roles and responsibilities relating to ABS shared across Indonesian ministries

Name of Ministry/Institution	Roles and responsibilities relating to ABS
Ministry of Environment and Forestry (MoEF) Directorate of Biodiversity Conservation, Directorate General for the Conservation of Natural Resources and Ecosystems	? Manages and conserves genetic resources in terrestrial ecosystems, especially of wild origin, including microorganisms ? National Focal Point for the CBD and Nagoya Protocol
Ministry of Agriculture (MoA)	? Manages cultivated genetic resources (for food and agriculture), including for plants and animals ? National Focal Point for the ITPGRFA ? Competent National Authority (CNA) for the Nagoya Protocol
Ministry of Fisheries and Marine Affairs	? Manages and conserves genetic resources in marine ecosystems, especially of wild origin
Ministry of Law and Human Rights	? Grants patents
Ministry of Research, Technology and Higher Education	? Grants permits to foreign researchers to conduct research and take samples
Ministry of Foreign Affairs	? Responsible for political relationships between/among countries
Ministry of Health (MoH)	? Responsible for public health, including in relation to viruses and pathogens
National Agency for Research and Innovation (Badan Riset Inovasi Nasional)	? Responsible for scientific decisions regarding national matters; provides approval of permits for



## Baseline information on the target sites

During the project identification phase (PIF), FAO and the Ministry of Agriculture (MoA), via the Indonesian Agency of Agricultural Research and Development (IAARD), selected three distinct geographic areas containing the greatest landscape, economic and cultural diversity and representing the main ecoregions of Indonesia. These were confirmed during PPG and more detailed baseline assessments were conducted. The **Maluku Islands** (or Moluccas) are the most complex of the Indonesian islands from a geological perspective, their morphology resulting from their position at the crossroads of four tectonic plates and two continental blocks. The islands of this archipelagic province (805 in total) are mostly mountainous with very few coastal plains. By contrast, **Kalimantan** (the Indonesian part of Borneo) is the third largest island in the world, largely characterised by lowland rain forests and inland montane rain forests. **Java**, on the other hand, is one of the most densely populated islands of Indonesia and of the world. The island preserves some montane rainforests as well as dryer, semi-evergreen rain forests. Within these areas, target provinces were selected based on pre-defined criteria (listed further below) and to capture the widest possible diversity of five priority crops of national and global significance for adaptation to climate change, food and nutrition security and medicinal value, while benefiting people's incomes. The five target crops are described below.

? **Rice** (*Oryza* spp.) ? Rice is the most important cereal crop in Indonesia, accounting for 97-100% of household consumption, both in rural and urban settings. Globally, rice ranks second to maize among the most important cereals produced in the world. Germplasm resources comprised of wild relatives, traditional and modern rice cultivars are sources of desirable traits in breeding programs striving to produce higher yields, and better resistance to biotic and abiotic stresses. At the same time, local landraces and traditional varieties may possess inherent nutritional properties that could contribute to solving malnutrition affecting countries worldwide. The Indonesian archipelago has a long history of rice production across a broad range of rice growing environments, which has resulted in a diverse array of local Indonesian rice varieties. Although some local landraces have been used in modern breeding programmes, the potential of many of these landraces remain unexplored. Wild rice (*Oryza rufipogon*) is also found in Indonesia and could hold potential for future plant breeding. As elsewhere, smallholder farmers in Indonesia have contributed to preserving the diversity of rice genetic resources as they cultivate, select, and nurture their favourite cultivars.

? **Taro** (*Colocasia esculenta* (L.) Schott) is an important staple food crop in many countries in the tropical belt. Prior to the opening of global trade routes and the transport of agricultural commodities, taro was the world's most widely cultivated starch crop, extending from India and SE Asia to NE Asia, the Pacific Islands, Madagascar, Africa, and the Mediterranean (Ebert & Waginabete, 2018). As one of the centres of origin for taro, Indonesia holds significant amounts of taro diversity. 182 genotypes of taro have been identified to date. However, recent times have seen a decrease in land devoted to the cultivation of this tuber crop, leading to a loss of traditional cultivars and genetic diversity. Natural populations of wild taro can still be found in Indonesia but are mostly harvested for traditional uses. However, taro diversity remains unexplored, and the species is inadequately conserved.

? **Yams** (*Dioscorea* spp.) ? Another important food crop, yam is fourth in line in order of importance after potatoes, cassava, and sweet potatoes, contributing approximately 10% of the total global root and tuber production. The species also plays a primary role in the diets of many rural and forest-dwelling communities during times of food scarcity, as it is a perennial root crop that does not rot away if unharvested thus representing a strategic food reserve for local communities. Yams hold potential food, medicinal and economic value but their wider utilization is limited due to the presence of anti-nutrients. Wild yams are considered to be climate resilient and offer potentially important traits for pest and disease resistance and climate adaptation. Indonesia is rich in yam diversity and is home to several species including *Dioscorea alata*, *D. esculenta*; *D. aculeata*; *D. hispida*; *D. bulbifera* and *D. pentaphylla*.

? **Cloves** (*Syzygium aromaticum* syn. *Eugenia aromatica*) are the aromatic flower buds of an evergreen tree of the Myrtle family (Myrtaceae), which is native to Indonesia. Used as a spice in cooking, or as an essential oil, it is particularly valued for its use in flavourings and perfumes as well as for its important medicinal properties. The clove tree is believed to be native to the Maluku Islands, including North Maluku (Moluccas), historically known as the 'Spice Islands.' Cloves are often intercropped with nutmeg, coconut palm, areca nut palm, betel leaf, durian, and banana. In North Maluku, cloves are found growing in several islands including Ternate, Tidore, Halmahera, Makian, Motir and Bacan.

? **Nutmeg** (*Myristica* spp.) ? Another native to Indonesia, this tree species produces two distinct spices - nutmeg and mace. Nutmeg essential oil is used in the perfumery and pharmaceutical industries, or as a natural food flavouring in baked goods, syrups, beverages, and sweets. Molecular characterization of nutmeg germplasm has shown high levels of diversity among different accessions and has highlighted the importance of conserving and sustainably managing these important resources. The present conservation status of nutmeg is

*Linkages with existing programmes and initiatives*

Relevant local, national and international baseline initiatives are described below. Many agriculture, nutrition, health, and education programs exist at the national, regional and district/regency levels that do not focus specifically on genetic resources, but which could be highly relevant to the outcomes of the project. Synergies and integration of the target crops into these programs will be explored.



## Baseline programmes, initiatives and investments

### *National level*

The **Ministry of Agriculture**, through the Indonesian Centre for Agricultural Biotechnologies and Genetic Resources Research and Development (ICABIOGRD), undertakes conservation and management of agricultural genetic resources. The Indonesia Centre for Rice Research (ICRR) is conducting research and development on rice; including local rice. The Indonesian Legume and Tuber Research Institute (ILETRI) is doing research on various nuts and tubers. Under IAARD, there are several research institutes focus specifically on the selected crops, such as Indonesian Spice and Medicinal Crops (ISMERI). There are National and Regional Commissions on Genetic Resources and Assessment at the Institute for Agricultural Technology at the regional level that can assist the project in initial data collection. The institutions need to be further strengthened in terms of in situ conservation and implementing regulations related to conservation.

The Indonesian Agency of Agricultural Research and Development (IAARD) is focusing on:

- ? Producing and developing technological innovations and policy recommendations in the agricultural sector in supporting the realization of the industrial agriculture system
- ? Improving the quality of agricultural research resources as well as the efficiency and effectiveness of their uses
- ? Developing national and international networks for science and technologies and improving the role of IAARD in agricultural development.

In collaboration with partners, IAARD is developing programmes on:

- ? Increasing production and added value of horticulture
- ? Increasing production on sustainable estate commodities
- ? Increasing community food security and diversification.

The **Ministry of Environment and Forestry**, through the Directorate of Biodiversity Conservation on Species and Genetic, undertakes surveys of wild plant and animal species in conservation areas. The Directorate also oversees the implementation of the Nagoya Protocol as well as establishing the financial strategy for the access and benefit sharing mechanisms of wild species.

Indonesia has an existing information system and database of plant genetic resources. The Ministry of Environment and Forestry has established an Information Centre for Natural Conservation (PIKA) and created a Clearing House Mechanism for biodiversity (FAO, 2009). The Indonesian Institute of Sciences has developed National Biodiversity Indonesian Networks (NBIN), and INDOPLASMA ([www.indoplasma.or.id](http://www.indoplasma.or.id)) was developed by NCGR.

Baseline related to the Nagoya Protocol: MoEF has been implementing several activities to facilitate access to genetic resources (SDG in Bahasa) and benefit sharing, including (1) Access regulation on genetic resources (SDG) of wildlife species and its access and benefit sharing (ABS) stipulated through Minister of Environment and Forestry PermenLHK No. P.2 Year 2018 concerning Access on Wildlife Species Genetic Resources and Benefit Sharing on its Utilization (KemenLHK, 2018), (2) the development of an Access and Benefit Sharing Clearing House (ABSCH) as the main tool to facilitate Nagoya Protocol implementation, and (3) an Online Permit System of SDG Utilization (SPOPSDG) for obtaining permits by the Competent National Authority in the area of forestry.<sup>[26]</sup> To facilitate access to technology transfer and genetic resources conservation and utilization activities in a sustainable way, the ABSCH contains information related to the Nagoya Protocol, the utilization of genetic resources (SDG), related to governing regulations of genetic resources, procedure for online access to SDG utilization, etc. In addition, the website ABSCH Indonesia is also useful as a means of exchanging information between ministries/agencies through the related nodes already provided on the website. Please also refer to Table 1 above regarding the Roles and responsibilities relating to ABS in Indonesia. National competent authorities were designated based on Presidential Regulation No. 165/2014 in line with sector specific mandates, these are Ministry of Agriculture, Ministry of Environment and Forestry, Ministry of Marine Affairs and Fisheries, and the Ministry of Health. Indonesia has previously received support for the Nagoya Protocol implementation through the ASEAN Center for Biodiversity and the International Development Law Organization.<sup>[27]</sup>

Livelihood improvement of smallholder farmers is a key focus area for the **Ministry of Villages**. The

### 3) Proposed alternative scenario with a brief description of expected outcomes and components of the project and the project's Theory of Change

The Project's objective is to strengthen the conservation and sustainable use of globally significant Indonesian crop diversity, in the wild and on-farm, through sustainable practices and improved capacities, as well as strengthened enabling environment and the development of long-term incentive mechanisms. The long-term outcome is that communities conserve globally important varieties of the five target crops rice, taro, yam, cloves, and nutmeg, and benefit equitably from their sustainable use with increased livelihood opportunities, in particular for women and vulnerable social groups. The Project will use an innovative approach which attempts to integrate the many elements of the target crops at a landscape scale and involve a broad range of actors and stakeholders from relevant sectors. A key focus of the Project will be to address and put mechanisms in place that enhance national coordination and integration among different agencies and policies to ensure that harmonized, cross-sectoral policy frameworks are in place to support the conservation and sustainable use of the target crops and the continued availability of the target species for long-term *in situ* conservation. This strengthened enabling policy and institutional framework will provide the platform needed to:

- ? Ensure that policy makers, researchers, farmers, breeders, extension officers and land managers have access to rigorous knowledge on the target crops, including their key threats and traits, in order to improve decision-making to better support effective conservation and use;
- ? Safeguard through an integrated conservation approach the CWRs and landraces of target Indonesian crops;
- ? Create opportunities for enhanced mainstreaming by producers, processors, consumers, and researchers who are more aware of the multiple benefits from the sustainable use of the target crops.

These enabling policy and institutional frameworks will be inclusive to the Masyarakat Adat, in respect to their right to self-determination and Free, Prior and Informed Consent (FPIC).

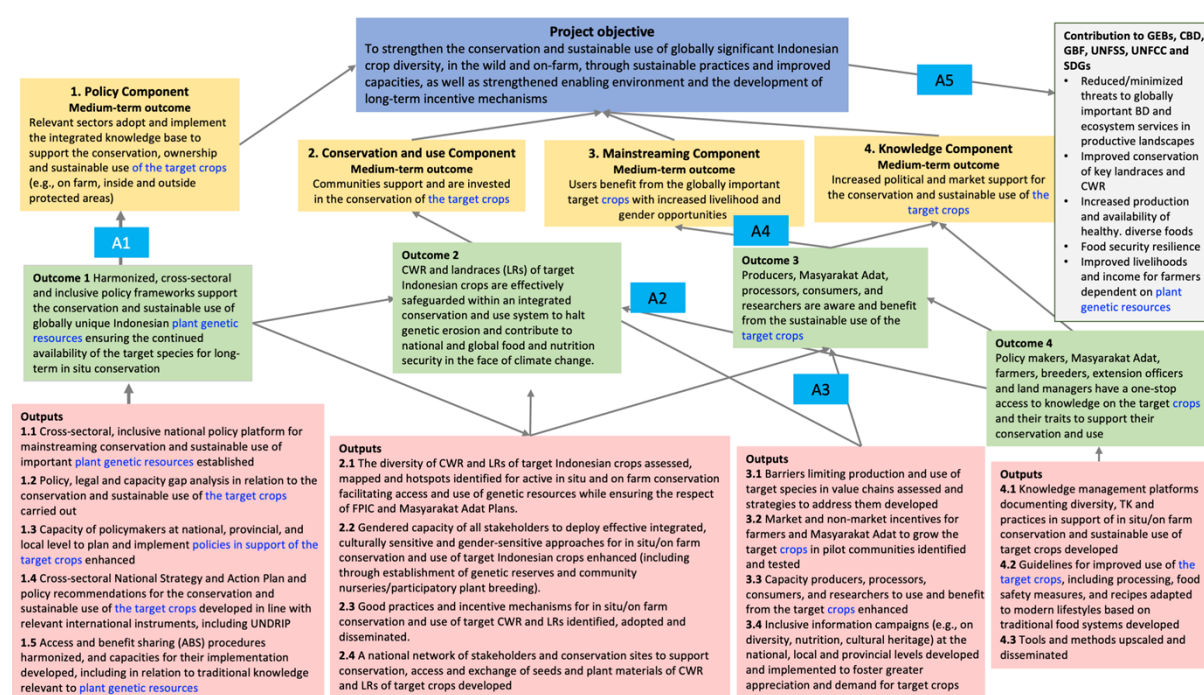
The project's Theory of Change (Fig. 1) is based around four inter-related Components with corresponding immediate- and medium-term Outcomes, namely:

- ? **Component 1:** Strengthen the enabling environment to promote the conservation and sustainable use of globally important crop diversity
- ? **Component 2:** Conservation and utilization of selected crops and their crop wild relatives (CWRs) for sustainable agricultural development, food security and environmental stability
- ? **Component 3:** Development of market/non-market incentives and linkages in target sites for the target crops
- ? **Component 4:** Strengthening Knowledge Management

These four components will work together to strengthen policy and institutional enabling environments, improve capacity and knowledge for sustainable conservation practices, enhance mainstreaming options, markets and long-term incentive mechanisms that encourage the conservation and sustainable use of the target crops, thereby addressing the key drivers of plant genetic resources loss and barriers to their conservation and sustainable use described above. The project will apply an iterative process where lessons learned from Components 2 and 3 will inform the development of policy recommendations and guidelines under Component 1; and where the capacities, plans and institutional mechanisms developed under Component 1 will be applied under Components 2 and 3.

Collectively, these actions will ensure that farmers and communities, Masyarakat Adat, and other relevant stakeholders and beneficiaries, in Indonesia are contributing successfully to a shared

vision of conserving the target crops and are benefitting in an equitable manner from their sustainable use by realizing increased livelihood opportunities and wellbeing, in particular for women and vulnerable social groups. These actions will be taken following the *Masyarakat Adat* Plan to guarantee respect of the rights of self-determination of the *Masyarakat Adat* and their FPIC. In addition to addressing these opportunities and benefits, the collective outcomes and objective of the project will make a significant impact through safeguarding the target crops and delivering multiple global environmental benefits that will contribute substantially to Indonesia addressing the triple challenge of meeting biodiversity, food and climate goals through the CBD, UNFSS, UNFCC and SDGs. By using a comprehensive integrated approach with transparent impact pathways demonstrating clear causal links between project activities with concrete benefits, the project's Theory of Change is aimed at inserting the target crops at the heart of government policy, civil society, science and academia, industry, and farmers and communities in Indonesia.



**Fig. 1** The project's Theory of Change

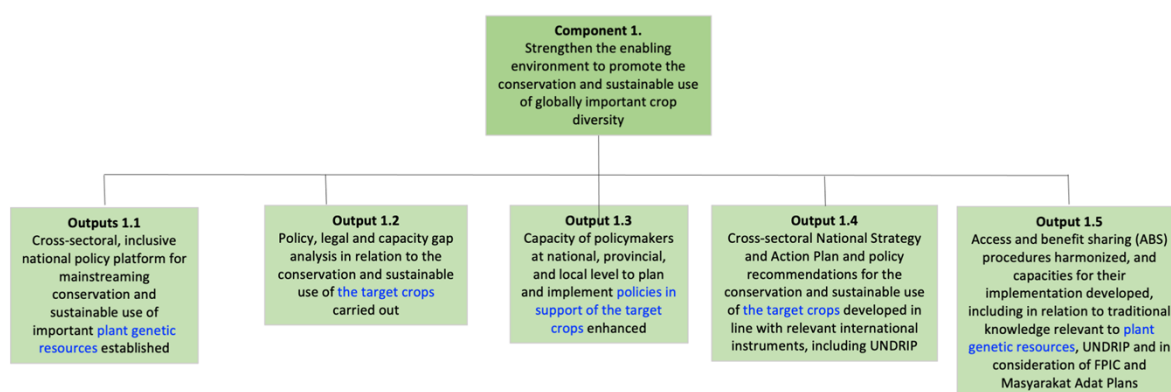
The Theory of Change is based on a number of assumptions. First, it assumes that there is sufficient political commitment among government agencies (national and local) to carry out actions to support the conservation and sustainable use of the target crops (A1). It also assumes that domestic and international markets to support the target crops can be sufficiently developed and maintained in the long-term to support local farmers adopting project practices over the long term (A2); and that consumers are willing to pay a premium for products from sustainably managed target crops (A3). Economic rewards from sustainable use of local crop varieties are judged higher than risks associated with the 'business as usual model' (A4). Finally, the project is based on the assumption that future impacts of climate change do not irreversibly affect structure and function of ecosystem services in productive landscapes (A5). In addition, it is anticipated that improved implementation of the Nagoya Protocol and ABS provisions will enable stakeholders to better document knowledge associated with the target crops and identify incentives for local communities to conserve their traditional crops and farming practices, thereby contribution to the conservation of these crops.

Furthermore, the Theory of Change is based on the following assumptions related to the causal pathways between Outputs, Outcomes, Medium-term Outcomes and Objective. It assumes that:

1. If a cross-sectoral, inclusive national policy platform is established (Output 1.1), combined with an analysis of policy, legal and capacity gaps (Output 1.2), this will create the necessary conditions for stakeholders to work towards increased capacity and enhanced policy environment to support the conservation and sustainable use of the target crops. If, subsequently, capacities (Output 1.3), a cross-sectoral National Strategy and Action Plan and policy recommendations (Output 1.4) as well as harmonized ABS procedures (Output 1.5) are developed, this will result in harmonized, cross-sectoral policy frameworks and the adoption and implementation of knowledge which will enable the long-term *in situ* conservation of the target species (Outcome 1 and Medium-term Outcome 1).
2. If an assessment, mapping and identification of hotspots for *in situ* and on-farm conservation is carried out, and if technical capacity building and participatory consultations are undertaken (Output 2.1), stakeholders will be able to identify and agree on the establishment of genetic reserves, the development and implementation of management plans for these genetic reserves, and the establishment of community nurseries/participatory plant breeding (Output 2.2). This, combined with the testing and adoption of good practices and incentive mechanisms (Output 2.3) and the establishment of a national network of stakeholders and conservation sites (Output 2.4) will lead to the effective safeguarding of the target crops within an integrated conservation and use system that will contribute to halting genetic erosion and to global food and nutrition security in the face of climate change (Outcome 2). This will result in communities supporting and being invested in the conservation of the target crops (Medium-term Outcome 2).
3. If the barriers limiting the production and use of the target species are identified and strategies to address them are developed (Output 3.1), project stakeholders will be able to develop and implement market and non-market incentives for farmers and Masyarakat Adat to grow the target species (Output 3.2). Moreover, if actions to enhance capacities, strengthen producer organizations and develop business and marketing plans are implemented (Output 3.2), combined with raising consumer and stakeholder awareness of the nutrition and cultural benefits of the target crops (Output 3.4), this will result in producers, Masyarakat Adat, processors, consumers and researchers being aware of and benefiting from the sustainable use of the target species (Outcome 3). Hence, users of genetic resources will benefit from the target species and there will be increased livelihood opportunities for women and men (Medium-term Outcome 3).
4. It is further assumed that, if knowledge management platforms documenting the diversity and traditional knowledge are established (Output 4.1), if guidelines for improved use of the target crops are developed (Output 4.2), and if tools and methods are upscaled and disseminated (Output 4.3), this will result in policy makers, Masyarakat Adat, farmers, breeders, extension officers and land managers having a one-stop access to knowledge on the target crops (Outcome 4). This will lead to increased political and market support for the conservation and sustainable use of the target crops (Medium-term Outcome 4).
5. If these four Outcomes and Medium-term Outcomes are realized, they will result in the strengthened conservation and sustainable use of globally significant Indonesian crop diversity (Project Objective, global environmental benefits).

The four project components, their anticipated outcomes, and key activities are briefly described below. Further details of the results chain, indicators and targets for the Project are available in Annex A1 to this proposal, while Annex G illustrates the workplan and timeline for achieving each Outcome.

**Component 1:** This component is aimed at strengthening the enabling environment to promote the conservation and sustainable use of globally important crop diversity. Under this component, the project will strengthen national cross-sectoral regulatory frameworks, policies, and capacities for conservation and utilization of the target crops, and clarify institutional responsibilities and administrative mechanisms for Access and Benefit Sharing (ABS) agreements, whilst guaranteeing inclusion of Masyarakat Adat and respect of their rights to FPIC and self-determination.



Component 1 is central to the overall success of the project. The key outcome of this component is:

**Outcome 1 ? the establishment of harmonized, inclusive cross-sectoral policy frameworks that support the conservation and sustainable use of globally unique Indonesian plant genetic resources** thus ensuring the continued availability of the target species for long-term *in situ* conservation. ICABIOGRD, in close collaboration with the Directorate of Natural Resources and Ecosystem Conservation of MoEF, will be responsible for delivering this outcome, with support from the Management and Leadership Training Centre for Agriculture (*Pusat Pelatihan Manajemen dan Kepemimpinan Pertanian ? PPMKP*) and the National Development Planning Agency (BAPPENAS).

The cross-sectoral platform established under **Output 1.1**, will bring together national decision and policymakers, and Masyarakat Adat representatives, to influence planning and policies supportive of protecting unique Indonesian crop diversity. It will also strengthen multi-disciplinary and institutional partnerships to ensure the mainstreaming of conservation and sustainable use of the target crops into sectoral strategies.

The key deliverables for Output 1.1 are:

? the establishment and operationalization of a cross-sectoral policy platform for linking different sectors relevant to the conservation and sustainable use of Indonesian plant genetic resources.

Indicative activities under Output 1.1 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
1.1.1	Develop terms of reference (TORs) for the cross-sectoral national policy platform with the core mandate for developing policies and strategies related to plant genetic resources, incorporating gender equality and social inclusion considerations (building on existing platforms ? to be discussed at project inception)	?			
1.1.2	Identify organizations/individuals to spearhead policy development and implementation, including (a) organizations focused on gender and social inclusion (including representation of Masyarakat Adat), (b) female representatives for the platform	?			

<b>1.1.3</b>	Establish platform and hold regular meetings	?			
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The national cross-sectoral policy platform will provide the institutional framework and institutional home for promoting mainstreaming efforts targeting the conservation and sustainable use of the target crops and ensure the positioning of the mainstreaming programme within relevant sectoral mandates.

Under **Output 1.2**, the project will carry out an extensive review of current institutional, policy and legislation frameworks and associated capacities, which influence the conservation and sustainable use of the target crops, both at the national and provincial level. This will involve review of relevant institutional, policy and legal frameworks in relation to agricultural policies/subsidies, land use, and food and nutrition security strategies and plans. The review will be carried out using a gender lens and taking into account the needs of Masyarakat Adat.

Key deliverables for Output 1.2 are:

- ? a report detailing the results of the gender responsive policy and capacity gap analysis carried out in relation to the conservation and sustainable use of the target crops in relevant sectoral policies and programmes, including agricultural policies/subsidies, land use policies, and national food security and nutrition strategies;
- ? a report detailing the results of the needs assessment;
- ? action plan document to build capacity and awareness.

Indicative activities under Output 1.2 include:

<b>No.</b>	<b>Activity Description</b>	<b>National level</b>	<b>Central Java</b>	<b>Central Kalimantan</b>	<b>North Maluku</b>
<b>1.2.1</b>	Undertake review of national (and where relevant provincial) policies and strategies, identifying barriers, gaps and opportunities for conservation and sustainable use of the target crops, including those concerning women, youth and other vulnerable social groups (including Masyarakat Adat)	?			
<b>1.2.2</b>	Undertake capacity needs assessment of relevant stakeholders and institutions at national, provincial and local level, including capacity for gender mainstreaming.	?	?	?	?
<b>1.2.3</b>	Design an action plan to build capacity and awareness of existing policies, policy options and mainstreaming tools and disseminate relevant information widely, including among social groups, the Masyarakat Adat, and their representatives. This will also involve institutionalization of the training programmes into the regular programmes of the relevant agencies.	?	?	?	?

The cross-sectoral platform established under Output 1.1 will strengthen institutional coordination mechanisms to effectively harmonize the actions of the different stakeholders, especially the agriculture and environment sectors. Under **Output 1.3**, the Project will undertake capacity building, where needed and appropriate, to fill these existing gaps. Particular attention will be given to ensuring that capacity building activities duly consider and include female representatives of women, youth and other groups (including Masyarakat Adat).

Key deliverables for Output 1.3 are:

- ? Training reports of at least three training programmes carried out at the national level, including on relevant gender and social equity considerations, to plan and implement policy related to the conservation and sustainable use of the target crops. Participants will include relevant policy and actors, from the target provinces with a keen eye on ensuring gender equal and Masyarakat Adat participation.
- ? Reports of policy events.

Indicative activities under Output 1.3 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
1.3.1	Implement action plan (e.g., training programs) to build capacity and awareness of policy options (linked to Activity 1.2.2 and 1.2.3)	?			
1.3.2	Host policy learning events to disseminate best practices, current thinking and to share experiences and lessons learned	?			
1.3.3	Identify key ?change agents?, potential champions and supporters of relevant policy reform (in addition to the more high-level platform members under Activity 1.1.2)	?			

The cross-sectoral policy platform will also oversee the development and implementation of a cross-sectoral National Strategy and Action Plan and related policy recommendations (**Output 1.4**) in line with relevant international instruments, including UNDRIP, to promote the conservation and sustainable use of Indonesian crop diversity, ensuring broad participation but, more importantly, ownership and sustainability beyond project end. Where necessary, it will be the task of the platform to push for and obtain required policy, regulatory or legislative support. Such a strategy would:

- ? Ensure coordination of planning and implementation so that collaboration occurs and activities are harmonised between the relevant sectors and actors involved;
- ? Institutionalize the practice of mainstreaming biodiversity across relevant sectors by embedding it in national planning mechanisms supported by relevant policy, legislative, financial and capacity measures and resources from relevant sectors;
- ? Promote public awareness (see Outcome 4) and understanding of the importance and value of the target crops as a resource for addressing sustainable agricultural development, food security and environmental stability;
- ? Promote awareness on the need to conserve this valuable resource for development;
- ? Provide a mechanism for implementing allocation of management responsibilities and reporting national progress towards agreed targets and plans.



The National Strategy and Action Plan will also incorporate climate risks and adaptive management. It will build on guidance from FAO's Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture<sup>[33]</sup> as well as the CBD<sup>[34]</sup>. Furthermore, it will take into consideration relevant FAO Voluntary guidelines related to genetic resources<sup>[35]</sup> as well as the realization of Farmer's and Masyarakat Adat Rights. Climate risks will also be addressed and incorporated into the guidelines and proposed policy changes. The policy recommendations developed under this Output will also incorporate lessons learned from the implementation of Components 2 and 3.

Key deliverables for Output 1.4 are:

- ? Report of at least one high level, multi-sectoral meeting highlighting Project findings and the importance of mainstreaming the conservation and sustainable use of the target crops in development plans and in both cross-sectoral and sectoral plans such as sustainable development, poverty reduction, climate change adaptation/mitigation, as well as in sector-specific plans such as agriculture, forestry and tourism.
- ? National Strategy and Action Plan document and financing plan.
- ? At least 3 policy briefs/recommendations documents.

Indicative activities under Output 1.4 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
1.4.1	Use information gathered under 2.1.1 and 2.3 to develop a cross-sectoral National Strategy and Action Plan for the conservation of priority Indonesian CWR, in a consultative process and with the close involvement of the multi-stakeholder network established under Output 2.4	?	?	?	?
1.4.2	Assess current resources and budgetary allocations targeting the conservation and deployment of the target crops including CWR	?	?	?	?
1.4.3	Develop a financing plan and make arrangements for the implementation of the National Strategy and Action Plan and other relevant strategies, and assign roles and responsibilities	?	?	?	?
1.4.4	Work towards endorsement of the National Strategy and Action Plan	?	?	?	?
1.4.5	Set up monitoring mechanisms to assess level of implementation	?	?	?	?



1.4.6	Organize participatory policy write-shops for drafting policy briefs and recommendations, building on the analyses conducted under Outputs 1.2 and 1.4. The guidelines should draw from existing international guidance and ensure harmonization of policies among sectors. They will take into account the needs and priorities of local communities and Masyarakat Adat, women and youth.	?	?	?	?
1.4.7	Draft and disseminate gender-responsive policy briefs and recommendations to promote the conservation and sustainable use of the target crops in national, provincial, local policies and sectoral plans. This may involve sectoral policies and plans, including agricultural policies/subsidies, food and nutrition security strategies and plans, land use [i], etc.  [i] Promoting traditional land uses/sustainable land and forest management that conserve and sustainably use local varieties of the target species, on farm and in the wild.	?	?	?	?
1.4.8	Work towards adoption of the proposed policy changes.	?	?	?	?

**Output 1.5** will focus on harmonizing Access and benefit sharing (ABS) procedures and on developing capacities for their implementation, including in relation to traditional knowledge relevant to plant genetic resources, UNDRIP and in consideration of FPIC and Masyarakat Adat Plans[36] as outlined in Annex J. The processes and guidelines related to the Nagoya Protocol and ABS implementation will be directly applied through the field activities in Components 2 and 3, through the access and benefit sharing agreements with local communities and Masyarakat Adat, where relevant. Similarly, the experiences and lessons learned from Components 2 and 3 will inform the enhancement of processes and guidelines under Component 1. This Output will support the mutually supportive implementation of the Nagoya Protocol and the ITPGRFA through the activities outlined below, by taking into account existing guidance and lessons learned from other countries.[37],[38]

Key deliverables for Output 1.5 are:

- ? Report of review of existing legislative, policy and administrative frameworks related to ABS;
- ? Report on the clarification of roles and responsibilities, institutional arrangements, harmonization of procedures and capacity building related to ABS.

Indicative activities under Output 1.5 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
1.5.1	Conduct review of existing legislative, policy and administrative frameworks related to ABS, including issues related to the institutional arrangements, PIC and MAT procedures, IPRs, IPLCs (BCPs and FPIC) and CHM[39]	?	?	?	?
1.5.2	Clarify roles and responsibilities, in particular in areas with partially overlapping mandates such as crop wild relatives and crops that are not on Annex 1, and on-farm/in situ conservation and management	?	?	?	?
1.5.3	Elaborate coordination mechanisms to ensure proper interface between the two instruments/sectors and facilitate exchange and coordination among the relevant agencies. This may also involve the establishment of an inter-ministerial ABS committee after consultation with relevant agencies and stakeholders.	?	?	?	?
1.5.4	Harmonize procedures related to ABS[40], in particular those relevant to the project implementation under Components 2, 3 and 4	?	?	?	?
1.5.5	Develop and implement capacity and awareness programme to increase awareness and capacities related to ABS among relevant stakeholders/actors, including Masyarakat Adat, local communities, parliamentarians, and within the industries using genetic resources and associated traditional knowledge	?	?	?	?

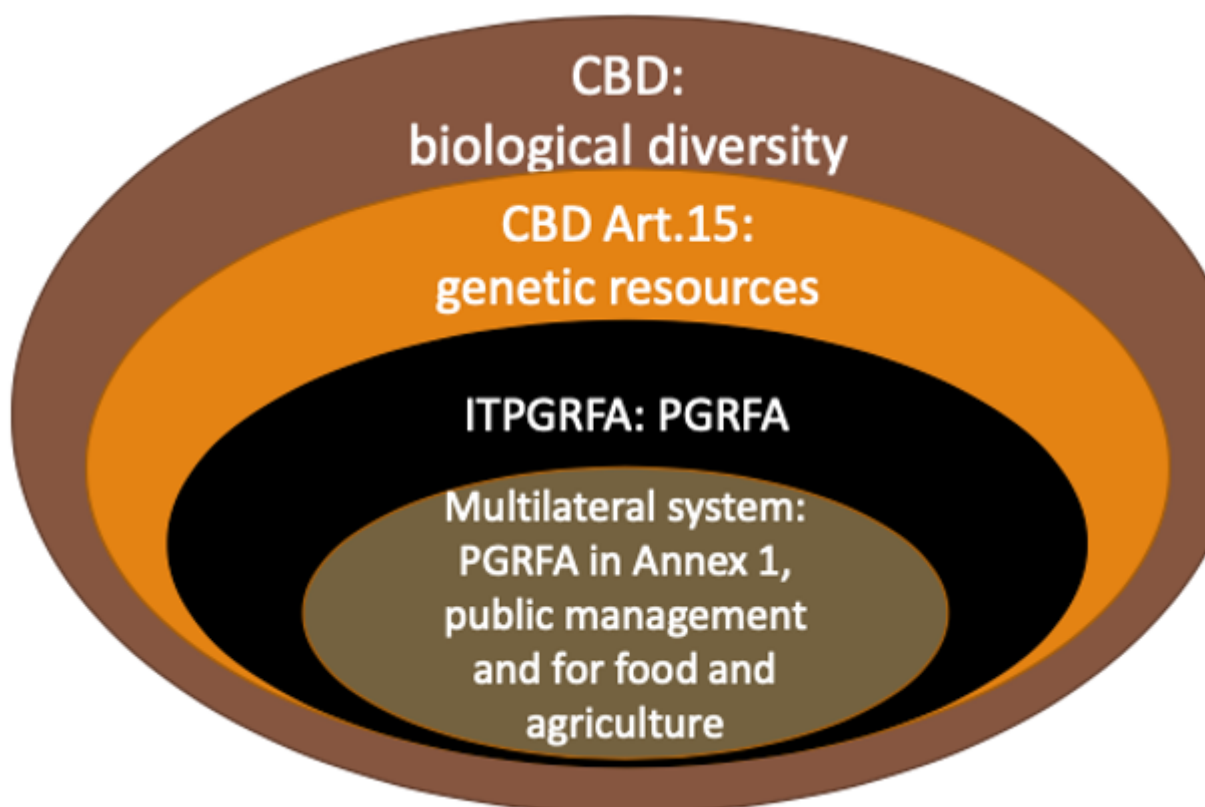
## Mutually supportive implementation of the Nagoya Protocol and the ITPGRFA

The following considerations were taken into account by the project when developing approaches for the mutually supportive implementation:

1. The project operates under the ABS frameworks of both the CBD/Nagoya Protocol and the ITPGRFA, depending on the materials involved and the purposes for which they are acquired or provided. It has to be noted that most project activities will be at the national/local levels involving national/local stakeholders and will not involve exchange of genetic material between countries.
2. The ITPGRFA applies to Annex 1 crops. Three out of the five target crops are on Annex 1 (rice, taro and yam), while the two others (nutmeg and clove) are not.
3. The ITPGRFA applies in case of 'utilization and conservation for research, breeding and training for food and agriculture, provided that such purpose does not include chemical, pharmaceutical and/or other non-food/feed industrial uses'. Thus, if the project decides, for example, to work on medicinal properties of yam as part of Component 3 on market/non-market incentives, the Nagoya Protocol would apply.
4. The Nagoya Protocol applies only in cases of utilization which means 'research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology'. The direct use of planting material for agricultural production and harvesting does not involve 'research and development' and does not fall under the Nagoya Protocol.
5. There are, thus, cases where neither the ITPGRFA nor the Nagoya Protocol apply.
6. Any provisions related to traditional knowledge, Masyarakat Adat and farmers' rights also need to be taken into account.

The Nagoya Protocol includes a number of linkages to the ITPGRFA including in its preamble and in Article 8 where the parties are required to consider the importance of genetic resources for food and agriculture (GRFA) and their special role for food security in the development and implementation of their ABS measures. Furthermore, paragraph 4 of Article 4 of the Nagoya Protocol provides that where a specialized international ABS instrument applies, the Nagoya Protocol does not apply for the party or parties to the specialized instrument in respect of specific genetic resources covered by and for the purpose of the specialized instrument.[\[41\]](#)

The scope of the CBD, the ITPGRFA and the Nagoya Protocol/CBD Article 15 are illustrated below: [\[42\]](#)

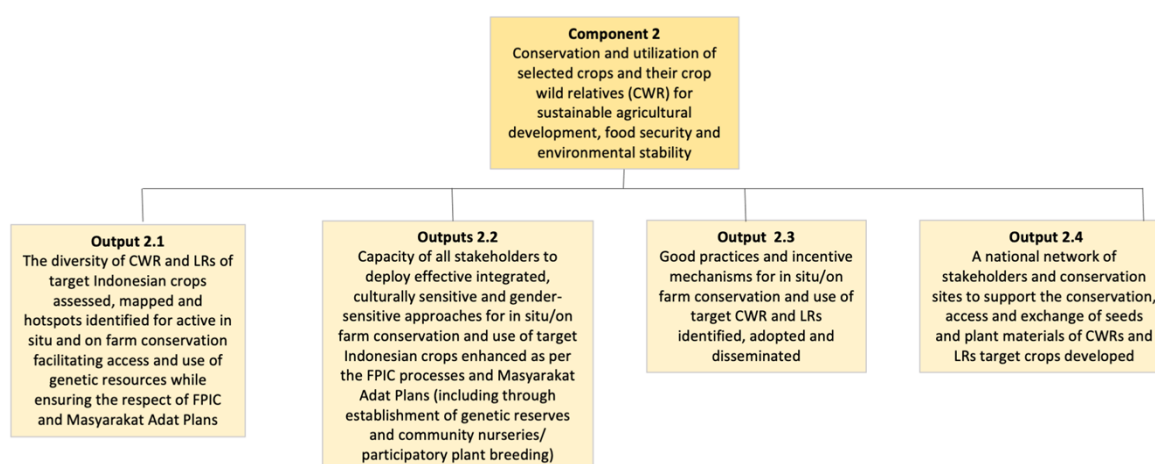


An indicative flow-chart illustrating the mutually supportive implementation of the ABS mechanism is provided below. This will be further elaborated during project implementation.

In summary, results expected through the achievement of Outcome 1 include improvements in multi-stakeholder collaboration and mainstreaming efforts targeting the conservation and sustainable use of the target crops and the positioning of the biodiversity conservation and use programme within relevant sectoral mandates. It is anticipated that this will result in a more holistic integration of crop diversity into various existing programmes and actions related to nutrition, agriculture, culture or tourism, through policies that favour local crop diversity and recognize the role of local communities in the stewardship of these resources. Progress towards this outcome will be measured via the increase in policy recommendations of relevance to the conservation and sustainable use of the target crops.

**Component 2:** This component aims to enhance the conservation and use of selected crops and their crop wild relatives (CWR) for sustainable agricultural development, food security and environmental stability within the target regions by catalyzing dynamic on-farm and in situ conservation of the target crops. The Component will thereby contribute to increasing the area under improved management practices to benefit globally significant biodiversity. The Component will do so by developing institutional arrangements, knowledge and capacities to effectively conserve CWR and LRs of target Indonesian crops, within an integrated conservation system. This will also build on the capacities, plans and institutional mechanisms developed under Component 1.

The key expected outcome of this component, **Outcome 2**, is that the **CWR and landraces of target Indonesian crops are effectively safeguarded within an integrated conservation and use system to halt genetic erosion and contribute to national and global food and nutrition security in the face of climate change**. When impacting, including and targeting Masyarakat Adat, the activities will be carried out following the *Masyarakat Adat* Plan. ICABIOGRD, in close collaboration with the Directorate of Natural Resources and Ecosystem Conservation of MoEF, will co-lead activities linked to assessing the diversity and conservation status of target crops and wild relatives across the Project sites, establishing genetic reserves, as well as setting up an information system to monitor changes in the distribution of priority species. Additional support will be provided by several research centres under the Ministry of Agriculture to carry out characterization and evaluation of the target crops and CWR, carry out capacity needs? assessments, establish community nurseries/participatory plant breeding, as well as to identify and disseminate good practices in collaboration with local government actors and the National Commission on Genetic Resources ? NCGR (KOMNAS SDG).



To support the enhanced conservation of the target crops, activities under **Output 2.1** include assessing current threats and mapping the diversity of CWR and landraces of the target Indonesian crops (rice, taro, yam, cloves, and nutmeg) as well as identifying hotspots for *in situ* and on farm conservation.<sup>[45]</sup> The mapping is carried out in respect to the right to land, territory and natural

resources of the Masyarakat Adat and their FPIC.<sup>[46]</sup> As described in Activity 2.1.1 and Annex J, all project activities that involve access to genetic resources held by local communities and Masyarakat Adat and their traditional knowledge (TK) will duly follow FPIC and ABS principles. This will also build on capacities, processes and institutional mechanisms developed under Component 1 (Output 1.5). At the same time, challenges and lessons learned related to ABS identified under Component 2 will inform the activities under Component 1.

The surveys and assessments will provide the baseline information to inform the establishment of genetic reserves and the network of conservation sites for *in situ* conservation areas to facilitate access to and use of genetic resources. The project aims to establish an integrated conservation and use system, which maintains traditional farming systems and their diversity and implements effective forest conservation and sustainable harvesting. Climate risks will be taken into account when identifying genetic reserves, and adaptive management will be incorporated into their management plans.

Key deliverables for Output 2.1 are:

- ? An information system for monitoring of changes in wild populations of priority CWR building on existing information systems and databases ? in coordination with Output 4.1.<sup>[47]</sup>
- ? Checklists and inventories of landraces (LRs) and crop wild relatives (CWR) of target crops collected by the project available and disseminated via the knowledge platform established
- ? The identification of five hotspots/priority sites under active *in situ* and on farm conservation to safeguard target LR and CWR
- ? Report of implementation of FPIC and ABS and associated instruments/agreements (included in six-monthly project progress reports).

Indicative activities under Output 2.1 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
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2.1.1	<p>Following FPIC process, collect socio-economic data on Masyarakat Adat and local communities in the project sites, including in relation to gender and youth[48]. Conduct consultations with local communities, in particular Masyarakat Adat, to ensure free, prior and informed consent (FPIC) and develop Masyarakat Adat Plans in line with the process described in Annex J. Agree on a communications plan and means for engagement during the project. Activities will be defined in more detail with Masyarakat Adat and local communities in line with the FPIC process.</p> <p>Where applicable, make clear provisions for (1) the collection, storage, characterisation and registration of plant genetic resources if such activities are conducted in association with the project, and (2) access and benefit sharing agreements, including for traditional knowledge.[49] Conduct regular participatory monitoring and evaluation of the agreements reached with local communities and Masyarakat Adat.</p>		?	?	?
2.1.2	Carry out detailed field studies to collect baseline data on wild populations of priority CWR in and outside conservation areas using internationally approved Descriptors list for <i>in situ</i> conservation of CWR.		?	?	?
2.1.3	Carry out a baseline survey of the diversity of landraces of target crops in 3 selected sites using participatory diversity assessment methodologies		?	?	?
2.1.4	Identify and prioritize hotspots for <i>in situ</i> and on farm conservation and conduct land tenure analysis in the identified areas (including through participatory mapping to identify formal and customary tenure rights).		?	?	?

<b>2.1.5</b>	Establish an information system for monitoring of changes in wild population of priority CWR species to capture data generated in 2.1.2 above and in line with international information system standards (in coordination with the national database to be developed under Output 4.1).	?			
<b>2.1.6</b>	Carry out a preliminary characterization and ecological evaluation of collected CWR and landraces to facilitate their conservation and use (through co-financing)	?	?	?	?

In this undertaking attention will be paid to address any limitations currently faced by women and other vulnerable groups to access and use the target crops effectively (see [Section 3](#)). This includes documenting, with their FPIC consent, women's knowledge on agricultural and farming practices, discussing preferred traits as well as addressing issues of reduced access to extension services and technologies, providing a safe space for communal decision making, and ensuring participation of marginalized groups and individuals, including women, youth and Masyarakat Adat in decision-making processes.

**Output 2.2** will focus on developing or strengthening the technical capacities of relevant stakeholders (including custodian farmers, Masyarakat Adat, protected areas' managers, breeders, extension services, and other land managers), on identifying capacity gaps and their causes, and building capacity to develop effective integrated, culturally sensitive and gender-sensitive conservation and use approaches for the target crops, as per the FPIC processes and Masyarakat Adat Plans. This will also involve the establishment of genetic reserves<sup>[50]</sup>, along with community nurseries/participatory plant breeding to ensure access to quality seeds/planting material.

Key deliverables for Output 2.2 are:

- ? A report of the gender-sensitive capacity needs assessment carried out at national and provincial level in the target districts/regencies
- ? A report of gender-sensitive training programmes developed and carried out to enhance stakeholder capacity to deploy conservation approaches and use target crops effectively
- ? Gender-sensitive best practices manuals and other training material applicable to other locations and national context
- ? A report of the implementation of the 5 genetic reserves and their management plans
- ? A report of the 3 established community nurseries/participatory plant breeding (1 per province)

Indicative activities under Output 2.2 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
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2.2.1	Carry out a capacity needs? assessment for <i>in situ</i> /on farm conservation of all stakeholders for the effective conservation of the target CWR and LR, including among women, youth and other vulnerable social groups in target districts/regencies (including Masyarakat Adat)		?	?	?
2.2.2	Prepare best practice (?How to?) manuals and other training materials on in situ/on farm conservation for local practitioners including protected areas managers, agricultural extension services based on existing materials, in particular those developed by Bioversity and FAO <sup>[51]</sup> . Highlight the importance of maintaining traditional diverse farming systems and of avoiding further land use changes and forest loss.	?	?	?	?
2.2.3	Develop and implement training programmes for public and private sector extension officers at provincial or district/ regency levels to meet female and male farmers? needs, interests and constraints they face in production (including credit, marketing, nutrition, access to planting material, climate change adaptation, pests and diseases), and implement training and outreach for famers		?	?	?
2.2.4	In consultation with relevant stakeholders, establish at least 5 genetic reserves in identified target CWR hotspots areas in Indonesia, based on previous studies undertaken (Wiguna, 2020) and the surveys conducted under 2.1.2, and develop management plans for effective conservation of wild CWR populations. If these genetic reserves are located within protected areas, conduct METT assessments of the protected areas, to be included under Core Indicator 1. The genetic reserves will take into account impacts of climate changes and will ensure that local communities and Masyarakat Adat (including women) continue to have access to their traditional lands.		?	?	?



2.2.5	Establish community nurseries/participatory plant breeding (where conditions exist) in each of the target provinces to conserve the target local crop diversity and facilitate access to quality seeds/planting material		?	?	?
2.2.6	Provide technical support to site coordinators in implementation and monitoring of conservation of the target CWR/LRs at target sites in line with the developed management plans, including the support of agricultural groups for women and other vulnerable groups		?	?	?

**Output 2.3** will centre on identifying and adopting workable good practices and incentive mechanisms for *in situ*/on farm conservation and the use of the target CWR and landraces. As well as assessing approaches that may be working well in Indonesia, albeit in pilot form or on different commodities, the project will consider methodologies and best practices that have worked well in different geographical settings, such as the in-kind community group-level incentives that have been used by the Alliance of Bioversity International and CIAT. The approach of *Payments for Agrobiodiversity Conservation Services (PACS)* tested by the Alliance<sup>[52]</sup> is a form of benefit-sharing mechanism used to reward farmers conserving high public good value threatened varieties of a range of food crops with high infra-specific diversity. PACS have provided a research-for-development platform for a range of institutions including governments, universities, scientists, national and international NGOs, farmer organizations and the private sector to partner in implementation. Partnerships cover a range of inter-related topics. These include characterisation, prioritisation, conservation goal setting, monitoring, *in situ*/on farm conservation incentive mechanisms, value chain development (closely linked to Component 3) and regulatory development (including for long-term funding). The Project will work with farmers to prioritize varieties based on their public good diversity value, as well as their value to farmers for food security, nutrition, climate change adaptation and cultural uses. The approach is oriented towards achieving a 'triple win', as it is cost-effective and has high levels of gender equality<sup>[53]</sup> and social justice (farming communities determine their own participation conditions). Farmer livelihoods are enhanced by being able to not only sell an agricultural commodity, but also provide a conservation service to the nation and the world.

Other incentive mechanisms that recognize and support custodian farmers and local communities to maintain traditional and sustainable land-use systems will also be explored, in line with FAO's toolkit on sources of incentives for ecosystem services.<sup>[54]</sup> These may include Geographical Indication (GI), product development and marketing (in coordination with Component 3), and public procurement, among others. This will be carried out in line with the *Masyarakat Adat* Plan and in respect to the rights to self-determination and FPIC of the *Masyarakat Adat*.

Key deliverables for Output 2.3 are:

? A report of the implementation of good practices and incentive mechanism and documentation of results.

Indicative activities under Output 2.3 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
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2.3.1	Identify good practices and incentive mechanisms for conservation and sustainable use of the target LRs in target sites and for high public good value target CWR (identified under Component 2). This will also involve sustainable forest management and sustainable land management practices associated with the conservation and use of the target CWR and LRs.		?	?	?
2.3.2	Test, implement and evaluate identified good practices and incentive mechanisms (e.g., PACS[55]) for the conservation of target LRs/CWR in pilot voluntary communities in the target areas (identified under Component 2).		?	?	?
2.3.3	Develop extension/technical support, monitoring and verification systems to assess the implemented good practices and incentive schemes, including for women and women's groups		?	?	?
2.3.4	Document and disseminate good practices and incentive mechanism results through high-level national and local meetings involving relevant institutions, with a view to supporting the [future scaling of] fair and equitable sharing of the benefits deriving from genetic resources? conservation and use (linked to Activity 3.1.4)		?	?	?
2.3.5	Use results from the incentive schemes to identify target genetic resources with value chain development potential (Component 3) vs. those requiring longer-term conservation support; and ii) estimate national-level long-term conservation programme costs (linked to Activity 1.4.1 and 1.4.2)	?	?	?	?

Building on the previous outputs and activities, **Output 2.4** will focus on developing and establishing a national network of stakeholders and conservation sites to support the conservation, access and exchange of seeds and plant materials of CWR and landraces of target crops, inclusive of Masyarakat Adat, their representatives and organizations and carried out in respect of the FPIC and *Masyarakat Adat* Plans.

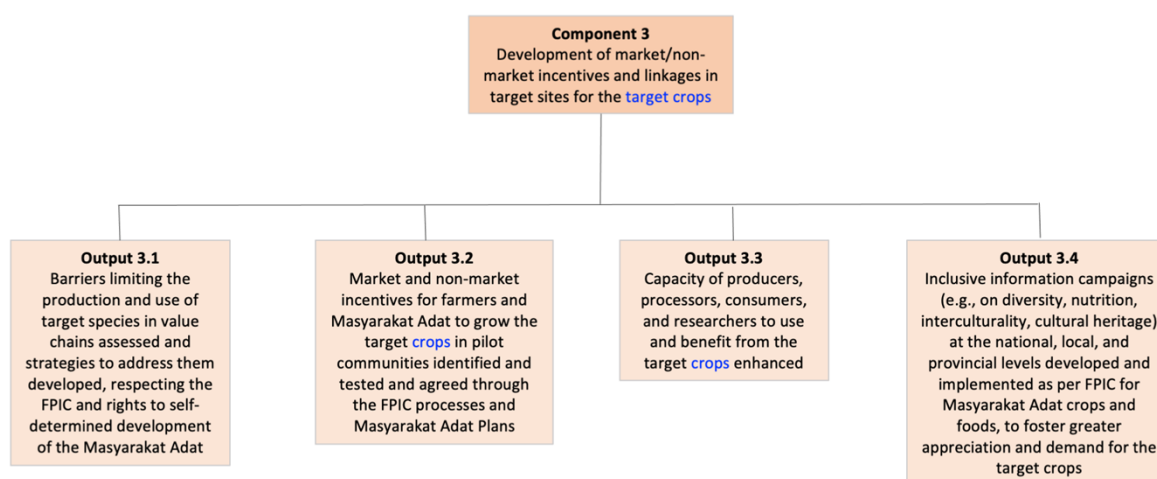
Key deliverables for Output 2.4 are:

? A report on the establishment and implementation of the multi-stakeholder network.

Indicative activities under Output 2.4 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
2.4.1	Establish a multi-stakeholder network including national agricultural genebank, the environment and forestry agencies, the centre for plant conservation, local governments, the universities, non-government conservation organizations, and agricultural private sectors, and hold bi-annual meetings to foster collaboration among the stakeholder and across conservation sites, and oversee implementation of the project. Ensure representation of women, youth and Masyarakat Adat representatives in the network.	?	?	?	?
2.4.2	Organize regular exchange among the network (through online fora, exchange visits, knowledge exchange platforms).	?	?	?	?

**Component 3:** This component aims to mainstream crop genetic diversity by developing market/non-market incentives and linkages in target sites for the target crops.



This Component, and its **Outcome 3**, will **generate incentives and a favourable environment in order for producers, Masyarakat Adat, processors, consumers, researchers and other users to be aware of and benefit from the sustainable use of the target crops**. Whenever impacting, including and targeting Masyarakat Adat, the activities are to be implemented following the *Masyarakat Adat* Plan, in order to ensure full participation of the Masyarakat Adat, and that their rights to self-determination and FPIC are respected as identified in the *Masyarakat Adat* Plans that must be developed within the project. Preliminary results from the PPG phase identifying some of the market barriers that currently limit greater use of the target crops in value chains at the project sites have been mentioned in Section 2 of this document. A major focus of the work under this Component will be on determining the economic, nutritional, and cultural value of the target

species (and their CWR), including via participatory assessments, to support market and value chain development of the most promising target species/varieties. ICABIOGRD will lead the implementation of Component 3 with support from several other MoA research centres, agricultural extension agencies and IPB University (Bogor Agricultural University), local actors and private sector partners to: i) assess the barriers limiting the production and use of target species; ii) identify key actors and steps for formulating a gender-responsive vision and upgrading strategy for market development and iii) strengthen the capacity of producers, processors, consumers, and researchers to use and benefit from the target crops. These interventions are aimed at providing market and non-market incentives for land uses that conserve and sustainably use local varieties of the target species, on farm and in the wild, including by promoting traditional land uses and sustainable land and forest management.

This component also aims to reduce the impacts of the COVID-19 pandemic by creating opportunities for sustainable local livelihoods for green recovery. Opportunities for mainstreaming of local crops and foods into the tourism sector and planning will also be explored, along with scaling up of innovation, online marketing and mobile distribution of local products. Additionally, all investments under this Component will be climate-proof and climate risks will be taken into account when identifying viable value chains.

**Output 3.1** will explore barriers limiting the production and use of target species in value chains assessed and develop strategies to address them, using a strong gender lens. Activities under this output will serve, among other, to validate findings that emerged from the preliminary assessments carried out as part of the PPG. Firstly, that women in the target provinces, who were found to be quite entrepreneurial and engaged in several value addition and transformation activities, often lack the skills and managerial training to help them succeed in building their businesses. Secondly, that financial constraints and access to credit limit their capacity to develop their businesses. Compliance with the provisions regarding FPIC, access and benefit sharing and traditional knowledge will be ensured under Component 3 in line with Activity 2.1.1 and Annex J.

Key deliverables for Output 3.1 are:

- ? Assessment report of barriers limiting the production and use of target species in value chains (with a specific gender lens) at the local and provincial level for relevant target species
- ? Report of at least 3 strategies to address value chain barriers limiting the production and use of target species (with a specific gender lens)

Indicative activities under Output 3.1 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
3.1.1	Undertake rapid appraisal in project sites to identify and assess markets or market niches and opportunities for target species, including barriers and opportunities for women's and youth participation and benefits.		?	?	?
3.1.2	Identify key actors and steps and formulate a vision and upgrading strategy for value chain or market development		?	?	?
3.1.3	Develop guidelines/management plans for the sustainable production and use of target species		?	?	?

3.1.4	Develop marketing and promotion strategies including food, diversity, trade fairs and through local food outlets		?	?	?
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Under **Output 3.2**, the Project will identify and test market and non-market incentives for farmers and Masyarakat Adat to grow the target crops in pilot communities. Activities under this output will determine the most effective ways to mobilize target diversity to demonstrate that its sustainable utilization can contribute to improving diets and livelihoods in general, either through direct consumption or via breeding efforts. Focusing on the rich diversity of target crops that exists in the project sites (Appendices 1-3), the Project will work closely with the Indonesian Center for Agricultural Technology Assessment and Development (ICATAD) and the Indonesian Centre for Agricultural Postharvest Research and Development (ICAPOSTRD) to establish gender-sensitive value chains for prioritized products from good agricultural practices (GAP) building on the rich and vibrant culture of traditional foods and food habits in the three provinces. The Project also aims to capitalize on growing interest in food tourism and ecotourism mentioned in the [Baseline](#) scenario, including medicinal tourism, as well as other simpler local food tasting experiences. Many plant genetic resources, often harvested in the wild, are prized for their medicinal or cosmetic values in many traditional medicines, a growing market sector worldwide. Traditional medicine also plays an important role especially among vulnerable groups, offering an affordable alternative to costly commercial pharmaceutical products. The systematic documentation of crop diversity and their ownership rights, combined with the exploration of functional ingredients for commercial purposes, has shown to be very valuable in support of vulnerable groups and to sustain forest ecosystems (Lundy et al., 2012). All these elements offer considerable opportunity to develop income generating avenues for small scale producers and Masyarakat Adat, and facilitate gender and social inclusion. Furthermore, the Project could explore developments in certification and labelling related to sustainability, health, or other value as well as their association with a particular landscape such as labelling for key goods and services arising from protected or sustainable landscapes in a way similar to Geographic Indications.

At the same time, the Project will analyse the effectiveness of deployment methods such as school meals, and the mainstreaming of biodiversity into education campaigns. For example, links could be sought with the Indonesian School feeding program *Progas*, which is currently implemented in Maluku. If linked to public procurement, smallholders currently producing the target crops could benefit from improved market linkages, while communities in general would benefit from diet diversification and enhanced conservation of biodiversity and its sustainable utilization as well as health and nutrition benefits. FAO's experience in promoting school gardens and nutrition education will be key to identifying best practices. School gardens allow the production of a variety of nutritious agrobiodiversity and could bolster interest for the target crops. In addition, classroom lessons can be linked with practical learning in the garden about conservation, nature and the environment, food production and marketing, food processing and preparation, and marketing of healthy food choices. To develop these activities, the Project can take advantage of the recent administrative, political and financial decentralization that gives provincial and district/ regency governments the authority to carry out a wide range of actions in areas such as education, environment, and cooperatives.

Key deliverables for Output 3.2 are:

? Report of identified and tested set of project-specific, culturally appropriate and gender-responsive market and non-market incentives

Indicative activities under Output 3.2 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
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<b>3.2.1</b>	Identify and test market and non-market incentives, including specifically relevant for women, youth and Masyarakat Adat (e.g., PACS, product development and marketing, public procurement, Geographical Indication)		?	?	?
<b>3.2.2</b>	Develop safeguards to ensure women and other vulnerable groups can access and benefit from community-level incentives and public procurement programs (including ABS provisions), whilst following FPIC		?	?	?

**Output 3.3** will address the necessary capacities (at all levels) for successful and sustainable exploitation of the target crops. The Project will identify priority areas/topics where capacity building is required and most needed. Based on these needs, training on all aspects related to marketing and value chains (market evaluation, information and communication, establishment of producer/exporter organizations, development of post-harvest technologies, product development, product presentation, trade regulations, food safety, quality requirements of buyers/processors, etc) will be identified or developed. This will lead to local entrepreneurs, Masyarakat Adat, farmer groups and other producer groups being able to access and benefit from the sale of the target crops, including, for example, to public procurement programs that offer stable demand, as well as being able to negotiate fair prices and favourable trade terms. Capacity building efforts will also be targeted towards building resilience to climate change impacts and future pandemics or other shocks.

Key deliverables for Output 3.3 are:

- ? Capacity needs assessment of beneficiaries and stakeholders and training material
- ? Report on training and other capacity building activities to address capacity needs conducted at local, national, and provincial level, including strengthening of farmer groups/associations
- ? Report of cross-learning, exchange visits organized between farmer groups, and other value-chain actors and stakeholders

Indicative activities under Output 3.3 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
<b>3.3.1</b>	Establish key competencies required among relevant stakeholder groups along the value chains, with a specific gender lens		?	?	?
<b>3.3.2</b>	Assess training and other capacity development needs and develop gender-tailored capacity building plan		?	?	?

<b>3.3.3</b>	Undertake trainings and gender-sensitive capacity building activities, including cross-learning, exchange visits organized between farmer groups, and other value-chain actors and stakeholders		?	?	?
<b>3.3.4</b>	Undertake other actions to strengthen capacity, such as (i) strengthening producer organizations/farmer associations, Masyarakat Adat, (ii) facilitating access by producer groups (including women's groups), Masyarakat Adat, to capital and equipment/small-scale technologies, (iii) developing business and marketing plans, and (iv) quality enhancement by improving processing capacity.		?	?	?

**Output 3.4** will develop and implement inclusive information campaigns (e.g., on diversity, nutrition, interculturality, cultural heritage) at the national, local, and provincial levels to foster greater appreciation and demand for the target crops. Using culturally appropriate tools and media, the campaigns will be based on lessons learned and best practices from previously evaluated awareness campaigns.

Key deliverables for Output 3.4 are:

- ? Communication strategy document
- ? Gender-responsive information material on value of target crops

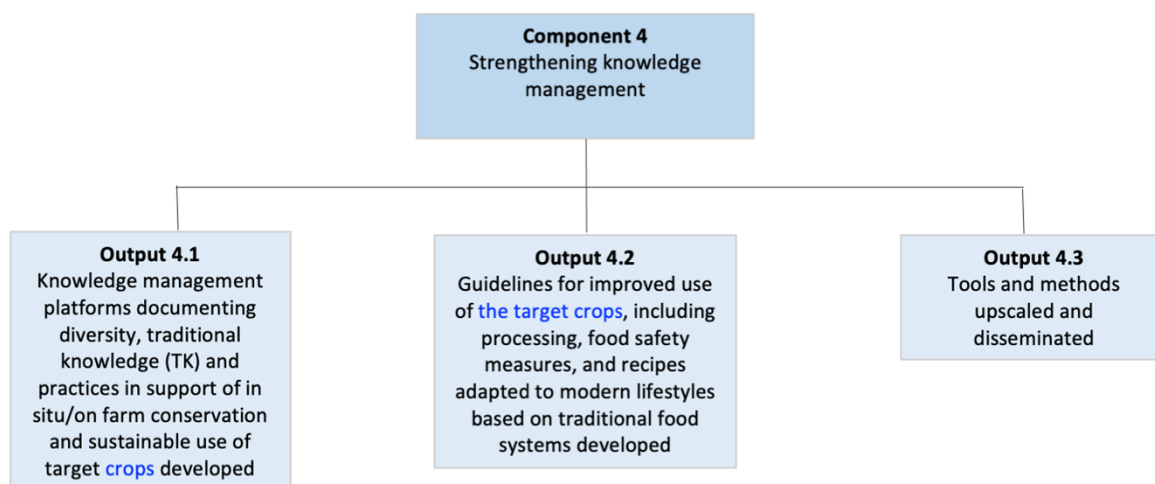
Indicative activities under Output 3.4 include:

<b>No.</b>	<b>Activity Description</b>	<b>National level</b>	<b>Central Java</b>	<b>Central Kalimantan</b>	<b>North Maluku</b>
<b>3.4.1</b>	Develop a communication strategy to disseminate project results on value of the target crops (including nutritional value, good agricultural practices, etc.) targeting different stakeholders (ensuring compliance with ABS provisions)		?	?	?
<b>3.4.2</b>	Develop and disseminate gender-responsive information/materials and methodologies for implementing best practices in selected project pilot sites		?	?	?

The information generated via this Component will be consolidated and integrated in national information systems planned under Component 4.

**Component 4:** This component aims to strengthen the knowledge management on the conservation and sustainable use of the target crops in Indonesia.





The expected outcome of this component, **Outcome 4**, is that **policy makers, farmers, Masyarakat Adat, breeders, extension officers and land managers have a one-stop access to knowledge on the target crops and their traits to support their conservation and use**. Any project activities impacting, including and targeting Masyarakat Adat, are to be implemented following the *Masyarakat Adat* Plan, in order to ensure full participation of the Masyarakat Adat, and that their rights to self-determination and FPIC are respected. Information and knowledge of social, cultural, economic, research and marketing related to the targeted crops will be collected, documented and disseminated to the widest possible audience, so that this knowledge, including best practices developed during the project lifetime, are adopted and routinely promoted to further the conservation and sustainable use of the target crops and their CWR. With regard to traditional knowledge, any documentation of TK will duly follow the provisions of the Nagoya Protocol and relevant national legislation and international instruments as well as the FPIC principles outlined in FAO's FPIC Manual and in Annex J. The utilization and exchange of traditional knowledge will be guided by community agreements and Community Biocultural Protocols where appropriate.<sup>[56]</sup>

ICABIOGRD, in close collaboration with MoEF, will be responsible for this Component, while additional support will be provided by research centres under the MoA to prepare tailored guidelines for the improved use of the target species (e.g., processing, packaging etc), in close consultation with local communities and community-based organizations.

Under **Output 4.1**, the Project will work closely with national data holders and establish collaborative arrangements for the sharing of data on the diversity of the target crops as well as on associated traditional knowledge and on practices in support of *in situ*/on farm conservation and sustainable use of local agrobiodiversity. The Project will establish the necessary infrastructure and capacity for developing a knowledge management (KM) platform and a database information system (co-hosted by MoA and MoEF, tbc) and will improve the availability of and accessibility to relevant information by encouraging the integration of pre-existing data and knowledge at the national and provincial level. Information from pilot sites and other project activities will also feed into this KM platform.

Key deliverables for Output 4.1 are:

- ? A web-based platform populated and updated with project information and other relevant information that becomes the authoritative source for conserving and mobilizing target crops and CWR
- ? Documentation of project-developed best practices in target areas

Indicative activities under Output 4.1 include:



No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
4.1.1	Identify key national data holders and develop collaborative agreements between relevant partners for information access, sharing and exchange[57]	?	?	?	?
4.1.2	Review existing relevant data at the national level and information management tools and approaches employed (including internationally)	?	?	?	?
4.1.3	Design appropriate database to capture scattered information and project generated data on diversity, traditional knowledge (TK) of target crops	?	?	?	?
4.1.4	Update content with existing national data and update regularly with data emerging from the project	?	?	?	?
4.1.5	Promote other knowledge sharing mechanisms such as through the multi-stakeholder network established under Output 2.4, as well as farmer associations, which could act as knowledge hubs for the transmission of both modern and traditional knowledge on the target crops. This should be done while respecting the right to self-determination and FPIC of Masyarakat Adat and as per their <i>Masyarakat Adat</i> Plans.	?	?	?	?

Under **Output 4.2**, the Project will tap into the rich cultural knowledge that exists on food preparation and local recipes, and devise strategies for adapting these to modern lifestyles. This will include the preparation of recipe books in local language to reach the widest possible audience. Guidelines that address issues of sustainable production and harvesting, processing, food safety, packaging and marketing of the target crops will be developed. Finally, the project will undertake the development and dissemination of toolkits, manuals and methodologies for upscaling conservation and sustainable use of the target crops. The production of this documentation and ensuring free access to this information and knowledge will be essential in ensuring the uptake of project results and outputs as well as sustainability beyond the lifetime of the project. The approaches employed will be applicable for the conservation and sustainable use of other crops and varieties in Indonesia. This component will enhance information and communication platforms. On the ground, the work will focus on the creation of information materials for dissemination to the wider public.

Key deliverables for Output 4.2 are:

? At least 5 publications highlighting innovative approaches to enhance the use of target crops covering production, and/or processing, marketing and utilization.

Indicative activities under Output 4.2 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
4.2.1	Prepare guidelines for improved use; processing; food safety; packaging; quality control; marketing, certification (fair-trade, eco-labelling), promotion, tailored to the needs of diverse stakeholders including women	?	?	?	?
4.2.2	Publish books in local language based on traditional recipes for nutritionally rich foods from local biodiversity and recipes adapted to modern lifestyles	?	?	?	?

Key lessons learned and good practices from key activities in all four Component areas will be analysed and reviewed under **Output 4.3** to identify and promote best practices for the conservation and sustainable use of the target crops. These can be used for replicability and scaling-up in other provinces and other ASEAN countries. This will include documentation of best practices for mobilizing the target crops as part of nutrition, food security and other relevant development initiatives, especially for value adding and improving livelihoods.

Key deliverables for Output 4.3 are:

- ? Best practices, tools, guidelines and methods documents.
- ? Report on the lessons learned and best practices of mutually supportive implementation of the Nagoya Protocol and the ITPGRFA regarding Access and Benefit Sharing (ABS) and the realization of Farmer's and Masyarakat Adat Rights.

Indicative activities under Output 4.3 include:

No.	Activity Description	National level	Central Java	Central Kalimantan	North Maluku
4.3.1	Review entry points by sector and across sectors with emphasis on mainstreaming the conservation and use of the target crops	?	?	?	?
4.3.2	Inventory project-developed best practices, tools and methods, including documentation of lessons learned and best practices of mutually supportive implementation of ABS	?	?	?	?
4.3.3	Document and disseminate project-developed best practices, tools, guidelines and methods for mainstreaming the conservation and use of the target crops	?	?	?	?

Target groups and beneficiaries include male and female farmers of local communities and Masyarakat Adat, farmer groups/cooperatives and private and public sector groups involved in

value chains; youth in rural areas; key policy and decision makers from relevant ministries, line departments and other agencies. Women are an important target group as they play key roles in cultivating and processing the target crops and in making consumption choices for their households. Further, the Project will follow international good practices in developing collaborative arrangements when working with local communities and Masyarakat Adat at target sites by employing Free Prior Informed Consent (FPIC) procedures to ensure transparency, accountability and equitable access to and benefits from project outputs (see Annex J). Through FPIC, the Masyarakat Adat can withhold their consent to be involved in any activities. This will offer opportunities for the co-creation of new knowledge based on traditional and scientific knowledge, while exploring innovations that creatively use food biodiversity and the co-creation of new market opportunities such as the growing trend in linking with chefs and the food sector and other value-added products. The Project will also ensure that relevant institutional capacities are strengthened and activities in all target sites will be implemented in close partnership with local governments and rural communities. The project intervention and approach adhere to CBD principles, guidance and decisions, particularly those relevant to mainstreaming biodiversity conservation, access and benefit sharing, and promoting the sustainable use of biological resources including creating market incentives.

#### **4) Alignment with GEF focal area and/or Impact Program strategies**

The project is fully aligned with the goal of GEF-7 Biodiversity Focal Area Strategy to *maintain globally significant biodiversity in landscapes* and in particular its Objective 1 to *mainstream biodiversity across sectors as well as landscapes and seascapes* especially through identified GEF-7 entry points: *biodiversity mainstreaming in priority sectors* and the *sustainable use of plant and animal genetic resources*. The project aims to mainstream biodiversity in the agriculture and forestry sectors by developing technical capacity and financial incentives for the conservation and sustainable use of globally important biodiversity, namely the genetic diversity of selected crops (rice, taro, yam, cloves, and nutmeg). The project supports the establishment of Crop Wild Relatives (CWR) reserves as well as the *in situ* conservation and sustainable use, through farmer management, of plant genetic resources in a Vavilov Centre of Diversity.

The project also contributes to Objective 3 of the Biodiversity Focal Area, which is to *further develop biodiversity policy and institutional frameworks*, through the development of policy and institutional frameworks to support implementation of the Nagoya Protocol on Access and Benefit Sharing. This will be done through the review and development of policies under Component 1, as well as awareness, capacity building and knowledge sharing under Components 1 to 4.

Such targeted investments safeguarding globally significant species and genetic resources are fundamental to more sustainable agriculture, food systems and diets that will not undermine or degrade biodiversity. This will support mainstreaming investments in production landscapes and practices that are more biodiversity-rich and positive, driven by enhanced consumer desirability and demand for food biodiversity. Key to this will be enhanced enabling environments which provide policy and regulatory incentives for conservation, diversification, and sustainable use of genetic resources, as well as:

- ? Analysis of key national policies across agriculture, environment and other relevant sectors to identify barriers, gaps and opportunities to mainstream biodiversity, and eliminate unintended negative interactions that arise when multiple sectoral plans are implemented independently of each other;
- ? Improved infrastructure, capacity building and links to private sector that encourages the innovative use of biodiversity;
- ? Financial mechanisms (certification, payment for environmental services from agrobiodiversity);
- ? Elimination of harmful policies and subsidies that promote uniformity and business as usual and the unacceptable ongoing loss of biodiversity.

By using incentive-based mechanisms, the Project aims to reconcile conflicting social, economic, and environmental interests and move away from the production of mainstream agricultural commodities and staple crops and unsustainable agricultural production practices. The Project will also contribute to local ecosystem services that secure food security, resilience, and livelihoods for local farmers and communities living in the project areas. Finally, the project also contributes to climate change adaptation by conserving globally important crop diversity and associated ecosystems.

At the highest level, the Project will contribute to the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs), in particular SDG 2 on Zero Hunger and SDG 15 Life on Land. The project will also promote the development of mechanisms for the implementation of the Nagoya Protocol. Through this activity, the project will address pillar III of CBD's guidance for the GEF-7, which requires the further development of biodiversity policy and institutional frameworks.

## **5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEF Trust Funds, and co-financing**

### Scenario without GEF Funding:

In the absence of the proposed project, it is anticipated that the loss of threatened and globally unique crop wild relatives (CWR) and landraces (LRs) of target Indonesian crops would continue due to limited knowledge of their importance, and limited capacities and incentives to farmers and other stakeholders to conserve and utilize these genetic resources for immediate benefits.

Preliminary evidence suggests there is restricted and fragmented attention to the benefits associated with maintaining native agrobiodiversity and their CWR *in situ* and on-farm (e.g., landscape resilience, food security and climate change adaptation potential). Agricultural preference is given to a smaller range of specialized improved species and varieties (e.g., rice), which continue to be promoted including in suboptimal production systems. At the same time, subsidies and policies are in place that undermine traditional production systems while market barriers hinder greater production and commercialization of the target species that are mostly grown by smallholder farmers for own consumption or for cultural value. Some local initiatives exist in the baseline to ensure seed provision, promote local food processing and value chains; however, these are not coordinated and not geared towards the conservation of globally important CWR and LRs.

Overall, there is a poor policy and regulatory enabling environment to facilitate the conservation and sustainable use of the target species and native agrobiodiversity more broadly, including CWR. Institutions and sectors mostly work in isolation, and current conservation and development strategies are not channelling sufficient support and resources to relevant actors and sectors, nor advancing market opportunities for the species. For example, there is weak support to farmers and local communities who might supply markets with such biodiversity. Absence of policy frameworks that are 'owned' by different sectoral Ministries, sub-national governments, farmers, and private sector will hamper efforts to have a mainstreamed approach to *in situ* conservation of plant genetic resources, including CWR. Furthermore, the government's commitment to implement the Nagoya Protocol nationwide will not be achieved at the scale and speed that is required.

In this business-as-usual scenario, current rates of loss of biodiversity and habitats would be expected to continue, contributing to loss of habitats and biodiversity leading to poor availability of the resources needed to support traditional livelihoods. A marked decline in agricultural profitability and traditional livelihoods would lead to out-migration especially of youth in search of economic opportunities elsewhere. The loss of flow of ecosystem services that sustain life, maintain health and wellbeing and economic activities in the target areas would continue to decline.

At the higher level, without this project the conservation and sustainable use of agricultural biodiversity will remain divorced from national development goals and receive less support from public policy. Ecosystems particularly rich in diversity will continue to face the threat of genetic erosion and the loss of valuable species, which will not be conserved and integrated into strategies to meet relevant sustainable development targets.

#### Scenario with GEF Funding:

GEF investments will build on national commitments to *in situ* conservation and sustainable use of plant genetic resources to establish strategic partnerships and improved working collaboration among stakeholders within relevant sectors (policymakers, researchers, agronomists, natural resource managers, farmers, Masyarakat Adat, communities and breeders) at national, provincial and local levels. Financing will also promote the development of policies, measures and mechanisms to help the Indonesian government meet its targets under the CBD and the Nagoya Protocol. Through this approach, the project will address pillar III of CBD's guidance for the GEF-7, which requires the further development of biodiversity policy and institutional frameworks. (Component 1)

Enhanced collaboration will lead to new scientific evidence and information about the benefits of target crops as well as of CWR occurrence, status and threats in Indonesia. The investment will have a strong approach to promote sustainable value chains, private sector involvement and use of additional incentives to ensure environmentally, economically, and socially sustainable approaches that build on traditional knowledge, as well as through use of modern approaches and technologies. GEF funds will be used to strengthen mechanisms for rewarding and compensating smallholder growers for maintaining socially desirable levels of the target crops in their farms. (Component 2)

In this alternative scenario, information generated in support of conserving and using the target crops will be used to promote increased production and markets for these crops both at the local and national level. Markets for these species may be perceived as either risky or of unknown risk by farmers and the private sector, but with supporting information about their benefits they hold considerable potential and, with it, the capacity to deliver global environmental benefits when steered into areas of global biodiversity importance. The reintroduction of traditional crops in production landscapes would also revive traditional knowledge and adaptive management systems, as well as revitalize cultural, value systems and social organizations. (Component 3)

Farmer access to existing improved crop varieties bred with genetic material from target crops and CWR, and use of native diversity in future crop improvement, will generate national benefits such as enhanced food security and resilience to climate change (e.g., resistance to new pest and diseases, adaptive traits to abiotic stresses) thereby boosting crop performance and poverty reduction and benefiting around 20,000 women and men in three target areas covering approximately 1,300,000 ha.

By addressing the sustainability of food security, the project will contribute to achieving SDG2 (Zero hunger) and specifically contributing to achieving SDG2 target 2.5 'By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species' by developing conservation strategies and policy interventions for the safeguarding and improving the accessibility and use of genetic diversity of CWR. Project activities will also indirectly support achieving other goals that support biodiversity and ecosystem management. By tackling the *in situ* conservation of CWR, the Project will contribute to protecting and restoring landscapes, reversing land degradation and minimising biodiversity loss (SDG15). Promoting the conservation of CWR and providing adaptive genes for combating the impact of climate change on food production contributes to SDG13. By developing markets and value chains for the target species that benefit smallholders and the livelihoods of other value chain actors, the Project contributes to poverty eradication (Goal 1). GEF funds will finally support and facilitate learning from global best practices on access and benefit sharing (ABS) as well as sharing of lessons from Indonesia internationally.

Contribution from co-financing:

The project builds on significant co-financing including:

- (1) ICABIOGRD provision of expertise and facilities for the conservation and management of agricultural genetic resources (Components 1, 2 and 4);
- (2) Central government agencies, including research and development centres, will contribute their work on biodiversity management, seed production, biogenetic resource collection and evaluation, germplasm maintenance, variety improvement, farmer capacity building, mentoring and release of varieties, mentoring to seed production and agriculture business, collection gardens, local food diversification research, research and development of postharvest technologies (Components 2 and 3);
- (3) Provincial government agencies will contribute through their work on community empowerment, economic development training, facilitation and production of seed and postharvest equipment, pest and disease control (Components 2 and 3).
- (4) Local government agencies in the three provinces for their work related to the 5 target crops especially nutmeg and cloves (seed provision, farmer business, road construction etc), community empowerment, food diversification, local food processing training, included management of biogenetic resource of animal, plant and microorganism as well as the utilization of animal and plant biogenetic resources, program related to nutmeg and cloves extensification, value chain development, rehabilitation, maintenance of gardens (conservation), agriculture extension and development of village food estate (Components 2 and 3).
- (5) Contributions from a private company for sharing their experience and identify potential opportunities for product marketing and community development (Component 3).

**6) Global environmental benefits (GEBs)**

The global environmental benefits (GEBs) resulting from the GEF investment include (1) conservation of globally significant biodiversity (namely, globally unique varieties of rice, taro, yam, cloves, and nutmeg), (2) sustainable use of the components of globally significant biodiversity, and (3) fair and equitable sharing of the benefits arising from the utilization of genetic resources, including by appropriate access to genetic resources. These GEBs will accrue through continued existence, availability and access to/of genetic diversity of selected crops (rice, taro, yam, cloves, and nutmeg) in their centres of origin. Increased awareness of the importance and value of maintaining plant genetic diversity *in situ* and the increased capacities of stakeholders to work together are also expected to lead to wider conservation impacts. Working as one, the national, provincial, and local government agencies, Masyarakat Adat, local communities, farmers (especially women and youth), researchers, national and international partners will make a significant contribution to global, national and local environmental and socio-economic benefits, including:

- ? *In situ* and on-farm conservation of globally important crop gene pools in production landscapes for future climate change adaptation (by ensuring they continue to evolve and adapt);
- ? Maintaining global agricultural diversity and reducing crop uniformity;
- ? Implementation of biodiversity-based food production practices covering large areas of land, conserving globally important agrobiodiversity;
- ? Preservation of Masyarakat Adat knowledge and food systems, and the co-creation through interculturality of new knowledge through synergies with scientific knowledge;
- ? Increased vegetation cover and soil quality (as compared to conventional agricultural production systems) in project locations;
- ? Exemplar and replicable policies that incentivize the conservation and use of agrobiodiversity and that help re-orient agricultural priorities from producing large quantities of food to producing more nutrient-rich, healthy food;

- ? Policy tools and methodologies that help countries analyse barriers and harmful subsidies, as well as opportunities to better mainstream agrobiodiversity;
- ? Favourable policy and institutional environments supporting diverse and sustainable food production and consumption including enhanced demand for sustainable agrobiodiversity products;
- ? Enhanced desirability for food biodiversity recognizing its central role in healthy and sustainable diets;
- ? National knowledge platform on the target crops including characterization and evaluation data to support species? exchange and use in plant breeding programs;
- ? Improved knowledge sharing including globally applicable methodologies, lessons learned, good practices and guidelines for policymaking and mainstreaming that can be scaled up in Indonesia, and adapted to other global centres of origin through South-South Cooperation, the FAO network and the Commission on Genetic Resources for Food and Agriculture;
- ? Increased opportunities for rural employment via improved value chains for agrobiodiversity.

The greater mainstreaming of biodiversity in production landscapes promoted by the Project, including enhanced ecosystems services and accrual of global environmental benefits (GEBs) will make a significant contribution to the extent of land under improved management to benefit biodiversity (1,300,000 ha) for GEF Core Indicator 4. As will the promotion of associated agroecological and sustainable land management practices resulting in more diverse and resilient landscapes for better biodiversity management, soil health and water management.

Furthermore, the project is anticipated to result in 498,148 tons of CO<sub>2</sub>e mitigated (direct) through avoided forest degradation in 65,000 hectares of crop wild relative (CWR) reserves across the three project sites. This is based on the following assumptions:

- 1) The project interventions in Central Kalimantan will result in avoided forest degradation from low to moderate in 5% of the 30,000 ha of CWR reserve, resulting in 280,410 tons of CO<sub>2</sub>e mitigated.
- 2) The project interventions in Central Java will result in avoided forest degradation from low to moderate in 5% of the 15,000 ha of CWR reserve, resulting in 30,798 tons of CO<sub>2</sub>e mitigated.
- 3) The project interventions in North Maluku will result in avoided forest degradation from low to moderate in 5% of the 20,000 ha of CWR reserve, resulting in 186,940 tons of CO<sub>2</sub>e mitigated.

The greenhouse gas (GHG) mitigation benefits are summarized in the table below.

<b>Activity</b>	<b>GHG mitigation benefits (tons CO<sub>2</sub>e)</b>
1) Avoided forest degradation in Central Kalimantan through the establishment of CWR reserves and associated incentive mechanisms (estimated 1,500 ha, i.e. 5% of 30,000 ha)	-280,410
2) Avoided forest degradation in Central Java through the establishment of CWR reserves and associated incentive mechanisms (estimated 750 ha, i.e. 5% of 15,000 ha)	-30,798
3) Avoided forest degradation in North Maluku through the establishment of CWR reserves and associated incentive mechanisms (estimated 1,000 ha, i.e. 5% of 20,000 ha)	-186,940
<b>Total GHG mitigated (direct)</b>	<b>-498,148</b>

Through the project's activities, including the enabling policies (Component 1), the establishment of CWR reserves, the development of management plans and collaboration mechanisms (Component 2), associated incentive mechanisms (Component 3), and improved knowledge sharing (Component 3), it is expected that the improved forest management practices will remain

active after the life of the GEF project. Additional indirect GHG mitigation benefits could be achieved through the long-term outcomes of GEF activities that remove barriers, such as capacity building, innovation, and catalytic action for replication. However, these cannot be quantified at the moment and would be added during project implementation, if appropriate.

Project beneficiaries will also receive monetary and non-monetary benefits from their involvement in the project, including cash and non-cash farmer incentives such as through Payments for Agrobiodiversity Conservation Services (PACS) and Geographical Indications (GIs). The main example of monetary benefits includes improved job creation and income generation for beneficiaries via the creation of new markets and value chains, especially for women and youth. Key examples of non-monetary benefits include access to project outputs, services, knowledge, and capacity building as well as benefits from enhanced food security and nutrition and enhanced wellbeing. It is anticipated that the project will make a considerable contribution to GEF Core Indicator 11, in this regard, with benefits arising to 20,110 beneficiaries, half of whom will be women.

## **7) Innovativeness, sustainability, potential for scaling up and capacity development**

*Innovativeness:* Aside from the innovative cross-sectoral collaboration processes, the project will also implement emerging research-based strategies and approaches for conserving and sustainably managing crop diversity that have not been previously applied to conserving agrobiodiversity in Indonesia. Much of the remaining diversity of crop wild relatives, local landraces and farmer varieties in the country is managed on fields, farms and forests by local farmers and land users, but this diversity and threats to it have not been systematically mapped. Here the Project's methods and approaches include using internationally approved Descriptor Lists to systematically assess the diversity of CWR, establishing a robust CWR information system according to international standards (FAO, 2017), and establishing community nurseries/participatory plant breeding to ensure that unique varieties are conserved in ways that support farmers' continued access to the genetic resources<sup>[58]</sup>. Significant emphasis is also placed on developing technical and institutional capacities for maintaining and managing crop diversity in the wild and on-farm, with activities focused on participatory decision making and implementing conservation actions, as well as developing action plans and adapting existing protected area management plans to include CWR conservation (Component 2). Successful commercialization of the target crops will be fostered through internationally recommended strategies and best practices that focus on the expansion of demand, improved efficiency of production and special marketing channels, and supply control mechanisms<sup>[59]</sup>. The project will also identify, develop, and test a number of innovative incentive mechanisms to support farmers to conserve and sustainably manage crop diversity and benefit from it. These include both non-cash and cash rewards, such as access to trainings on value addition and marketing, Payments for Agrobiodiversity Conservation Services (PACS) and Geographical Indication. The role of farmers as custodians of biodiversity is recognised, and their livelihoods are improved as they will be able to sell not only agricultural commodities but also a conservation service for maintaining the country's rich agricultural and natural heritage (Component 3). The project also includes a major component on knowledge management since preliminary baseline studies indicated this to be a major gap for effective decision-making on conservation and management. A knowledge management platform and dissemination tools will be used to bring the conservation and sustainable use of crop diversity higher on the agenda of decision-makers and closer to the minds of the wider public (Component 4).

*Capacities development:* Capacity must be significantly strengthened at various levels and scales for successful implementation and if the project is to achieve its longer-term objectives. Three main training programmes to target different audiences relevant to the policy enabling environment, conservation, and use (value chain and market development) of the target crops are planned. Given that women are key custodians of local diversity, gender-sensitive trainings will be developed and organized based on the information needs and time/labour burdens of women in mind, with at least 50% female participation in trainings expected. Capacity needs assessments will



be carried at the outset of the project to assess capacity needs at national, provincial and local levels and an action plan designed to build capacity and awareness of policy options and mainstreaming tools, for *in situ* conservation as well as capacity for market development and value chains. Capacity will be built at the systemic level (policies and enabling environment under Component 1); institutional level (national and subnational government institutions as well farmer organizations/groups under all four Components); and individual level (policy makers, extension officers, farmers, among others, under Components 1-3). Finally, capacity will also be strengthened by implementing all project activities under the lead of and/or in close partnership with local governments and rural communities. As explained under Output 1.2 description, this will also involve institutionalization of the training programmes into the regular programmes of the relevant agencies.

*Sustainability:* The Project's strategies are designed to achieve sustainability by unlocking positive, mutually enhancing processes for transformative change. Strengthening the enabling environment through cross-sectoral collaboration and streamlining of goals and resources are key for the long-term sustainability of the Project's results (Component 1). Capacity building efforts, including the institutionalization of training programmes into the regular programmes of the relevant agencies, will also contribute to sustainability. Processes that demonstrate the benefits of agrobiodiversity and motivate new investments in conservation and sustainable use include promoting the fair and equitable sharing of benefits arising from the utilization of genetic resources, undertaken within the framework of the Nagoya Protocol and related instruments (Component 2). Similarly, the Project will create incentives for the conservation and sustainable use of the target crop diversity by: i) characterising the adaptation, nutritional, and health benefits of local varieties; ii) supporting small-scale entrepreneurship development and organisation, especially among rural women; iii) helping farmers obtain certification for sustainable production; and iv) establishing strong and fair partnerships between producers, dealers, consumers and other stakeholders in the production to consumption food value chain (Component 3). The Project's goal is to establish a robust market for traditional varieties and landraces of the target crops locally, and regionally, which will then motivate agrobiodiversity conservation. Overall, the direct involvement of smallholder farmers, local communities and other land managers in the testing and evaluation of conservation and sustainable use practices and incentives will help ensure that the identified good practices are relevant and adopted into use beyond the project's duration. The consistency of the Project's goals with the Indonesia Biodiversity Strategy and Action Plan (IBSAP) also contributes to sustainability, both in terms of alignment with policy priorities and financing. The results and related key services are likely to be economically and financially affordable for participants, stakeholders (beneficiaries) upon completion of project, hence ensuring sustainability of the results as well as replication. Under Output 1.4, a financing plan will be developed, and arrangements made for the implementation of the National Strategy and Action Plan, by assigning roles and responsibilities. Related to this, a target is included in the Results framework related to the 'Increased allocation of resources or budget towards the conservation and deployment of crop diversity.' This will further contribute to the sustainability of the project's interventions.

*Potential for scaling:* Through developing and systematically testing conservation and sustainable use strategies on the target crops in three provinces, the Project generates knowledge on the applicability and effectiveness of available approaches and methods. Information collected on the resources, capacities and institutional arrangements required for successful implementation in diverse socio-ecological contexts will allow expanding the Project's approaches to other crops and locations. Investments in the enabling environment through holistic, cross-sectoral strategic planning and budgeting broadly support institutional capacities and provide the necessary foundation for scaling. Lastly, focusing on gender-responsive and socially inclusive approaches from the outset contributes to stakeholders' awareness of the gender and social dimensions implicit in agrobiodiversity management and helps ensure that scaling strategies will also be equitable and inclusive. Key lessons learned and good practices from key activities in all four Component areas will be analysed and reviewed under Output 4.3 to identify and promote best practices for the conservation and sustainable use of the target crops. These can be used for replicability and

scaling-up in other provinces and other ASEAN countries. Once the linkages across sectors and agencies have been established and effective working partnerships formed, Indonesia will be well placed to act as a hub for CWR conservation and on-farm management of plant genetic resources in the region and globally.

## 8) Summary of changes in alignment with the project design with the original PIF

Several important changes were made to the project design in response to comments received from GEF's Scientific Technical Advisory Panel (STAP). STAP comments referred both to several shortcomings in the project design and the logic of the interventions as well as suggestions to clarify key project outcomes to represent changes in the state of the world, and the achievement of the project's final goals and objective. Taking stock of these recommendations, the project's Theory of Change (TOC) was revised to:

1. Address the main barriers identified during the preliminary field assessments, stakeholder consultations and desk reviews, including the key drivers of plant genetic resources loss of the target crops in Indonesia;
2. Provide more logic and inter-relatedness to outcomes and outputs;
3. Rationalize the numbers of outcomes and outputs based on baseline assessments and stakeholder consultations, including consultations with GEF STAP, making them much tighter and concise than before.

The revised TOC, discussed and agreed upon by all project partners and agencies, is described in *Section 3) Alternative scenario* and was used to develop the Project's Results Framework (Annex A1) and Workplan (Annex G) prepared as part of this submission.

The co-financing amount has been increased from USD 58.6 million at PIF stage to USD 92.8 million, through more detailed consultations with key project partners and identification of their baseline initiatives. While linkages will still be established with IFAD-funded initiatives as described in the baseline section, IFAD co-financing was replaced with more relevant Government baseline investments that more directly contribute to the project's implementation.

The Directorate General of Natural Resources and Ecosystem Conservation (Ministry of Environment and Forestry) has been removed from the Executing Partners, as the modality used for involvement of MoEF will be through Letter of Agreement (LOA) with FAO. However, MoEF will continue to play a key role in project implementation, as described in *Section 3) Alternative scenario*, Annex G (work plan), in particular in Components 1 and 2.

A detailed explanation and justification of the changes is included in the table below.

Topic	PIF	CEO endorsement request (revised)	Explanation
Co-financing	Total of USD 58,578,224, of which USD 16,673 in investment mobilized.	Total of USD 92,815,024, of which USD 60,011,756 in investment mobilized.	The co-financing amount, including the investment mobilized, was increased based on more detailed consultations with key project partners during PPG. IFAD co-financing was replaced with more relevant Government baseline investments that more directly contribute to the project's implementation.

Implementation arrangements	<p>The Indonesian Centre for Agricultural Biotechnology and Genetic Resources Research and Development (Ministry of Agriculture) and the DG Natural Resources and Ecosystem Conservation (Ministry of Environment and Forestry) were mentioned as Executing Partners in the PIF.</p>	<p>The Indonesian Centre for Agricultural Biotechnology and Genetic Resources Research and Development (Ministry of Agriculture) is the Lead Executing Agency.</p>	<p>The modality used for involvement of MoEF will be through Letter of Agreement (LOA) with the Executing Agency or with FAO. However, MoEF will continue to play a key role in project implementation, as described in the CEO endorsement request.</p>
Core Indicator targets	<p>? Core Indicator 4 target (area of landscapes under improved practices): 1,300,000 ha</p> <p>? Core Indicator 6 target (GHG mitigated): n/a</p> <p>? Core Indicator 11 target (direct beneficiaries): 20,000 (50% women) 20,110</p>	<p>? Core Indicator 4 target remains unchanged. Details were elaborated during the PPG phase as explained in the separate Excel file ?Area and beneficiaries calculation?. The target sites identified at PIF stage remain unchanged.</p> <p>? Core Indicator 6 target (GHG mitigated): 498,148 (as per separate EX-ACT calculation)</p> <p>? Core Indicator 11 target (direct beneficiaries): 20,110 (50% women) as per separate Excel file.</p>	<p>No significant changes in the Core Indicator targets except for the addition of a GHG mitigation target under Core Indicator 6.</p>

Objective	To strengthen the conservation and sustainable use of globally significant crop diversity, in the wild and on-farm, <b>originating in Indonesia</b> , through sustainable practices and improved capacities, a strengthened enabling environment, and the development of long-term incentive mechanisms	To strengthen the conservation and sustainable use of globally significant <b>Indonesian</b> crop diversity, in the wild and on-farm, through sustainable practices and improved capacities, as well as strengthened enabling environment and the development of long-term incentive mechanisms	Only minor changes in wording were made to make the sentence easier to read.
Component 1	1. Strengthen the enabling environment to promote the conservation and sustainable use of the plant genetic diversity of important endemic local crops and varieties	<b>1.</b> Strengthen the enabling environment to promote the conservation and sustainable use of globally important crop diversity	?Globally important? was added to emphasize the focus of the GEF project on globally significant crop diversity. ?Plant genetic diversity of local crops and varieties? has been simplified as ?crop diversity? to make it easier to read.

Outcome 1	<p>1.1 National strategies/ policy developed to streamline the cross sectoral conservation and sustainable use of endemic PGRFA with focus on implementation of the Nagoya Protocol and other relevant instruments</p> <p>1.2 Conservation and sustainable use of plant genetic resources have been harmonized and mainstreamed into cross- sectoral and sectoral policies and planning</p> <p>1.3 Recommendations provided to provincial and district governments for policies promoting the conservation and sustainable use of endemic crop and varieties</p>	<p><b>1.</b> Harmonized, cross-sectoral and inclusive policy frameworks support the conservation and sustainable use of globally unique Indonesian plant genetic resources ensuring the continued availability of the target species<sup>[60]</sup> for long-term <i>in situ</i> conservation</p>	<p>An in-depth process was undertaken during PPG to elaborate the Theory of Change (TOC) in consultation with stakeholders. The three Outcomes of the PIF were grouped into a single Outcome to address the following STAP comments on the PIF:</p> <p>? The language of the outcomes is more like that of outputs and tells us very little about what changes in the state of the world this work (that contribute to the overall objective) are intended to be achieved.</p> <p>? It's very hard to understand the difference between Outcomes 1.1 and 1.2.</p>
Output 1.1	<p>1.1.1 National strategy or policy for conservation and sustainable use of the genetic diversity of important native local crops and varieties in line with relevant international instruments</p>	<p><b>1.1</b> Cross-sectoral, inclusive national policy platform for mainstreaming conservation and sustainable use of important plant genetic resources established</p>	<p>An Output 1.1 was added on the establishment of a policy platform. The strategy/policy development was moved to new Output 1.4.</p>

Output 1.2	1.1.2 Gap analysis undertaken of ABS provisions in existing policies, laws and regulations, stakeholder identification, user rights and intellectual property rights, and assess institutional capacity including research organizations	<b>1.2</b> Policy, legal and capacity gap analysis in relation to the conservation and sustainable use of the target crops carried out	The gap analysis was revised to only focus on policy, laws and capacity related to the conservation and sustainable use of the target crops. ABS elements were moved to the separate new Output 1.5.
Output 1.3	1.1.3 Capacity built among stakeholders (including local communities, especially women) to negotiate between providers and users of genetic resources.	<b>1.3</b> Capacity of policymakers at national, provincial, and local level to plan and implement policies in support of the target crops enhanced	Capacity building under this Output was revised to only focus on conservation and use of the target crops. ABS elements were moved to the separate new Output 1.5.
Output 1.4	1.1.4 Strategy and action plan for the implementation of ABS measures. (e.g. policy, legal, and regulatory frameworks) governing ABS developed and implemented	<b>1.4</b> Cross-sectoral National Strategy and Action Plan and policy recommendations for the conservation and sustainable use of the target crops developed in line with relevant international instruments, including UNDRIP	Based on consultations with stakeholders, the Strategy and Action Plan is now focused only on conservation and sustainable use (not ABS). This also incorporates original Outputs 1.2.1 on agricultural policies and 1.3.1 on provincial strategies/policies. ABS elements were moved to the separate new Output 1.5.

Output 1.5	<p>1.2.1 Assessment of existing agricultural policies for coherence, including harmonizing incentives and disincentives for promoting sustainable agricultural practices across the Ministries of Agriculture, Environment and Forestry and provincial policies</p> <p>1.3.1. Four provincial strategies/policies produced with district-level plans developed</p>	<p><b>1.5</b> Access and benefit sharing (ABS) procedures harmonized, and capacities for their implementation developed, including in relation to traditional knowledge relevant to plant genetic resources, UNDRIP and in consideration of FPIC and Masyarakat Adat Plans as outlined in Annex J</p>	<p>Outputs 1.2.1 and 1.3.1 were incorporated into new Output 1.4. The new Output 1.5 is focused on harmonization and implementation of ABS procedures.</p>
Component 2	<p>2. Conservation and utilization of selected crops <b>and their crop wild relatives species</b> are ensured for sustainable agricultural development, food security and environmental stability</p>	<p><b>2.</b> Conservation and utilization of selected crops <b>and their crop wild relatives (CWR)</b> for sustainable agricultural development, food security and environmental stability</p>	<p>No significant change.</p>

Outcome 2	<p>2.1 Methodologies on in situ/on farm conservation and utilization of crops and wild species are available, disseminated and used.</p> <p>2.2 Capacities strengthened to support long-term plans and up-scaling of incentive- based approaches for the in situ/on-farm conservation and sustainable use of crop diversity for resilient agriculture and sustainable production</p> <p>2.3 Improving the linkages between ex situ and in situ conservation and on-farm management of PGRFA efforts</p>	<p><b>2.</b> CWR and landraces (LRs) of target Indonesian crops are effectively safeguarded within an integrated conservation and use system to halt genetic erosion and contribute to national and global food and nutrition security in the face of climate change</p>	<p>An in-depth process was undertaken during PPG to elaborate the Theory of Change (TOC) in consultation with stakeholders. The three Outcomes of the PIF were grouped into a single Outcome to address STAP comments on the PIF.</p>
Output 2.1	<p>2.1.1 Mapping the locations of CWRs, characterization and evaluation for adaptive and agronomic traits, the assessments of threats and the development and implementation of conservation mechanisms</p>	<p><b>2.1</b> The diversity of CWR and LR of target Indonesian crops assessed, mapped and hotspots identified for active <i>in situ</i> and on farm conservation facilitating access and use of genetic resources while ensuring the respect of FPIC and Masyarakat Adat Plans as outlined in Annex J</p>	<p>The Output was reworded as part of the TOC exercise, to describe more clearly the interventions related to mapping necessary to achieve the project objective.</p>



Output 2.2	<p>2.2.1 The application of the results of innovative research and training for the diverse stakeholders made available</p> <p>2.2.2. Links with extension services will be established and their capacity to support local enhanced through capacity building approaches, such as farmer field schools</p> <p>2.2.3 Communities? capacity for conserving and using crop diversity and diversification in situ and on-farm is enhanced to ensure the sustainability of conservation and use initiatives</p>	<p><b>2.2</b> Capacity of all stakeholders[61] to deploy effective integrated, culturally sensitive and gender-sensitive approaches for <i>in situ</i>/on farm conservation and use of target Indonesian crops enhanced as per the FPIC processes and Masyarakat Adat Plans (including through establishment of genetic reserves and community nurseries/ participatory plant breeding)</p>	<p>This Output was reworded to focus on capacity development linked with on-the-ground interventions of conservation activities, considered necessary to achieve the project objective. The three original Outputs were grouped as the differentiation was unclear.</p>
Output 2.3	<p>2.1.2 Use of existing methods and tools for documenting crop diversity and traditional knowledge</p>	<p><b>2.3</b> Good practices and incentive mechanisms for <i>in situ</i>/on farm conservation and use of target CWR and LRs identified, adopted and disseminated. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation as per Annex J</p>	<p>The documentation of crop diversity and traditional knowledge was incorporated into Component 3. An Output on the identification and adoption of good practices and incentive mechanisms was added as part of the TOC exercise.</p>

Output 2.4	2.3.1 Effective management plans developed for in situ and ex situ conservation of the selected species	<b>2.4</b> A national network of stakeholders and conservation sites to support conservation, access and exchange of seeds and plant materials of CWR and LR of target crops developed, inclusive of Masyarakat Adat, their representatives and organizations and carried out in respect of the FPIC and Masyarakat Adat Plans	The development of management plans was incorporated into Output 2.2 (see above). An additional Output was added on establishing a national network of stakeholders and conservation sites as part of the TOC exercise.
Component 3	3. Mainstreaming diversity of local varieties through biological, socio-cultural and economic evaluation and the development of market/non-market incentives and linkages in target sites	<b>3.</b> Development of market/non-market incentives and linkages in target sites for the target crops	The part on 'evaluation' was removed as it was unclear.

Outcome 3	<p>3.1 Improved marketing of products made from local varieties, including through the use of both traditional knowledge and modern technologies, taking into account market /non-market initiatives to increase local crop diversity production and availability</p> <p>3.2 Harmonization of rules, protocols and guidelines between users and providers of plant genetic resources</p>	<p><b>3.</b> Producers, Masyarakat Adat, processors, consumers, and researchers are aware and benefit from the sustainable use of the target crops</p>	<p>An in-depth process was undertaken during PPG to elaborate the Theory of Change (TOC) and address STAP comments in consultation with stakeholders. The Outcome was reworded to represent a 'state of the world' rather than an output. Original Outcome 3.2 related to ABS protocols was incorporated into Component 1 (new Output 1.5).</p>
Output 3.1	<p>3.1.1 Evaluation of local varieties through traditional knowledge, socio-cultural assessment and economic issues</p>	<p><b>3.1</b> Barriers limiting the production and use of target species in value chains assessed and strategies to address them developed, respecting the FPIC and rights to self-determined development of the Masyarakat Adat (see Annex J)</p>	<p>The Output was reworded as part of the TOC exercise. A barrier analysis is considered necessary by stakeholders to achieve the project objective. Elements related to the socio-cultural values are incorporated into new Output 3.4.</p>
Output 3.2	<p>3.1.2 Development of on-farm conservation approaches and technologies to ensure long term, demand-driven conservation of local varieties</p>	<p><b>3.2</b> Market and non-market incentives for farmers and Masyarakat Adat to grow the target crops in pilot communities identified and tested and agreed through the FPIC processes and Masyarakat Adat Plans</p>	<p>This Output was reworded to avoid duplication with activities under Component 2 and to emphasize the focus on the market and non-market incentives.</p>

Output 3.3	3.1.3 Business and marketing plans developed in pilot communities to maximize opportunities for product development and revenue creation based on strengthening market linkages among breeders, small-scale farmers and local and provincial markets to mainstream local crop diversity	<b>3.3</b> Capacity of producers, processors, consumers, and researchers to use and benefit from the target crops enhanced	This Output was broadened to include capacity development more broadly depending on the capacity needs that will be identified. The development of business and marketing plans is part of this Output, as outlined in Activity 3.3.4.
Output 3.4	3.2.1 Clear procedures and protocols and guidelines issued for bioprospecting research and development, including IPR application	<b>3.4</b> Inclusive information campaigns (e.g., on diversity, nutrition, interculturality, cultural heritage) at the national, local, and provincial levels developed and implemented as per FPIC for Masyarakat Adat crops and foods, to foster greater appreciation and demand for the target crops	Bioprospecting research was removed based on the comment from STAP on the PIF. Market and non-market incentives will be identified under Outputs 3.1 and 3.2. The new Output 3.4 is focused on information campaigns considered necessary to achieve the project objective. ABS elements are incorporated into new Output 1.5.
Component 4	4. Strengthening knowledge management	<b>4.</b> Strengthening knowledge management	No change

Outcome 4	<p>4.1 Information and knowledge of social, cultural, economic, research and marketing aspects related to crops and their local varieties will be collected, documented and disseminated for providing basic support for further conservation and sustainable utilization</p> <p>4.2 Education, public awareness and dissemination in support of promoting the conservation and sustainable use of crop diversity</p>	<p>4. Policy makers, farmers, Masyarakat Adat, breeders, extension officers and land managers have a one-stop access to knowledge on the target crops and their traits to support their conservation and use</p>	<p>The Outcome was revised as part of the TOC exercise to better focus on knowledge management and avoid overlap with Component 3.</p>
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Output 4.1	<p>4.1.1 Traditional and new knowledge, generated through participatory research for in situ/on-farm conservation and sustainable use of crop wild relatives and local varieties, documented together with best practices/ lessons learnt from pilot sites to applicability to other crops and varieties in Indonesia</p> <p>4.1.2 Establishing/ enhancing information and communication platforms (web-based information platform and inter-sector working groups), dedicated to in situ/on-farm conservation</p> <p>4.1.3 Databases of species, varieties, traditional research and development practices for conservation and sustainable use of local varieties created</p>	<p><b>4.1</b> Knowledge management platforms documenting diversity, traditional knowledge (TK) and practices in support of <i>in situ</i>/on farm conservation and sustainable use of target crops developed. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation as per Annex J</p>	<p>The Output wording was revised to explain more clearly how the documentation of knowledge will be done. The initial three Outputs were merged to avoid duplication and make the Output more focused.</p>
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Output 4.2	4.2.1 Creation of information materials for dissemination to the wider public	<b>4.2</b> Guidelines for improved use of the target crops, including processing, food safety measures, and recipes adapted to modern lifestyles based on traditional food systems developed. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation as per Annex J	The Output was made more concrete based on consultations with stakeholders as part of the TOC exercise. Awareness was moved to Output 3.4 as there is a link with other Outputs under Component 3.
Output 4.3	4.2.2 Integration of crop diversity into the curricula of university, primary and secondary school modules and/or courses	<b>4.3</b> Tools and methods upscaled and disseminated. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation as per Annex J	Elements of the original Output were included under Component 3 to increase demand for target crops. A new Output focused on scaling and dissemination was added as part of the TOC exercise, with a view of scaling project results.
Project Monitoring and Evaluation	n/a	Project M&E is conducted regularly	Separate component added on Project M&E

[1] Rahman, W., Brehm, J.M. and Maxted, N., 2019. Setting conservation priorities for the wild relatives of food crops in Indonesia. *Genetic Resources and Crop Evolution*, 66(4), pp.809-824. <https://doi.org/10.1007/s10722-019-00761-1>

[2] FAO and the Centre for Indigenous Peoples? Nutrition and Environment (CINE) at McGill University (2009). *Indigenous Peoples? Food Systems: the many dimensions of culture, diversity and environment for nutrition and health*. <https://www.fao.org/3/i0370e/i0370e.pdf>

FAO and Alliance of Bioversity International and CIAT (2021). *Indigenous Peoples? food systems: Insights on sustainability and resilience from the front line of climate change*. <https://www.fao.org/documents/card/en/c/cb5131en/>

[3] Latifa, E. (2015). Access to Genetics Resources in Indonesia: Need Further Legislation? <https://digitalcommons.law.ou.edu/cgi/viewcontent.cgi?article=1001&context=okjolt>

[4] Perdana, A. (2021). Regulatory Framework of Material Transfer Agreement (MTA) under Indonesian Laws. *International Journal of Social Science and Human Research*. 04. 10.47191/ijsshr/v4-i5-37. <https://ijsshr.in/v4i5/Doc/37.pdf>

Based on the Regulation of the Minister of Agriculture (Permentan) No. 37 Year 2011, the exploration of genetic resources is regulated by Prior Informed Consent (PIC), Mutually Agreed Terms (MAT) and Material Transfer Agreement (MTA).

[5] <https://www.fao.org/3/ca3877en/ca3877en.pdf>

[6] <http://biogen.litbang.pertanian.go.id/codevelopment/>

[7] M. Hermann (2009) The impact of the European Novel Food Regulation on trade and food innovation based on traditional plant foods from developing countries. *Food Policy* 34; 499-507

- [8] *The State of the World's Biodiversity for Food and Agriculture*. B?langer, J., Pilling, D., eds.; FAO. CGRFA Assessments: Rome, Italy, 572p. <http://www.fao.org/3/CA3129EN/ca3129en.pdf>
- [9] See also Perdana, A. (2021). Regulatory Framework of Material Transfer Agreement (MTA) under Indonesian Laws. *International Journal of Social Science and Human Research*. 04. 10.47191/ijsshr/v4-i5-37. <https://ijsshr.in/v4i5/Doc/37.pdf>
- [10] <https://chm.cbd.int/database/record?documentID=248249>
- [11] Mardiasuti, Ani. (2019). Implementation of Access and Benefit Sharing in Indonesia: Review and Case Studies. *Jurnal Manajemen Hutan Tropika*. 25. 10.7226/jtfm.25.1.35.
- [12] Latifa, E. (2015). Access to Genetics Resources in Indonesia: Need Further Legislation? <https://digitalcommons.law.ou.edu/cgi/viewcontent.cgi?article=1001&context=okjolt>
- [13] <https://kalteng.bps.go.id/indicator/12/390/1/jumlah-penduduk.html>
- [14] Also sometimes referred to as districts.
- [15] <https://www.protectedplanet.net/country/IDN>
- [16] <https://www.protectedplanet.net/2100>
- [17] <https://en.unesco.org/biosphere/aspac/tanjung-puting>
- [18] <https://www.protectedplanet.net/555571205>
- [19] <https://www.protectedplanet.net/555635870>
- [20] <https://www.protectedplanet.net/555635866>
- [21] Based on United Nations Environment Programme's World Conservation Monitoring Centre dataset (UNEP-WCMC) (2018). Available at: <https://www.protectedplanet.net/country/IDN> Note: The boundaries and names shown and the designations used on the maps in this document do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.
- [22] <https://www.protectedplanet.net/317251>
- [23] <https://www.protectedplanet.net/8612>
- [24] <https://www.protectedplanet.net/8764>
- [25] [https://id.wikipedia.org/wiki/Cagar\\_Alam\\_Gunung\\_Sibela](https://id.wikipedia.org/wiki/Cagar_Alam_Gunung_Sibela) (retrieved February 2022)
- [26] <http://www.abschindonesia.menlhk.go.id> and <https://www.graccess.co.id/>
- See also <https://chm.cbd.int/database/record?documentID=248249>
- [27] <https://absch.cbd.int/en/database/NR/ABSCH-NR-ID-239223>
- [28] <https://www.oecd-ilibrary.org/sites/6c4fc1cd-en/index.html?itemId=/content/component/6c4fc1cd-en>
- [29] <https://www.ifad.org/en/web/operations/-/project/2000002562>
- [30] <https://www.ifad.org/en/web/operations/-/project/2000002234>
- [31] <https://www.cbd.int/doc/c/62d5/1c94/4b09ea1d7f3a582a552a3c71/np-cbiac-2019-01-02-add2-en.pdf>
- [32] FAO (2014). *Enabling Farmers to Face Climate Change. Second Cycle of the Benefit Sharing Fund Projects*. <https://www.fao.org/documents/card/en/c/c754de58-bfaa-48a3-aacb-0c32da7aa65b/>
- [33] <https://www.fao.org/3/i2624e/i2624e00.pdf> and <https://www.fao.org/publications/card/en/c/20217930-4d14-4e87-b144-8e0adb6828a7/>
- [34] <https://www.cbd.int/abs/doc/protocol/factsheets/policy/ABSFactSheets-Agriculture-web.pdf>
- [35] FAO (2015). Voluntary guidelines to support the integration of genetic diversity into national climate change adaptation planning. <https://www.fao.org/documents/card/fr/c/290cd085-/>
- FAO (2017). Voluntary guidelines for the conservation and sustainable use of crop wild relatives and wild food plants. <https://www.fao.org/documents/card/en/c/8f366de9-08a8-42ad-aae1-4f8f6822420e/>
- FAO (2019). Voluntary Guidelines for the Conservation and Sustainable Use of Farmers' Varieties/Landraces. <https://www.fao.org/documents/card/en/c/ca5601en/>
- [36] Free, Prior and Informed Consent (FPIC) and Indigenous Peoples' Plan (IPP).
- [37] <https://www.cbd.int/doc/c/62d5/1c94/4b09ea1d7f3a582a552a3c71/np-cbiac-2019-01-02-add2-en.pdf>
- [38] [https://www.cbd.int/abs/doc/scenarios-mutually\\_joint\\_2017-en.pdf](https://www.cbd.int/abs/doc/scenarios-mutually_joint_2017-en.pdf) and <https://www.fao.org/3/ca5088en/ca5088en.pdf>
- [39] Prior Informed Consent (PIC), Mutually Agreed Terms (MAT), Intellectual Property Rights (IPRs), Indigenous Peoples and Local Communities (IPLCs), Biocultural Community Protocols (BCPs), Free, Prior and Informed Consent (FPIC), Clearing-House Mechanism (CHM)



[40] Including those related to traditional knowledge, Masyarakat Adat, farmers and local communities.

[41]

[https://cgspace.cgiar.org/bitstream/handle/10568/68387/Mutually\\_Halewood\\_2015\\_new.pdf?sequence=2&isAllowed=y](https://cgspace.cgiar.org/bitstream/handle/10568/68387/Mutually_Halewood_2015_new.pdf?sequence=2&isAllowed=y)

[42] Source: Isabel Lopez Noriega (presentation, 2019). Why mutually supportive implementation of the ITPGRFA, the Convention on Biological Diversity and the Nagoya Protocol is necessary and important. [https://community.abs-sustainabledevelopment.net/wp-content/uploads/2019/04/3.C.-Mutually-supportive-CBD-Nagoya-and-ITPGRFA\\_Short\\_version.pdf](https://community.abs-sustainabledevelopment.net/wp-content/uploads/2019/04/3.C.-Mutually-supportive-CBD-Nagoya-and-ITPGRFA_Short_version.pdf)

[43] Halewood, M. (editor). 2015. Mutually supportive implementation of the Plant Treaty and the Nagoya Protocol ? A report on ?The International Treaty and the Nagoya Protocol ? A tandem workshop for National Focal Points?. Bioversity International.

[https://cgspace.cgiar.org/bitstream/handle/10568/68387/Mutually\\_Halewood\\_2015\\_new.pdf?sequence=2&isAllowed=y](https://cgspace.cgiar.org/bitstream/handle/10568/68387/Mutually_Halewood_2015_new.pdf?sequence=2&isAllowed=y)

[44] Bioversity International (2018). Mutually supportive implementation of the Nagoya Protocol and the Plant Treaty: Scenarios for consideration by national focal points and other interested stakeholders. [https://www.cbd.int/abs/doc/scenarios-mutually\\_joint\\_2017-en.pdf](https://www.cbd.int/abs/doc/scenarios-mutually_joint_2017-en.pdf)

[45] Note: The project intends to work on all five target crops in each target region. Although the baseline assessments concluded that in some regions (e.g., North Maluku) the cultivation of rice, yams and taro is not widespread, populations of wild species and CWR of these species may still be present and useful to monitor/evaluate.

[46] Threatened PGRFA may also be backed up in *ex situ* facilities (national gene banks) to better facilitate access and use of genetic resources and to safeguard these resources, following their characterization and evaluation. These *ex situ* activities would not be financed through GEF resources; however, the project and its executing agencies still need to ensure that any access and benefit sharing provisions are followed in such activities associated with the project, in line with national regulations and relevant international agreements.

[47] Such as the Indonesian Biodiversity Information System (InaBIF) maintained by the Indonesian Institute of Sciences (LIPI), the Plant Species Database, the Indonesia Biodiversity Index, and the Intellectual Property (IP) database being developed by the Ministry of Law and Human Rights (Kemenhukham). The new or adapted information system could also seek linkages with the recently developed Biodiversity Integrated Assessment and Computation Tool (B-INTACT). The tool, which quantifies the mean species abundance (MSA) in disturbed conditions relative to their abundance in undisturbed habitats could be a useful decision-making tool for the project to qualitatively assess the impact of management activities and agrobiodiversity practices on biodiversity sensitivity.

[48] Note: Internationally, youth is typically defined as age group between 15-24 years. The Youth Law of Indonesia (Law N° 40/2009) defines youth as 16-30 years old, while the statistical definition is 15-29 years old. The project will aim to collect age- (and sex-) disaggregated data where feasible. Please refer to *Section 5. Risks* for more details.

[49] This also applies to Components 3-4.

[50] Genetic reserve conservation may be defined as ?the location, designation, management and monitoring of genetic diversity in natural wild populations within defined areas designated for active, long-term conservation?. <https://www.fao.org/3/ak570e/ak570e.pdf>

[51] <http://www.cropwildrelatives.org/resources/in-situ-conservation-manual/>

<https://www.cbd.int/doc/case-studies/ttcc/InSituTraining.pdf>

<https://www.fao.org/documents/card/en/c/8f366de9-08a8-42ad-aae1-4f8f6822420e/>

<https://www.fao.org/documents/card/en/c/ca5601en/>

<https://www.bioversityinternational.org/e-library/publications/categories/training-materials/>

<https://cropgenebank.sgrp.cgiar.org/index.php/learning-space-mainmenu-454/manuals-and-handbooks-mainmenu-533/fieldbank-manual-mainmenu-493>

[52] The PACS approach has to-date been successfully applied in six countries, including to CWR in the South African Development Community (SADC). It currently forms a central component of a large GEF Agrobiodiversity project in Peru (GEF Project ID 9092), which is upscaling the approach across four regions (states).

[53] In alignment with FAO's Policy on Gender Equality 2020-2030. <https://www.fao.org/3/cb1583en/cb1583en.pdf>

[54] <http://www.fao.org/in-action/incentives-for-ecosystem-services/toolkit/sources-of-incentives/en/>

[55] Payments for Agrobiodiversity Conservation Services.

[56] See also <https://biocultural.iied.org/community-biocultural-protocols> and <https://www.fao.org/plant-treaty/areas-of-work/farmers-rights/inventory-on-frs/news-detail/en/c/810136/>

[57] Note: Compliance with the provisions regarding traditional knowledge will be ensured in line with Activity 2.1.1 and Annex J.

[58] A detailed list of tools and methodologies is provided as a separate document in *Supplementary material*

[59] <https://www.ifad.org/en/web/knowledge/-/how-to-do-note-promote-neglected-and-underutilized-species-for-domestic-markets>

[60] The five target crops of the project include rice, taro, yam, cloves, and nutmeg.

[61] Including custodian farmers, Masyarakat Adat, protected areas managers, breeders, extension services, and other land managers.

## 1b. Project Map and Coordinates

**Please provide geo-referenced information and map where the project interventions will take place.**

As mentioned in [section 2](#) of the Project description, project interventions will take place in the provinces of Central Kalimantan, Central Java and North Maluku. Maps and a detailed description of the sites are provided as Annex D and Appendices 1-3 as part of this submission.<sup>[1]</sup>

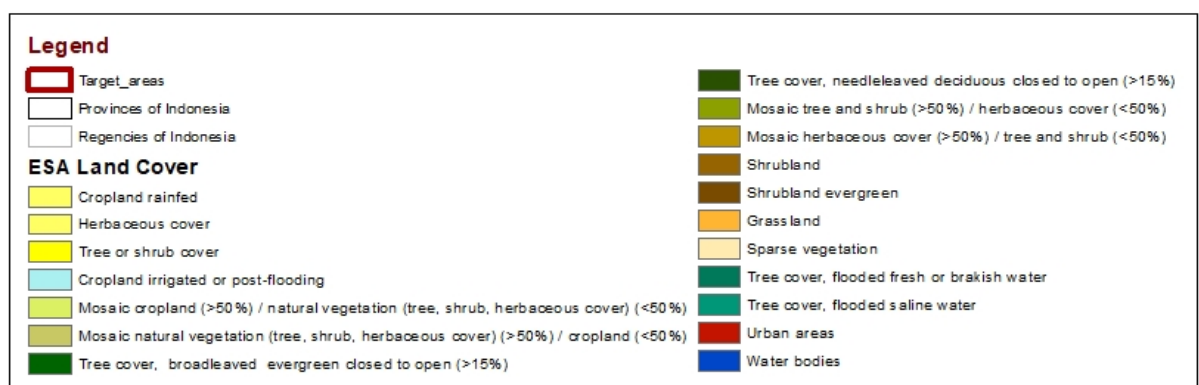
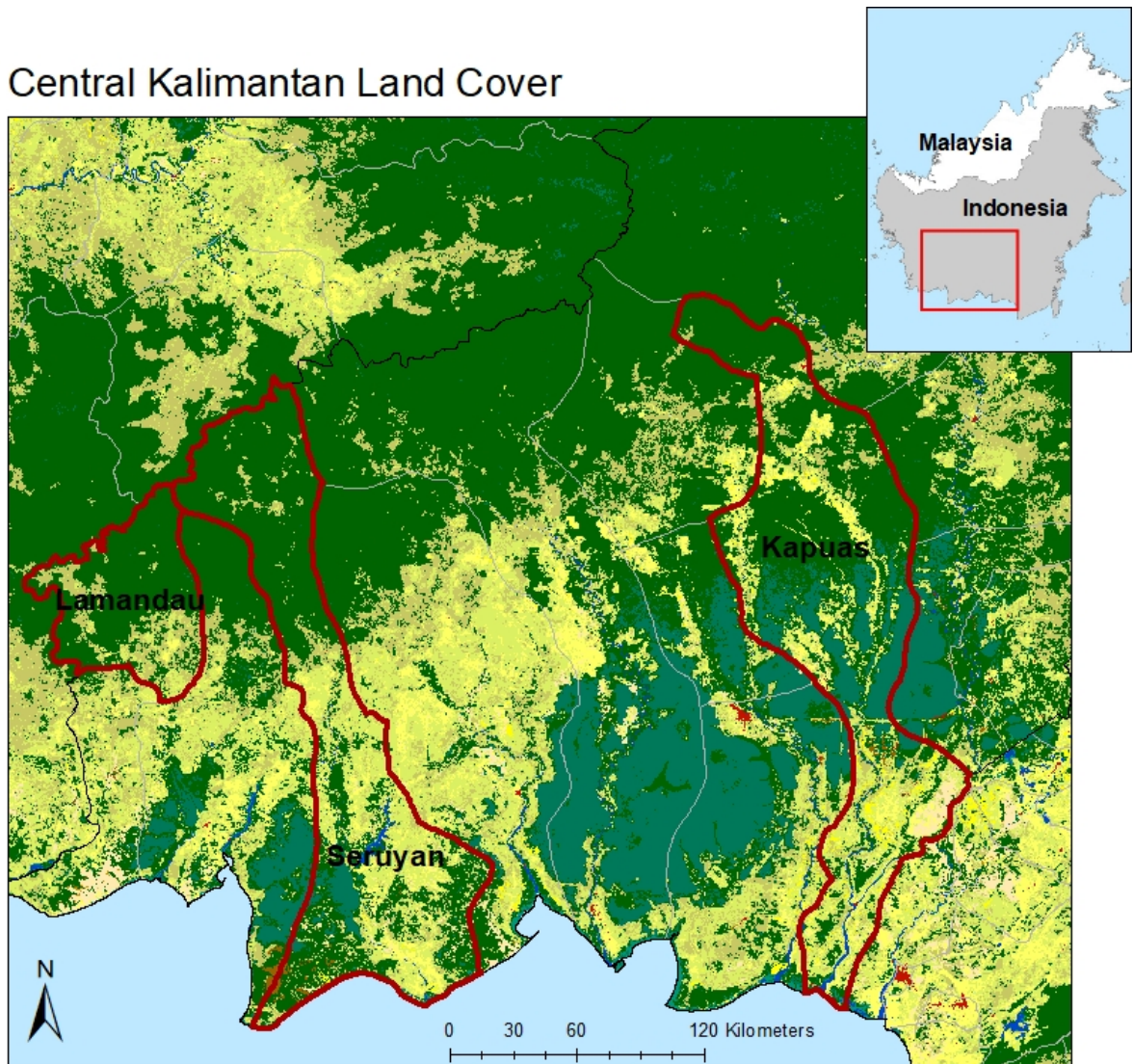
The geo-coordinates are provided below.

Province	District / Regency	Geo-coordinates	
Central Kalimantan	Kapuas	S 2° 58' 9.111"	E 114° 24' 39.924"
	Lamandau	S 2° 11' 4.919"	E 111° 25' 28.041"
	Seruyan	S 3° 24' 25.636"	E 112° 32' 41.586"
Central Java	Blora	S 6° 54' 33.006"	E 111° 26' 35.971"
	Klaten	S 7° 41' 20.13"	E 110° 37' 18.591"
	Magelang	S 7° 35' 31.908"	E 110° 13' 3.946"
North Maluku	Tidore Islands	N 0° 41' 14.948"	E 127° 24' 23.211"
	South Halmahera	N 0° 33' 3.902"	E 127° 30' 48.499"

[1] Note: The boundaries and names shown and the designations used on the maps in this document do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

**Figure 4.** Land cover in Central Kalimantan. The three target regencies Kapuas, Lamandau, and Seruyan are outlined in red. Data source: ESA Land Cover (2017)

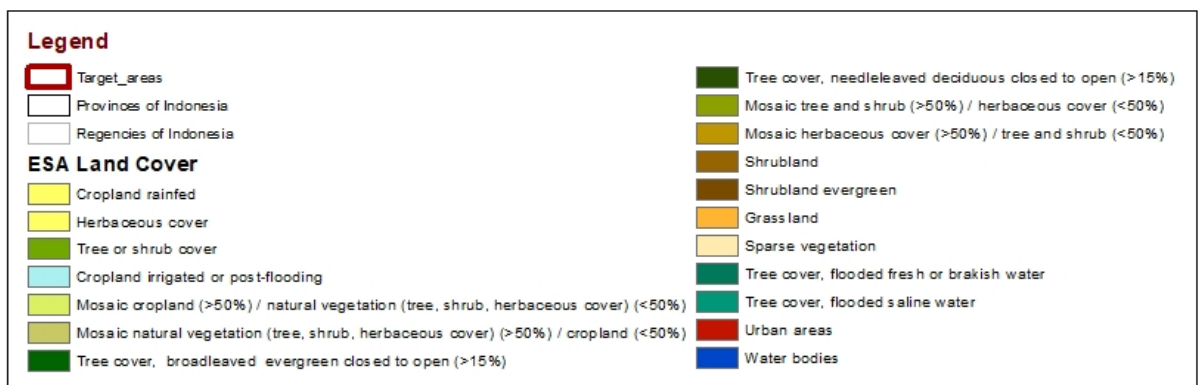
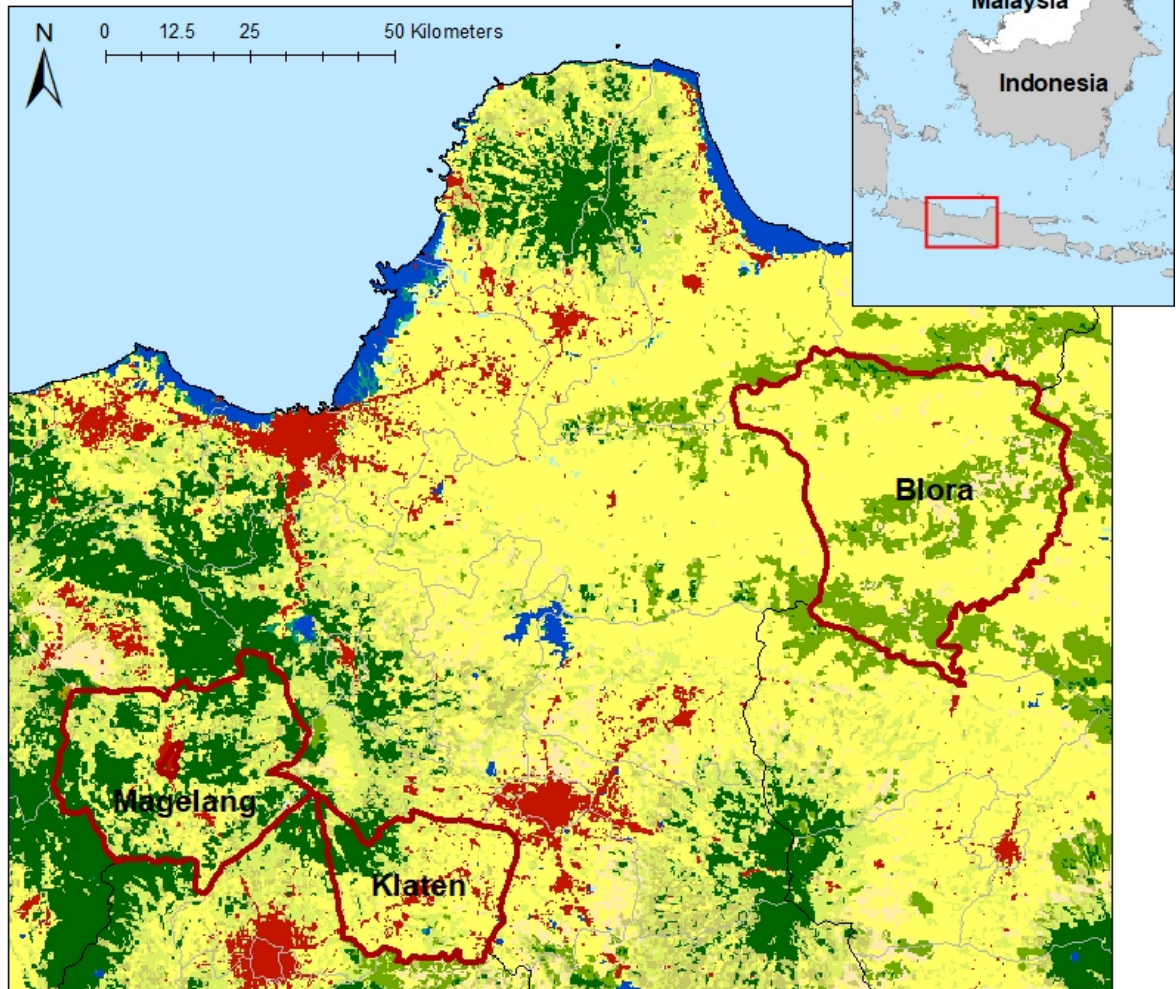
## Central Kalimantan Land Cover



**Figure 5.** Land cover in Central Java. The project's three target regencies of Blora, Klaten and Magelang are shown in red. Data source: ESA Land Cover (2017)

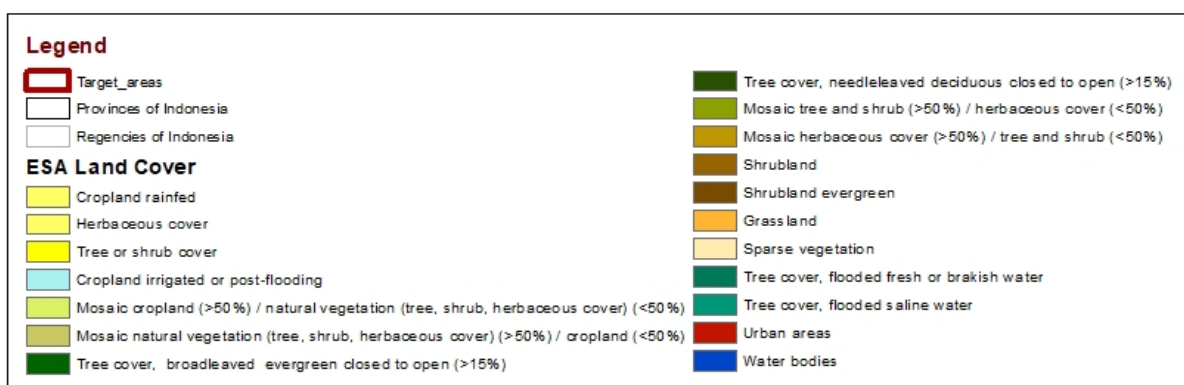
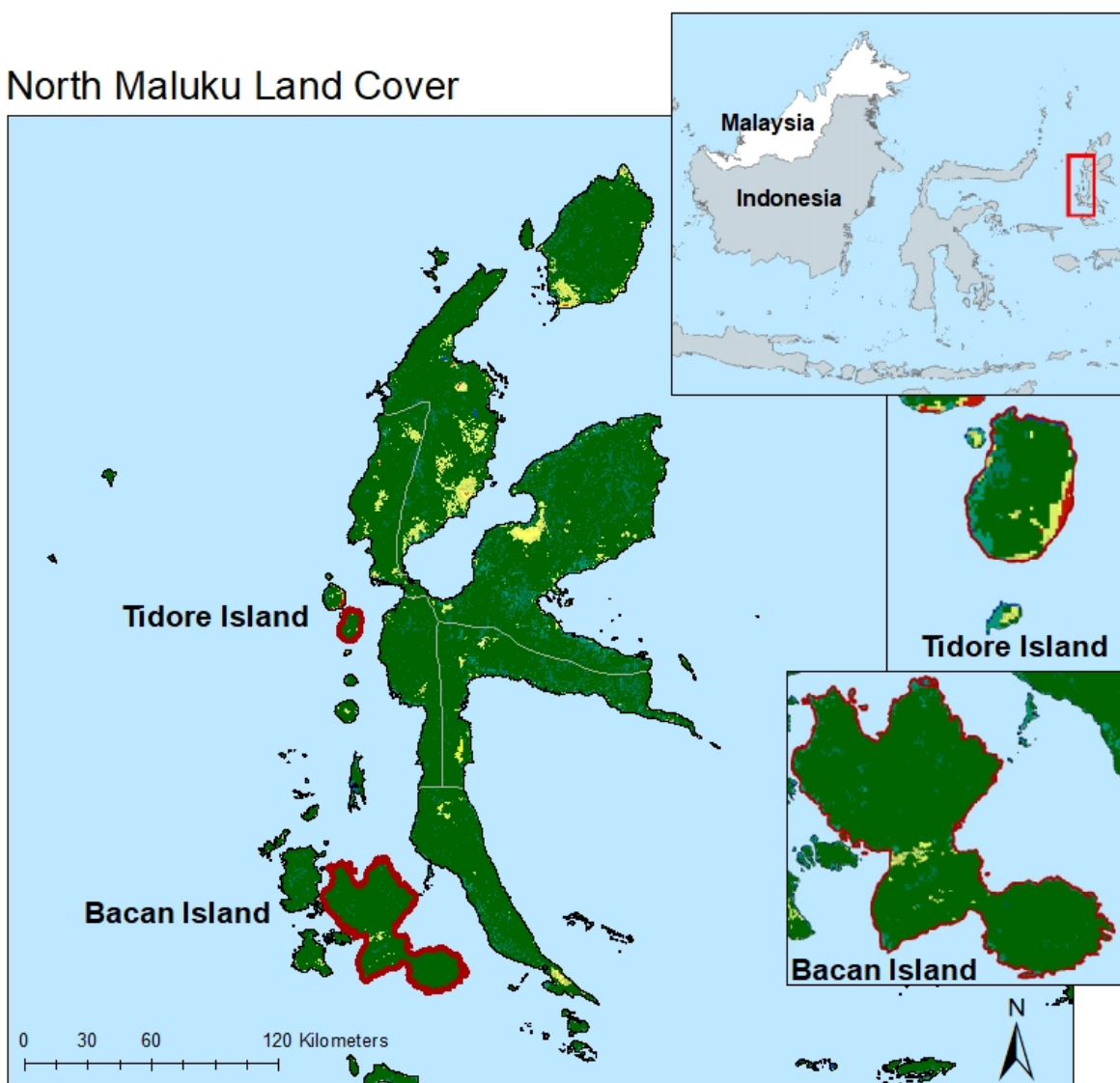


## Central Java Land Cover



**Figure 6.** Land cover in North Maluku. The project's target regencies of Tidore Islands and South Halmahera (Bacan Islands) are shown in red. Data source: ESA Land Cover (2017)

## North Maluku Land Cover



1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

n/a

2. Stakeholders

**Select the stakeholders that have participated in consultations during the project identification phase:**

**Civil Society Organizations** Yes

**Indigenous Peoples and Local Communities** Yes

**Private Sector Entities** Yes

**If none of the above, please explain why:**

**Please provide the Stakeholder Engagement Plan or equivalent assessment.**

A summary and analysis of the stakeholder engagement process undertaken during the PPG is provided in this section. A Stakeholder Engagement Matrix is included in Annex H2. More detailed stakeholder matrices for the target provinces are available upon request.

1. Consultations held during project identification and development

Detailed consultations were held during the project preparation phase with various stakeholders at the national, provincial and local levels, to collect relevant baseline information and seek inputs on the project design. Stakeholders included national and subnational government agencies, universities, Masyarakat Adat, local communities, civil society, and private sector. Due to the travel and meeting restrictions in place in Indonesia during the COVID-19 pandemic, part of the consultations was held virtually. Desk reviews, national and sub-national inception workshops, online expert surveys, key informant interviews, focus group discussions (FGD) and rapid field observations were used to collect data. Field visits to the project sites were organized and consultations held with local stakeholders (women and men). More detailed consultations with local communities, in particular Masyarakat Adat, are to be conducted during implementation (including FPIC), as explained in the detailed work plan in Annex G (see Activity 2.1.1, in particular).

The main consultations and points of discussion are summarized below.

Consultations held	Main points of discussion
1. Inception Workshops, Feb-Mar 2021	A national inception workshop was organized in February 2021. Subsequently, subnational inception workshops were held in the three target provinces in 2021, where the project concept was presented, and stakeholders provided feedback on the baseline initiatives and the proposed project design. The Theory of Change was also discussed.

2. Field Visits, Focus Group Discussions and Key Informant Interviews (Apr-May 2021)	<p>Field visits were conducted to the three target provinces. Detailed baseline reports were prepared and are available as separate Appendices 1-3. FGDs were held with mixed gender groups to collect information on key topics and themes depending on location. This included information on agroecosystems, target crops, their wild relatives, consumption, processing, marketing, traditional knowledge, bioprospecting, relevant institutions and policies in the respective sub-districts, as well as issues faced, programs and potential opportunities in each location. Field observations and interviews with key respondents (such as local experts, shop owners, key farmers, cultural leaders) were conducted to collect more in-depth information from a variety of stakeholders. Farmers also provided some information on traditional farming systems and the importance of passing on knowledge to the next generations. Village heads were also supportive, and some mentioned that they would like to motivate youth to remain in the village through the project.</p> <p>Stakeholders provided valuable inputs on the presence of the target species in the project sites, as well as associated knowledge. Stakeholders also expressed their interest in and support of the project. Gender aspects were also discussed.</p>
3. Additional consultations (Jun-Dec 2021)	Additional consultations were held with national, provincial and local stakeholders during the project formulation on specific aspects of project design, including the Theory of Change.
4. Validation workshop (Feb 2022)	A validation workshop with key national and provincial stakeholders was held in mid of February 2022 to get some additional inputs, clarify some data and information, finalize and validate the Project Document.

## 2. Core Partners and their engagement in the project

Following these consultations, a shortlist of core implementing partners was defined and their roles and responsibilities, as well as the methods for engagement during the Project implementation are outlined in the table below. These core partners (CPs) will also be responsible for building strong relationships and strengthening cross-sectoral/agency/ministry linkages to support the achievement of project aims.

Stakeholder name	Responsibility	Project role	Main methods of Engagement/ Consultation
<i>Government Ministries</i>			

Stakeholder name	Responsibility	Project role	Main methods of Engagement/ Consultation
<p><b>Ministry of Agriculture - MOA</b></p> <p>Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development ? ICABIOGRD (<i>BB Biogen</i>)</p> <p>Indonesian Agency for Agricultural Research and Development, Ministry of Agriculture (IAARD)</p>	<p>In collaboration with other MoA agencies and departments, <b>ICABIOGRD</b> will lead the implementation of most technical project Components in close coordination with MoEF.</p> <p>Under <b>Component 1</b>, in close coordination with MoEF, the Centre will be responsible for strengthening the enabling policy environment to promote the conservation and sustainable use of crop diversity by:</p> <ul style="list-style-type: none"> <li>? Establishing a cross-sectoral national working group to spearhead policy development and harmonized actions targeting the conservation and use of the target crops</li> <li>? Building the capacity of policymakers at national, provincial and local level to plan and implement policies in support of the target crops by hosting policy learning events and</li> <li>? Developing cross-sectoral strategies, action plans and guidelines for the conservation and sustainable use of crop diversity via policy write-shops</li> </ul> <p>Under <b>Component 2</b>, in close coordination with MoEF, ICABIOGRD will:</p> <ul style="list-style-type: none"> <li>? Create several genetic reserves for CWR and LR and develop management plans for the effective conservation of wild CWR populations</li> <li>? Undertake collections of target CWR based of existing gap analysis and ensure their conservation in the national genebank.</li> </ul> <p>Regarding the target crops, ICABIOGRD will:</p> <ul style="list-style-type: none"> <li>? Carry out a baseline survey of the diversity of LR and CWR in project sites.</li> </ul> <p>Additional tasks under this component include:</p> <ul style="list-style-type: none"> <li>? Ensure implementation of FPIC and ABS in line with Annex J.</li> <li>? Prepare best practice manuals and training material on <i>in situ</i>/on farm conservation</li> <li>? Provide technical support to site coordinators in implementing conservation actions</li> <li>? Develop monitoring mechanisms for extension services to assess the implementation of promoted good practices</li> <li>? Identify CWR/LRs of target crops with value chain development potential</li> <li>? Identify CWR/LRs of target crops</li> </ul>	<p>Lead Executing Agency</p>	<p>The MoA will establish and host the Project Management Unit (PMU), which will be key in supporting all project components and coordinating all MoA agencies and other project stakeholders.</p> <p>The PMU will be responsible for organizing and holding bi-annual meetings to oversee project implementation.</p>



Stakeholder name	Responsibility	Project role	Main methods of Engagement/ Consultation
Management and Leadership Training Centre for Agriculture ( <i>Pusat Pelatihan Manajemen dan Kepemimpinan Pertanian</i> ? PPMKP)	<b>PPMKP</b> will support ICABIOGRD in implementing the action plan and trainings to build capacity and awareness of policy options for conservation and sustainable use of the target crops	Implementing partner <b>Component 1</b> (Activity 1.3.2)	Representatives of these MoA agencies will take part in ongoing project consultations, project steering committee meetings, workshops and seminars.  They will provide guidance, advice and suggestions, where relevant and from the perspective of their mandate, for project management and implementation as well as relevant institutional and governance issues.  Where appropriate, they will participate in policy, capacity-building and awareness raising related campaigns for mainstreaming the conservation and sustainable use of the target crops.  Representatives of these Ministries will also contribute to the development of policy recommendations and guidelines for the conservation and
Indonesian Center for Food Crops Research and Development ? ICFORD ( <i>Puslitbangtan</i> )	<b>ICFORD</b> will support the project by carrying out the preliminary characterization of collected CWR and LRs to facilitate their conservation and use	Implementing partner <b>Component 2</b> (Activity 2.1.5)	
Directorate General of Agricultural Infrastructure and Facilities (DG AIF)	<b>DG AIF</b> will establish community nurseries/participatory plant breeding in each of the target provinces to conserve local crop diversity and facilitate access to seed	Implementing partner <b>Component 2</b> (Activity 2.1.6)	
Indonesian Center for Agricultural Technology Assessment and Development ? ICATAD ( <i>Balai Besar Pengkajian dan Pengembangan Teknologi Pertanian - BBP2TP</i> )	Under <b>Component 2, ICATAD</b> will support ICABIOGRD to carry out a capacity needs assessment to implement <i>in situ</i> conservation of CWR and LRs, as well as develop training materials and train extension officers to enhance the capacity of community stakeholders to produce and market the target crops	Implementing partner <b>Component 2</b> (Activities 2.2.1; 2.2.3)	
	Under <b>Component 3, ICATAD</b> will work with ICABIOGRD to assess the barriers limiting the production and use of target species. Specifically, it will: ? Identify and assess market niches and opportunities for the target crops ? Develop marketing and promotion strategies ? Develop and disseminate information material for implementing best practices	<b>Component 3</b> (Activities 3.1.1; 3.1.4; 3.4.2)	
Indonesian Center for Estate Crops Research and Development ? ICECRD ( <i>Pusat Penelitian dan Pengembangan Perkebunan</i> ? PUSLITBANGBUN)	<b>ICECRD</b> will support ICABIOGRD in identifying context-specific and culturally appropriate good practices and workable incentive mechanisms for conservation and sustainable use of the target species	Implementing partner <b>Component 2</b> (Activity 2.3.1)	

Stakeholder name	Responsibility	Project role	Main methods of Engagement/ Consultation
Bureau of Public Relations and Public Information	The <b>Bureau</b> will support ICABIOGRD by documenting and disseminating good practices and results from the incentive schemes by convening national and local meetings to support the scaling out of fair and equitable sharing of benefits from the conservation and use of the target crops	Implementing partner <b>Component 2</b> (Activity 2.3.4)	sustainable use of the target crops and the development of alternative livelihood strategies the selected location.
Indonesian Centre for Agricultural Postharvest Research and Development ? ICAPRD ( <i>Balai Besar Penelitian dan Pengembangan Pascapanen Pertanian</i> - BB-Pascapanen)	<b>ICAPRD</b> will work closely with ICABIOGRD and ICATAD to identify key actors and steps for formulating a vision and upgrading strategy for market development  Under <b>Component 4</b> , ICAPRD will support the project by preparing tailored guidelines for the improved use of the target species (e.g., processing, packaging etc.)	Implementing partner <b>Component 3</b> (Activity 3.1.2)  <b>Component 4</b> (Activity 4.2.1)	
Agriculture Human Resources Extension and Development Agency or AEHRD ( <i>Badan Penyuluhan Dan Pengembangan Sumber Daya Manusia Pertanian</i> - BPPSDMP)	<b>BPPSDMP</b> in collaboration with the <b>Directorate General of Food Crops</b> and the <b>Directorate General of Plantations</b> will support the project by establishing the capacity of producers, processors, consumers, and researchers to use and benefit from the target crops. Activities will include:  ? Assessing capacity and training needs ? Develop gender-tailored capacity building plan ? Undertake trainings	Implementing partners <b>Component 3</b> (Activity 3.3.1; 3.3.2; 3.3.3; 3.3.4)	
Directorate General of Food Crops ( <i>Direktorat Jenderal Tanaman Pangan</i> )			
Directorate General of Plantations ( <i>Directorate Jendral Perkebunan</i> )			
Other Ministries and Government Agencies			

Stakeholder name	Responsibility	Project role	Main methods of Engagement/ Consultation
<b>Ministry of Environment and Forestry (MoEF)</b> DG of Natural Resources and Ecosystem Conservation <i>(Kementerian Lingkungan Hidup dan Kehutanan - KLHK, Ditjen KSDAE- KKHSG)</i>	<p>The MoEF, and specifically the Directorate General of Natural Resources and Ecosystem Conservation, in close coordination with ICABIOGRD, will co-lead activities linked to policy review and harmonization of procedures related to the Nagoya Protocol (Output 1.5) and the cross-sectoral policy platform (<b>Component 1</b>), and assessing the diversity and conservation status of target crops and wild relatives, establishing genetic reserves, as well as setting up an information system to monitor changes in the distribution of priority species (<b>Component 2</b>). In particular, MoEF will be responsible for implementation of Output 1.5 on ABS and will be closely involved in aspects related to biodiversity mainstreaming.</p> <p>Under Component 2, additional responsibilities include: establishing a multi-stakeholder, multi-sectoral network involving relevant institutions and stakeholders</p>	<p><b>Project Steering Committee member</b>            Implementing partner  <b>Components 1 and 2</b>            (Activities under Outputs 1.1-1.5, Activities 2.1.1 and 2.1.2.)</p> <p>(Activity 2.4.1)</p>	<p>Representatives of these Government Ministries will take part in ongoing project consultations, project steering committee meetings, workshops and seminars.</p> <p>They will provide guidance, advice and suggestions, where relevant and from the perspective of their mandate, for project management and implementation as well as relevant institutional and governance issues.</p>
<b>Ministry of Women Empowerment and Child Protection (MoWECP)</b>	<p>The MoWECP will support the project in ensuring gender equality and ensure women and other vulnerable groups can access and benefit from community-level incentives and public procurement programs</p>	<p>Implementing partners  <b>Component 3</b>            (Activity 3.2.2)</p>	<p>Where appropriate, they will participate in policy, capacity-building and awareness raising related</p>

Stakeholder name	Responsibility	Project role	Main methods of Engagement/ Consultation
<b>National Development Planning Agency (BAPPENAS)</b>	As the Ministry tasked with overseeing national development planning, BAPPENAS will lead the activities linked with developing a costed national strategy and action plan for the conservation and sustainable use of crop diversity, including provisions for easements and incentive-mechanisms	<b>Project Steering Committee member</b>  Implementing partner for <b>Component 1</b> (Output 1.4)	campaigns for mainstreaming the conservation and sustainable use of the target crops.  Representatives of these Ministries will also contribute to the development of policy recommendations and guidelines for the conservation and sustainable use of the target crops and the development of alternative livelihood strategies the selected location.
<b>Local Government</b>	Local Government agencies in the three target provinces will support the project's Component 2, by testing and evaluating identified good practices and incentive mechanisms in pilot communities in the target areas	Implementing partner for <b>Component 2</b> (Activity 2.3.2)	Local Government representatives from the 3 target provinces will take part in ongoing project consultations, project steering committee meetings, workshops and seminars.  They will provide guidance, advice and suggestions, where relevant and from the perspective of their mandate, for project management and implementation as well as relevant institutional and governance issues.

Stakeholder name	Responsibility	Project role	Main methods of Engagement/ Consultation
<b>National Commission on Genetic Resources ? NCGR (KOMNAS SDG)</b>	The NCGR will support the multistakeholder committee established under 2.4.1 to develop a National Strategy and Action Plan for the conservation of priority Indonesia CWR.	Implementing partner <b>Components 1 and 2</b> (Outputs 1.4, 1.5, 2.1, 2.4)	Representatives of KOMNAS SDG will take part in ongoing project consultations, technical working group meetings, workshops and seminars.
<i>National Universities</i>			
<b>Gadjah Mada University (UGM) and Sebelas Maret University (UNS)</b>	UGM and UNS will support the project by identifying and testing market and non-market incentives at community level; as well as supporting activities under Component 2.	Implementing partner <b>Component 2 and 3</b> (Activities 2.1.1, 2.1.2, 3.2.1)	Representatives of universities and research institutions support the project by providing scientific and technical backstopping as well as collaboration in research and in the development of suitable methods and approaches for testing market and non-market incentives. They will also participate in project via: consultations, seminars, conferences and workshops; collaborate in the development of public awareness materials and up-scaling of project outputs through peer-reviewed scientific publications; contribute to the identification of major knowledge gaps and upscaling of lessons and best practices.
<i>Non-governmental organizations (NGOs)</i>			

Stakeholder name	Responsibility	Project role	Main methods of Engagement/ Consultation
<p><b>Duta Blora (Central Java)</b></p> <p><b>Burung Indonesia (North Maluku)</b></p>	<p>This NGO works with Samin communities in Central Java to conserve local paddy varieties.</p> <p>The NGO works with local communities in Central Java to prevent deforestation</p>	<p>The two NGOs could be potential implementing partner for activities under Component 2, 3 and 4 linked to community mobilization and engagement</p>	<p>Representatives of relevant NGOs will take part in ongoing project consultations, workshops and seminars and relevant field activities.</p> <p>NGOs will assist the project to work with farmers and communities, to facilitate consultation and collaboration with communities across project sites and assist in mobilizing participatory action research.</p> <p>They will assist the project to disseminate outreach materials at the grassroots level.</p> <p>Key NGOs will also provide support on farm field trials, organization of field days, diversity fairs, farmers' exchange visits and mobilization of relevant traditional knowledge.</p>
<i>Local Communities and community-based organization</i>			

Stakeholder name	Responsibility	Project role	Main methods of Engagement/ Consultation
<p><b>Farmer groups</b>  <b>BUMDES (Central Java)</b> - this village-owned enterprise undertakes processing and marketing of local rice varieties</p> <p><b>Women groups</b>  <b>PKK Movement</b> across the 3 target provinces</p> <p><b>Youth groups</b>  <b>Millennial farmers (Central Java)</b> engaged in the farming, processing and marketing of local rice varieties</p> <p>KOMPAS millennial community association (North Maluku) work with Burung Indonesia to raise awareness of forest conservation; build farmer capacity to increase household incomes, e.g., working with women farmers to plant spices (turmeric, ginger) near forest areas</p>	<p>The PPG identified several national women's movements, communities and custodian farmers that actively conserve and maintain the diversity of target crops despite the barriers limiting their uptake in production and consumption patterns.</p>	<p>Partners across Components 2, 3 and 4</p>	<p>Local communities including farmers organizations, women and youth groups will play a key role in project implementation. They will be consulted on the implementation, management and monitoring of project activities.</p> <p>They will play an active role during the baseline assessments and will be consulted widely on the identification of value chains and the development of alternative livelihood strategies using the target crops.</p> <p>They will be involved in participatory appraisals and community-based activities to map biodiversity and sustainable practices and will be involved in activities pertaining to conservation and sustainable management and use of the target crops.</p> <p>They will have access to project benefits including extensive training and capacity building and other benefits arising through the project.</p> <p>Local communities will participate in the documentation of information and the maintenance and use of traditional</p>

Stakeholder name	Responsibility	Project role	Main methods of Engagement/ Consultation
<b>Masyarakat Adat AMAN</b>  <b>Masyarakat Adat local organizations</b>  <b>Traditional Masyarakat Authorities</b>	<p>The project will include Masyarakat Adat Representatives in the Project Steering Committee (PSC).</p> <p>AMAN, as the largest Masyarakat Adat organization in the country will be part of the Steering committee (to be confirmed based on consultations during inception phase) and involved in the FPIC processes and <i>Masyarakat Adat</i> Plans.</p> <p>In addition, the Masyarakat Adat authorities and representatives will be included in the three project areas along with local Masyarakat Adat Organizations.</p>	<p>Partners in the 3 project areas.</p> <p>Members of the Project Steering Committee</p>	<p>FPIC processes in each of the communities and <i>Masyarakat Adat</i> Plans in each of the project areas</p>
<i>Private Sector</i>			
<p><b>PT Maxindo</b> is a snack-manufacturing company that specializes in producing crackers and snacks made from cassava and yam, taro and sweet potato. PT Maxindo has worked closely with ICABIOGRD to identify superior varieties of these root and tuber crops to improve production.</p> <p><b>PT Sido Muncul</b> is a herbal medicine and food products company interested in sourcing high quality ingredients for its herbal preparations.</p>	<p>The two companies could play a role in value chain development, knowledge management and investment mobilization.</p> <p>At the grassroots level, the baseline assessment identified several micro-enterprises and small-scale businesses the project could engage with.</p>	<p>Partners for <b>Component 3</b></p>	<p>Representatives of Private Sector Organizations will take part in ongoing project consultations, workshops and seminars and relevant field activities. They will provide guidance to the project on facilitating local community access to financial assistance and credit as well as the identification of potential markets for niche products arising from the project landscapes.</p>

Budget has been allocated for the organization of regular meetings with project stakeholders to foster meaningful collaboration and monitor project progress. An inception meeting will be organized at project onset during which Core Partners (CPs) will be guided through the project background, results framework and workplan and appreciate how they are expected to engage throughout the project/program cycle. CPs will be asked to:

- ? Validate the project description summary, workplan and results framework;
- ? Identify key focal points for respective stakeholder organizations; and
- ? Identify currently missing strategic national partner/stakeholder organizations.

#### *Core partners*

To support the work of the cross-sectoral platform established under Output 1.1, the project will create an online communications platform (Output 4.1) that allows members to share, review, and



provide inputs to the project, increasing efficiency and avoiding the duplication of efforts. The platform will also represent a mechanism for outreach and dissemination of project objectives and results at a regional and global scale.

CPs will use periodic (annual or bi-annual) meetings as opportunities to consult including with additional key agencies and complementary stakeholders on the project's approach and priority activities; and to promote project outcomes. Regular M&E field visits will be undertaken and smaller consultative gatherings will be organized in the lead up to the annual meetings, to gather updates and feedback to inform the planning process and improve ongoing activities and engagement. In case COVID-19 restrictions continue, virtual formats will be used where possible. Progress reports will be regularly shared with stakeholders.

In addition to the CPs, the Platform will work with national partners to strengthen the knowledge base of local, traditional and community-based organizations that are partners and key actors in the conservation and sustainable management of the target crops, and the resulting food, income and job opportunities. Feedback from local level stakeholders will be incorporated into the revision of annual work plans to strengthen the planned activities, making them more targeted and responsive to the needs of the producers and value chain actors.

#### *External engagement*

Working closely with the *Bureau of Public Relations and Public Information*, the Project will develop awareness raising and training materials to increase appreciation among key stakeholders, institutions, local organizations and communities of the rationale for conserving the target crops, and the multiple benefits for continued use in project areas. The project will create workshop and training spaces for different interest groups to come together in a multi-stakeholder forum to explore capacity needs. Furthermore, less powerful and marginalized actors (farmers, women, youth and unorganized groups) will be specifically targeted and empowered to participate in awareness raising and training. Ensuring the participation of these actors in the process is critical if the Project is to be effective. In addition to creating awareness, strategic capacity building and training of key stakeholders will also ensure stakeholders understand the need for, and adopt, an integrated perspective, looking beyond the agricultural or other sectoral boundaries, taking into account cross-sectoral concerns and working in multi-disciplinary teams. Such training will focus on the development of new institutional arrangements, including multi-stakeholder platforms and networks.

#### **Masyarakat Adat**

The project is considered a 'High Incidence/relevance' project from the side of Indigenous Peoples. Therefore, the project will recruit an Masyarakat Adat Expert that within the PMU, in coordination with the FAO Regional Office for Asia and the Pacific (RAP) focal person for Indigenous Peoples and with the FAO Unit on Indigenous Peoples (PSUI), will ensure that Masyarakat Adat rights are respected.

In particular, the Masyarakat Adat Expert will ensure the inclusion of Masyarakat Adat in the project activities through the following:

1. Identification with key Masyarakat Adat Organizations of leaders to have them included in the Project Steering Committee
2. The technical soundness and rigour of the FPIC process at community level in the three project areas
3. The technical soundness and process validation of the drafting of the three *Masyarakat Adat* Plans, one for each project area.

Please refer to Annex J for more details regarding the engagement of Masyarakat Adat during project implementation. Besides engaging local communities and Masyarakat Adat identified in the project sites, the Alliance of Indigenous Peoples of the Archipelago (AMAN) will also be engaged as an important stakeholder. The National and Regional Commissions on Genetic Resources

(KOMNAS SDG) and the Ministry of Social Affairs will also be consulted and engaged in the implementation of the mitigation measures outlined in Annex J.

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

Stakeholders will be consulted throughout project implementation as outlined in the above table, in the Stakeholder Engagement Matrix in Annex H2 (Excel file), and in line with the timeline outlined in Annex G (work plan) of the Project Document.

The project will also use strategic communication to address gaps in awareness related to the target crops. Under Output 3.4, the project will develop and implement a communication strategy to disseminate project results on value of these crops. Capacity and awareness building on the conservation and sustainable use of the target crops is included in Output 1.3. The capacity development programmes and incentive mechanisms implemented by the project will support knowledge, skills and behavioural changes to help achieve the project's goals.

#### *Budget and responsibilities*

The Project Management Unit (PMU) will be responsible for implementing the stakeholder engagement as outlined in the Stakeholder Engagement Plan. It will also be responsible for monitoring and reporting on stakeholder engagement through annual project reports. Relevant tasks have been incorporated into the Terms of Reference of the project staff (Annex K). Budget for stakeholder engagement has been allocated through the meeting, training and travel budget lines as shown in Annex A2 (budget).

In the annual project reports, the project implementation team will report on the following indicators:

- 1) Number and diversity of stakeholders ? government agencies, civil society organizations, private sector, vulnerable groups, women and other stakeholder groups that have been involved in the project implementation phase and their level of engagement/participation.
- 2) Number of engagements (such as meetings, workshops, official communications) with stakeholders during the project implementation phase.
- 3) Number of grievances received and responded to/resolved (see Grievance Redress Mechanism described in the section below).

**Select what role civil society will play in the project:**

**Consulted only;**

**Member of Advisory Body; Contractor;**

**Co-financier;**

**Member of project steering committee or equivalent decision-making body;**

**Executor or co-executor; Yes**

**Other (Please explain) Yes**

Project partner for local implementation.

### 3. Gender Equality and Women's Empowerment

#### **Provide the gender analysis or equivalent socio-economic assesment.**

A gender analysis was undertaken during PPG in alignment with FAO's Policy on Gender Equality 2020-2030<sup>[1]</sup>, building on literature review, stakeholder surveys, interviews and observations during field assessment visits, and is provided in this section. A stand-alone Gender Action Plan is provided in a separate document as part of this submission (Annex H3).

#### *Gender Analysis*

As custodians of many local crops and varieties, women are a key target and beneficiary group for the Project. For example, in Central Java women are typically in charge of growing taro and yams and use these crops for processing and preparing food products such as chips and cakes. In Maluku, women are skilled in identifying cultivars of nutmeg and cloves and are closely involved in the selection of cultivars for planting. Women have relatively equal access to productive resources such as land and inputs (Akter *et al.* 2017) and are typically in charge of daily spending and food consumption choices in their households. This gives them the potential to act as catalysts for improved food and nutrition security and economic prosperity in their communities, through production, marketing and consumption of a wider variety of local and indigenous, nutritious foods. Indonesian women are also entrepreneurial and actively involved in operating micro-enterprises and home-run businesses, often related to food processing and preparation.

FAO's country gender assessment of agriculture and the rural sector in Indonesia (2019)<sup>[2]</sup> highlighted the important role women play in agriculture and natural resources management in the country. The report notes that in terms of the gender relations in protection of biodiversity, it is assumed that while men tend to be more concerned over soil and land conservation, women tend to be more concerned over biodiversity conservation, especially in relation to plants. Furthermore, the report noted that women of Indonesia have traditionally been bearers and keepers of seeds that support the food security of their communities. In this sense, their overall contribution to plant biodiversity is significant. Additionally, they are holders of knowledge of traditional skills connected to their livelihoods. Finally, the report highlighted that women play a primary role in intercropping activities such as planting long beans, yams, taro and some other vegetable crops. These foods are used for the daily needs of the family. Rural women are also responsible for maintaining their home yards, planting vegetables for family consumption and/or sale.

The role of indigenous women as seed keepers and knowledge on seeds have been highlighted by several studies. For example, in Kalimantan, women's key role in local food systems as seed keepers and preserve many varieties of rice, sorghum, corn, millet but also tubers and vegetables has been reported.<sup>[3]</sup> The important role women play in maintaining home gardens/ agroforests that includes cloves and nutmeg has also been reported from Indonesia ? such as in Sulawesi.<sup>[4]</sup> Here, women have been reported to play more role in tree crop selection than men.

The analysis conducted during PPG showed that despite the relatively equal access to resources and a supportive policy framework, several barriers remain that hinder women's opportunities to generate income from agricultural products. This prevents them from contributing to agrobiodiversity conservation through use and from improving diet diversity and quality in their families.

In Tidore Islands, women are not usually involved in the planting of nutmeg trees. However, they are involved in household decision-making regarding cultivars to be planted and in harvesting of fruits. The consultations during PPG in the three target provinces also revealed that women farmer groups and women's associations are key stakeholders in the cultivation, processing and use of the target crops use, but that their capacity is often limited. Small-scale home industries and women

associations are common and could benefit from and grow through enhanced capacity and technical support.

The main gaps and barriers identified with regard to gender equality and women's empowerment in the target sites are summarized below.

#### ***Insufficient policy implementation and capacities for gender mainstreaming***

Indonesia has made impressive progress in developing the policy framework for gender equality. All ministries and relevant agencies are required to mainstream gender aspects in planning and budgeting processes. The government has also developed various national strategies, policies and regulations to enhance women's participation in the agricultural sector, which are supported with budget allocation for women's empowerment. Despite the many existing regulations and guidelines for mainstreaming, capacities for designing and implementing, gender-responsive activities remain limited at government institutions, especially at local levels. For example, there is little knowledge and awareness of measures such as collection of sex-disaggregated data and gender analysis at Regency level.<sup>34</sup> The lack of capacities for gender analysis, at programme implementation becomes mechanistic and fails to account for local nuances and differences in needs and preferences based on gender and its intersections with age, ethnicity, social class and other variants (Azarbaijani-Moghaddam, 2014). Effective implementation of existing policies requires strengthening of the capacities of local government units. Similarly, budgeting processes at regency level need to be made gender-responsive and related spending needs to be regularly monitored to help close the gender gap. Good practices in gender mainstreaming need to be documented to support learning.<sup>34</sup> Across sectors, programmes and strategies for access and benefit sharing, climate change adaptation, entrepreneurship, food security and nutrition, and public procurement of agricultural products all offer opportunities to improve women's participation in programme design and implementation and, therefore, the benefits they and their families can derive.

#### ***Limited social organisation and access to extension services***

Stereotypes and traditional views of women's roles constrain their opportunities to participate in social and economic activities and access services such as extension (Pratiwi et al. 2017). Men typically dominate farming decisions such as selection of crops and planting schedules, purchasing inputs and marketing agricultural products (Hutajulu, 2015). Although women are heavily involved in strenuous agricultural work, they are often seen as merely helping their husbands or male family members instead of being farmers in their own right.<sup>34</sup>

A key constraint that prevents women farmers in Indonesia from improving their farming practices and farm productivity is their persistent lack of access to extension services. Most government extension officers are men (Qamar, 2012), and for religious reasons it is difficult for female farmers to interact with them. While women are interested to participate in agricultural trainings, often only men are invited to training events and related village meetings (Akter, 2017).<sup>34</sup> Similar gaps exist in terms of access to private and digital sector extension services (ADB and UN Women, 2018; Fathan, 2015). Access to trainings is also partly constrained by women's limited participation in agricultural groups to which trainings and support can be targeted. Farmer groups are typically all male-only, and mixed gender groups are rare, although women-only groups exist in some of the Project's target districts/regencies. Social organisation is important also because groups typically have a key role in decision-making in the community (Akter et al. 2017; Azarbaijani-Moghaddam, 2014). Local institutions for forest and natural resources management are also dominated by men and women's participation in decision-making is minimal.<sup>34</sup>

#### ***Limited access to skills training and financial services to support entrepreneurship***

Lack of access to entrepreneurship and management training and skills development limits the economic viability and growth potential of women's enterprises. For example, women's lack of access to extension has been associated with poor quality of vegetables that don't meet market requirements, lack of sorting and grading activities and lack of farm-level record-keeping to help monitor and assess expenses and profits (Yuliati and Isaskar, 2016). Because rural women are less

literate and less fluent in the national language than men, they are less likely to be able to process and make use of information about markets and financial services, unless the information is provided in forms that are tailored to their needs.

Women lack access to credit for establishing or expanding their businesses and information on how to apply it. They also report feeling discriminated when seeking credit, dealing with bureaucrats, or negotiating with customers. The enterprises that women operate tend to be small-scale, low-technology and labour intensive, and these are typically of low interest and priority for financial institutions (Babbitt et al. 2015).<sup>34</sup> There is need to improve women's and men's access to financial services through promoting credit facilities, for example through village-owned cooperatives or financial services.<sup>34</sup>

Religious reasons may constrain women's mobility outside of their home and communication between the sexes, affecting opportunities for developing businesses and customer base (Akter et al. 2017). Women are also concerned about being able to manage their business alongside family responsibilities, and typically prefer running businesses that can be operated from home (Babbitt et al. 2015). Availability of women's time and their control of it, as well as their domestic duties such as childcare are important considerations for enabling them to develop economic activities and benefit from development interventions (Azarbaijani-Moghaddam, 2014).

Gender balance will be ensured within Project activities including workshops and meetings, access to and participation in capacity building activities, prioritisation activities, policy development, field surveys, awareness raising and other events. The Project will take account of gender differentiation by encouraging equal representation of women and men at key events. In addition, diverse partner organizations, like national agricultural research institutes and non-governmental organizations (NGOs), as well as local Masyarakat Adat and their organizations, which have a proven gender agenda, will be critical to the network being established as part of this project. Local women farmers will be targeted in field activities and specific attention will be given to understanding potential impact on women farmers. The issue of gender will also be explicitly cited in the communication plan to highlight the importance of gender equality. In this respect, specific policy briefs on conservation of target crops and CWR and the roles of men and women will be articulated in a participatory manner by men and women stakeholders. Moreover, the project will engage with both men and women farmers in promoting the conservation and use of target crops and CWR. Finally, gender will be a key issue to be discussed in the establishment and governance of the platform on access and benefit sharing of *in situ* genetic resources. Please refer to the separate Gender Action Plan in Annex H3 for details.

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<sup>[1]</sup> <https://www.fao.org/3/cb1583en/cb1583en.pdf>

<sup>[2]</sup> FAO. 2019. Country Gender Assessment of Agriculture and the Rural Sector in Indonesia. Jakarta.

<http://www.fao.org/3/ca6110en/ca6110en.pdf>

<sup>[3]</sup> <https://wwf.panda.org/?339311/Women-as-Biodiversity-Stewards-in-HoB>

<sup>[4]</sup> Women's participation in agroforestry: more benefit or burden? A gendered analysis of Gorontalo Province.

<https://www.worldagroforestry.org/sites/default/files/Publications/PDFS/WP16036.pdf>

**Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?**

Yes

**Closing gender gaps in access to and control over natural resources; Yes**

**Improving women's participation and decision making** Yes

**Generating socio-economic benefits or services or women** Yes

**Does the project's results framework or logical framework include gender-sensitive indicators?**

Yes

#### **4. Private sector engagement**

**Elaborate on the private sector's engagement in the project, if any.**

Private sector engagement will be an important aspect of the project, in particular under Component 3, which aims to develop market incentives for the target crops. The project will encourage the private sector, including small-scale producers and processors, companies and NGOs, to promote biodiversity conservation through sustainable use. Section 2 has already highlighted the market barriers that exist in the target provinces for the five target species, some of which the Project will certainly need to consider and take account of in decision-making. The Project will employ models and approaches that have been demonstrated as successful for marketing of other similar types of biodiversity and can enhance income-generating options for farmers and rural communities through sustainable production. The growing demand from consumers in developed and developing countries for diversity and novelty in food is creating new markets for biodiverse species. This situation can generate new opportunities for additional income for poor farmers in less-favoured environments where these species have comparative advantages over staples or other commercial crops. The ability of modern technologies to transform such raw materials into a wide range of products and to allow shelf-life extension offers opportunities to develop new uses and markets beyond their current commercial boundaries.

During the development of this project, private sector companies PT Maxindo and PT Sidomuncul were approached to assess their interest in contributing to project outputs, outcomes, and objectives. PT Maxindo is a snack-manufacturing company that specializes in producing crackers and snacks (including organic) made from cassava and yam, taro and sweet potato, which it distributes to 28 countries. PT Maxindo has worked closely with ICABIOGRD to identify superior varieties of these root and tuber crops to improve production. It complies with the highest food standards (e.g., Rainforest Alliance) and is in the process of obtaining certifications from Fair Trade. The company's main reason for collaborating with ICABIOGRD is to obtain uniform breeds with high productivity levels, that are pest- and disease-resistant, and to disseminate information on sustainable agricultural practices among farmers. PT Maxindo works with ICABIOGRD to produce patent-free seeds. The company is also committed to ensuring the welfare of the communities with which it works and maintains environmental sustainability by implementing the principles of the SDGs. The company builds farmer capacity to use pesticides in the correct and appropriate amounts, to manage domestic waste, use sustainable agricultural practices and to tackle climate change by introducing superior varieties that are drought tolerant. PT Sido Muncul is a herbal medicine and food products company interested in sourcing high quality ingredients for its herbal preparations. During the sub-national inception workshop, PT Sido Muncul indicated its interest in collaborating with the project with respect to the marketing of nutmeg in North Maluku.

The two companies, along with additional private sector partners yet to be identified, could play a role in value chain development, knowledge management and investment mobilization. At the provincial, regency and grassroots level, the baseline assessment team identified several micro-enterprises and small-scale businesses, such as the village owned company BUMDES active in Blora, Central Java. Members of the village-owned company BUMDES have already taken part in

several village level trainings on business development, value addition and eco-tourism and could be an ideal partner for additional ground level training around the conservation and sustainable use of target crops. Further, they can also play a role in knowledge dissemination under Component 4.

Other private sector stakeholders that the project will seek to engage under its Component 3 include agricultural cooperatives, traders and companies that provide inputs such as fertilizers and seeds, as well as local agricultural women's associations.

## 5. Risks to Achieving Project Objectives

**Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):**

The analysis of risks and proposed mitigation measures as listed in the PIF document was reviewed following the comments from the STAP review. Also, several additional risks were identified and included in the table below.

Description of risk	Impact [1]	Probability of occurrences	Mitigation actions	Responsible entity
There is a lack of political will at government and provincial levels and among involved stakeholders to collaborate during project implementation	<b>M</b>	<b>Low</b>	This risk will be mitigated through Component 1 of the project where a cross-sectoral platform composed of high-level decision makers from relevant ministries (i.e., the Ministry of Agriculture and Ministry of Environment and Forestry) as well as local governments of the target provinces and representatives of the local Masyarakat Adat will be established. This cross-sectoral platform will oversee project implementation and ensure that a strong and solid partnership among the stakeholders is created.	BB Biogen (MoA), MoEF

Description of risk	Impact <a href="#">[1]</a>	Probability of occurrences <sup>3</sup>	Mitigation actions	Responsible entity
There is a risk that compared to the improved varieties of staple crops, the government attaches less importance to the traditional local varieties and conservation of crop wild relatives (CWR)	<b>H</b>	<b>Low</b>	The value and importance of these unique traditional local varieties and CWR will be demonstrated to policy makers to ensure they continue to champion the effective conservation of the target crops and develop the required policies to protect and promote their use for the benefit of local people. FAO and ICABIOGRD will play a key advocacy role in ensuring support for sustainable conservation and sustainable use of these crops.	MoA
Masyarakat Adat and farmers are unwilling to change their agricultural practices vis-?-vis local varieties and continue to prefer commercial, improved, varieties for economic or social reasons	<b>M</b>	<b>Low</b>	In general, there is high demand among local communities for local diversity of the target crops, as revealed during the field visits. Farmers and Masyarakat Adat will be involved in a participatory manner at all stages of project implementation so that their problems are identified, and measures are embedded to address these concerns.	MoA



Description of risk	Impact <a href="#">[1]</a>	Probability of occurrences <sup>3</sup>	Mitigation actions	Responsible entity
<p>Opportunities for market development of target agrobiodiversity exists in the country, but there is a risk that value chain actors are unwilling to collaborate or that consumers are not interested in proposed biodiversity-friendly products</p>	<p><b>H</b></p>	<p><b>Medium</b></p>	<p>The project will carry out awareness-raising activities and will engage with private sector and consumers at an early stage to identify real opportunities for market development and address any constraints. Interventions will be carried out to demonstrate the economic, nutritional, and cultural value of the target species to value chain actors and identify how they can contribute to improving diets and livelihoods. Through incentive mechanisms identified during the implementation stage (e.g., PACS), farmers will be empowered to increase production of the target crops and link to markets through identified value chains</p>	<p>MoA</p>

Description of risk	Impact [1]	Probability of occurrences3	Mitigation actions	Responsible entity
<p>There is a risk that the COVID-19 pandemic may impact the following:</p> <ul style="list-style-type: none"> <li>? Stakeholder engagement</li> <li>? Project implementation</li> <li>? Co-financing commitments</li> <li>? Socio-economic impact</li> </ul>	<b>M</b>	<b>Low</b>	<p>FAO will work with the Government of Indonesia (GOI) to ensure that project stakeholders are able to fully participate in project activities. Best COVID-19 adaptation practices will be applied to reduce risks along the project implementation cycle. These adaptations include switching many activities like meetings or big gatherings to virtual mode (this is most effective among institutional and international partners with good tech integration, high-speed Internet, etc.), restricting travel to essential staff, reducing and spacing out meeting participants, holding meetings outdoors, observing masking regulations and social distancing, and providing regular COVID-19 antigen tests for staff.</p> <p>Precautionary measures will be taken, in particular, when travelling to and organizing meetings with local communities and Masyarakat Adat to avoid spread of COVID-19.</p> <p>At local level, small holder farmers and land managers are fundamentally important for any COVID-19 recovery and rural development work supported by the Government to ensure that socio-economic impacts are minimised. The project contributes to the Government's COVID-19 recovery efforts by providing sustainable, biodiversity-based livelihood and income opportunities to local communities.</p> <p>At the same time, FAO</p>	BB Biogen and project partners

Description of risk	Impact <a href="#">[1]</a>	Probability of occurrences <sup>3</sup>	Mitigation actions	Responsible entity
<p>There is a risk that the diversity of CWR and landraces at the project sites are severely impacted by shifts in local climates, thereby leading to genetic erosion among the target crops</p>	<p><b>M</b></p>	<p><b>Medium</b></p>	<p>As part of Output 2.1, a climate prediction risk analysis will be carried out to determine the likely impact of climate change on the identified hotspot areas. Intervention strategies and actions will be developed to avert the loss of genetic diversity. It is recommended that threatened species that cannot be conserved in situ will be handed over to the competent national authority for safeguarding, while respecting FPIC and the right to self-determination of the Masyarakat Adat as outlined in Annex J. Further, the project will work with local communities to develop sustainable agricultural methods and practices using FAO's climate risk screening tool to identify other mitigation measures and good practices that should increase resilience to climate change at the project sites.</p> <p>A more detailed climate analysis is summarized in the following section and provided as a separate document in the Portal.</p>	<p>BB Biogen and MoEF</p>

Description of risk	Impact [1]	Probability of occurrences	Mitigation actions	Responsible entity
Commitment to <i>in situ</i> and on farm conservation of agricultural biodiversity may not be desirable to all farmers and communities.	<b>M</b>	<b>Medium</b>	More detailed stakeholder consultations will be carried out during project implementation and stakeholder inputs and interest will be duly taken into consideration. As part of Component 2 of the project (Output 2.2), key stakeholders involved in the project will be trained to deploy effective integrated conservation approaches ( <i>in situ/on farm</i> ) and utilization for target Indonesian crops. The project will also explore the use of incentive measures to make this more attractive to farmers.	BB Biogen and MoEF
Masyarakat Adat do not feel their rights, knowledge and food systems are taken into consideration and project activities have been carried out without their consent (see also Section on ESS risks and Annex J)	<b>H</b>	<b>Medium</b>	Annex J details the mitigation actions needed by the PMU to avoid a situation of grievances. FPIC processes and Masyarakat Adat Plans will be developed with the Masyarakat Adat and supervised by the PMU expert	BB Biogen and MoEF

[1] H: High; M: Moderate; L: Low.

#### (a) COVID-19 Risks and Opportunities

The economic downturn related to global COVID-19 pandemic may limit government investments in the conservation and use of crop diversity and, hence, reduce co-financing. However, governments may also see agriculture and natural resources management as a way to generate employment and to revive local economies, which have been heavily hit by the pandemic. A recent assessment report by the Australian Centre for International Agricultural Research (McCarthy et al., 2020) finds that the COVID-19 pandemic in Indonesia has had and continues to have profound, variable and dynamic impacts on rural livelihoods depending on geographical area and production systems. While the Government of Indonesia has rolled out social protection mechanisms and programs to soften the impact of COVID-19, the fragmentation of value chains, falling producer prices, the contraction of the informal sector and the loss of jobs have severely affected the welfare of rural households in many places. In response, smallholders are taking up localized survival strategies and turning back to agriculture. There is also evidence of a fall in access to high-quality food as households move to higher energy carbohydrates, suggesting that the pandemic will have detrimental effects on nutrition.

Short-term interventions can understand and respond to the nutritional and livelihood impacts of this shock. Research can analyse how the pandemic has led to the disruption of value chains and the emergence of e-commerce and support measures to address these issues. Over the medium term, research can map and analyse existing household coping strategies, learn from the history of livelihood projects, and support measures to enhance diverse livelihoods, heterogeneity in agroforestry systems and crop diversification. Over the longer term, interventions can support the integration of nutrition and health issues into agrifood policy, provide for regional responses that build on local institutions and knowledges, design social protection strategies that directly address vulnerabilities found in regional contexts, and enhance farmer learning and their capacity to adapt to climate change.<sup>[1]</sup>

Very much in line with the activities proposed in this project, the assessment identified several opportunities for action to address these vulnerabilities. For the short term, and linked to Component 3, recommendations include exploring e-commerce options to manage disruptions to supply chains. This could be an additional incentive for farmers to engage. Intermediate actions (up to 5 years) support the promotion of heterogeneity in agroforestry, cropping as well as diversification of livelihood portfolios, which could be achieved by harnessing the value of the target crops and CWR. The report also mentions mapping and learning from existing strategies to guide decision-making and support, such as exploring how state and non-state interventions can better support local resilience and empowerment (Component 1). Longer-term opportunities (> 10 years) include research and development to address systemic challenges and options for transformational change. This includes integrating nutrition and health considerations into agricultural research and other relevant policy; develop regional responses that build on local institutions and knowledge; design social protection interventions to help households deal with food system shocks; and enhance farmer learning, preparedness, and adaptation options (Components 2 and 3).

In the target sites in North Maluku, it was noted that the COVID-19 pandemic has affected funding for village development. Village funds are normally used to support improvements in infrastructure, health (*Posyandu*), community empowerment, disaster management, governance, and assistance. In Central Java, the supply chains disruptions caused by the COVID-19 pandemic have discouraged members of the farmer group ?Rumah Tani? from continuing to plant rice. In Central Kalimantan, it was noted that the main obstacle faced by farmers is the absence of sustained market demand for the target species, particularly because of the pandemic. During the pandemic, several store owners explored online marketing with one woman entrepreneur claiming that e-commerce helped her cope during this time. Online marketing and social media could therefore be further explored for mainstreaming and marketing of the target crops.<sup>[2]</sup>

The project will address these challenges brought by the COVID-19 pandemic ?mainly limited market access and low demand for food products due to reduced mobility, tourism and other operations? by developing marketing and promotional strategies that are resilient and adaptive in the face of future shocks and market disruptions. By developing market incentives and value chains for local crops, the project will contribute to green recovery and local livelihoods while preserving biodiversity. Opportunities for mainstreaming of local crops and foods into the tourism sector and planning will also be explored, along with scaling up of innovation, online marketing and mobile distribution of local products.

## **(b) Climate Risk Analysis**

A detailed climate risk analysis was conducted for the project and is attached as a separate document in the Portal. Modelled climate change projections for Indonesia set the overall climate risk at Medium to High depending on the hazard and intervention area (see table below). The highest risks across all target provinces are represented by floods and landslides. Potentially damaging and life-threatening floods are expected to occur at least once in the next 10 years due to more frequent and intense heavy precipitation days and an increase in the number of extreme rainfall events brought about by climate change. Heavy rainfall could also potentially make localized landslides a frequent hazard phenomenon depending on terrain slope, geology, soil, land cover and (possibly) earthquakes. Based on this information, planning decisions such as project siting and project design, should consider the level of

floods and landslide susceptibility in the project areas. The table below summarizes Indonesia's historical trends with respect to rain and precipitation from 1990 to present day along with projected changes for these values.

	<b>Historical trends since 1990</b>	<b>Projected changes</b>
<i>Temperature</i>	Mean annual temperature has increased by about 0.3°C	Warming will increase by 0.1°C per decade in Indonesia, with predicted temperature increases of approximately 0.8°C by 2030.
<i>Precipitation</i>	Precipitation patterns have changed particularly for the wet and dry seasons. There has been a decline in average annual rainfall in the southern regions (though this includes increases in wet season rainfall), while there has been an average increase in precipitation in the northern region coupled with decreased dry season rainfall.	Increased annual precipitation across most Indonesian islands, except in southern Indonesia where it is projected to decline by up to 15%. Changes in the seasonality of precipitation are projected: parts of Sumatra and Borneo may become 10-30% wetter by the 2080's during December-February. Rainfall patterns are predicted to change, with the rainy season ending earlier and the length of the rainy season becoming shorter. A 30-day delay in the annual monsoon is projected, bringing about a 10% increase in rainfall later in the crop year (April-June) and up to a 75% decrease in rainfall later in the dry season (July-September).

Wildfires and extreme heat are considered Medium risks in the target provinces, with the risk level increasing to High in Central Java. With the rise in temperatures and rainfall variations predicted to occur with global warming, there is a greater than 25% chance that at least one period of prolonged exposure to extreme heat will occur in the next five years, resulting in heat stress. In areas already affected by wildfire hazard, the fire season is likely to increase in severity and duration. However, the temperature increase in the next 50 years is predicted to be much lower than the global average. Earthquakes and tsunamis are also potentially important hazards in the target provinces with a greater than 20% chance of potentially damaging earthquake and a 40% chance of a potentially damaging tsunami occurring in the next 50 years. Based on this information, detailed information should be obtained prior to planning and site selection to adequately account for the level of hazard, particularly in low-lying coastal areas. It would be prudent to identify sites that are robust to these hazards in the long-term.

	<b>Wildfires</b>	<b>Earthquakes</b>	<b>Water Scarcity</b>	<b>Urban floods</b>	<b>River floods</b>	<b>Volcanic eruptions</b>	<b>Cyclones</b>	<b>Tsunamis</b>	<b>Landslides</b>	<b>Water scarcity</b>	<b>Extreme heat</b>
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<b>C K</b>	M	M	M	H	H	-	-	M	H	-	M
<b>CJ</b>	H	M	-	H	H	M	H	H	H	M	M
<b>N M</b>	M	M	-	H	M	M	-	H	H	-	M

Source: <https://thinkhazard.org/en/report/116-indonesia/LS>

Legend: CK=Central Kalimantan; CJ=Central Java and NM= North Maluku M=Medium risk and H=High risk

#### *Impacts on increased climate variability and change on some target crops*

Although limited information was found on the effects of climate change on target Indonesian crops, climate change, especially the rise in temperature and rainfall variability, is likely to have profound effects on these species, in terms of distribution in the long term, but also on immediate agricultural outputs and food supply. Regarding rice (*Oryza sativa*), the predicted changes in annual cycle of precipitation, could bring about delayed rice planting in the main rice growing areas of Indonesia, thus significantly impacting the country's rice economy. Cloves are also likely to be affected by climate factors, especially increased temperature and rainfall fluctuations. Excess rain or the lack of it impacts the plant's grow hormones. Too much rain prevents clove trees from flowering, turning the buds into leaves and leading to a sharp decline in the harvest, while prolonged drought causes the trees to dry up and die. Stronger storms, more frequent flooding and increasing temperature, will likely affect nutmeg production. Increased precipitation and higher wind intensity pose a threat to trees with shallow roots like the nutmeg tree which can be easily uprooted, while intense rainfall can lead to root rot and the increased incidence of pests and diseases. Reduced water availability might also critically limit the growth potential of nutmeg trees, particularly for those growing in drier, low-lying areas. With regard to taro, there has been limited to no research on the effects of climate change on taro availability in Indonesia (Maretta et al., 2021). Similar results were obtained for yams. These findings highlight the urgent need for adaptation strategies in Indonesian agriculture that include increased investments in water storage, early warning systems, crop diversification and the use of resilient, climate-smart crops. Some of these traits could exist in the traditional cultivars identified in the target areas. Additional recommendations linked to mainstreaming locally adapted, climate smart crops into Indonesian agriculture are provided in the paragraphs below. Climate change can also impact the wild populations of CWR. There is a need to carry out climate change analysis on the distribution and richness of the target taxa to identify priority actions for their conservation.

Surveys conducted during PPG also highlighted the challenges caused by climate change, such as droughts and extreme climate events that threaten the survival and production of nutmeg and clove trees. For instance, excessive rains prevent clove trees from flowering, whereas prolonged droughts cause the trees to dry up and die (Pratama, 2020). In Central Java, irrigation is limited, and 65% of paddy fields are rain-fed only. During the dry season, lasting from April to October, most of Blora regency suffers from water shortages, especially in the limestone and mountainous areas. In the rainy season, from November to March, several areas are prone to landslides (Rizki, 2017). In Central Kalimantan, extreme climate events, such heavy rains and flooding, could potentially threaten the seed stocks when farmers fail to plant and or harvest.

#### *Risk to project outcomes and mitigation measures*

While climate change is unlikely to negatively affect the outcomes of **Component 1**, linked to the harmonization of cross-sectoral policy frameworks, the project could further explore the possibility of including climate insurance schemes for building climate resilience amongst farmers. There are diverse ways of mitigating the economic losses related to natural hazards, including multiple peril crop insurance (designed to cover the crops from multiple type of losses, e.g., heavy rainfall and drought), group risk plans (crop insurance based on the yield of a group of farmers on a particular area) etc. Another suggestion for the project is to embrace the key findings and policy recommendations emerging from the [AMICAF](#) project developed by FAO with national authorities (BMKG, ICALRRD and ICASEPS), to build climate resilience in Indonesia by addressing climate change and vulnerability

using the Modelling System for Agricultural Impacts of Climate Change (MOSAICC). Recommendations include raising awareness on climate risks, identifying climate change impacts, mainstreaming climate smart agriculture, just like adaptation and mitigation practices, and targeting climate finance and investment programs for adaptation in agriculture.

Climate change, on the other hand, could potentially affect the outcomes of Component 2 (Conservation) and 3 (Mainstreaming). Climate change can impact biodiversity-based products in mainly two ways. The first is by threatening the medium and short-term survival of the species being used in the conservation, production and promotion strategies outlined in this Project. The second is by shifting the geographical location of the species into areas in which they cannot be accessed at an acceptable cost. The likelihood of these two types of impacts happening in the short term, is deemed minimal. It is unlikely that climate change will threaten the species equally. In fact, some of these species might be well-adapted to the new conditions brought about by climate change. Since this Project is based on maintaining and promoting diversity, it will provide an implicit adaptive strategy to cope with the effects of climate change. This supplies farmers and consumers with some level of insurance against the negative effects of climate change.

Under **Component 2**, recommendations include supporting community nurseries/participatory plant breeding with germplasm that can be used to adapt to climate change, including with drought and heat tolerant genotypes, short-cycle varieties and pest and disease resilient crops. The Project could also support the reviewing of breeding strategies and priorities crop-by-crop to ensure that enhanced crops are ready to face climate threats. Finally, the project could promote and ensure that policies facilitate the international exchange of genetic resources to provide farmers with the most suitable seeds to adapt to shifting climatic zones. Capacity building efforts could include Climate Field Schools (CFS). CFS previous experience in Indonesia shows that farmers can learn and work together to identify the most suitable seed types adapted to their local climate and collect hydro-meteorological data to mitigate the potential impacts of rice diseases (blast fungus). In addition, through CFS, farmers in Java have been trained to observe and record plant growth, humidity, and rainfall, besides integrating cultivation techniques with climate and weather information. The genetic reserves to be established under Component 2 will also take into account the climate risks identified.

Under **Component 3**, the Project could strengthen its collaboration with existing research institutions (e.g., the International Rice Research Institute IRRI) to evaluate climate resilient rice genotypes and identify plant genetic resources that can withstand weather extremes, including drought, heavy rainfall, heat stress conditions, among other abiotic stresses.

As part of the awareness and dissemination of information activities under **Component 4**, the Project could explore the possibility of providing end-users, in this case rice, taro, yam, cloves and nutmeg producers, with climate and weather information suited to their crop needs. Agrometeorological information (crop calendars, onset/offset rainy season, consecutive dry days, cumulative rainfall, pest and disease forecasts) could be delivered and mainstreamed through existing communication means (e.g., Mosques' speakers).

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[1] <https://www.aciar.gov.au/publication/covid-19-and-food-systems-indo-pacific/4-covid-19-and-food-systems-indonesia>

[2] See also D Suwito *et al.* (2021). The Covid-19 pandemic impact on indigenous people livelihoods in the peat swamp forest ecosystem in Central Kalimantan Indonesia. *IOP Conf. Ser.: Earth Environ. Sci.* **894** 012023.

## **6. Institutional Arrangement and Coordination**



**Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.**

## **6.a Institutional arrangements for project implementation**

The *Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development* (ICABIOGRD) [BB Biogen in Bahasa] of the Ministry of Agriculture (MoA) will be the project's **Lead Executing Agency** and will have the overall executing and technical responsibility for the project, with FAO providing oversight as GEF Agency as described below. ICABIOGRD will act as the lead executing agency and will be responsible for the day-to-day management of project results entrusted to it in full compliance with all terms and conditions of the Operational Partners Agreement (OPA) signed with FAO. As Operational Partner (OP) of the project, ICABIOGRD is responsible and accountable to FAO for the timely implementation of the agreed project results, operational oversight of implementation activities, timely reporting, and for effective use of GEF resources for the intended purposes and in line with FAO and GEF policy requirements.<sup>[1]</sup> ICABIOGRD will oversee project management and will:

1. Establish reporting guidelines for all partners and ensure that they submit quality and timely reports (and consolidate them)
2. Prepare quarterly financial, biannual progress reports (Project Progress Reports/PPR) and annual summary progress reports (Project Implementation Reports/PIR) for FAO/GEF.
3. Oversee the work of the Project Management Unit (PMU), partners and undertake regular visits to the project sites to supervise activities and address implementation concerns.
4. Organize and facilitate regular Project Steering Committee meetings and other meetings as appropriate
5. Facilitate links to technical and scientific inputs from key programmes and experts in order to support the implementation of the project.
6. Facilitate links to technical and scientific inputs from relevant international collaborators.
7. Explore all opportunities to showcase and make links with relevant regional and global forums and processes.

The Directorate General of Natural Resources and Ecosystem Conservation, Ministry of Environment and Forestry (MoEF) will be an Implementing Partner through Letter of Agreement (LOA) with FAO and will be closely engaged in project implementation. Other partners will also be involved in the project implementation, as outlined in Annex G (work plan) and Annex A1 (budget).

The government will designate a **National Project Coordinator (NPC)**. Located in ICABIOGRD, the NPC will be responsible for coordinating the activities with all the national bodies related to the different project components, as well as with the project partners as shown in the Stakeholder Table above. The NPC will also be responsible for supervising and guiding the National Project Manager (see below) on the government policies and priorities.

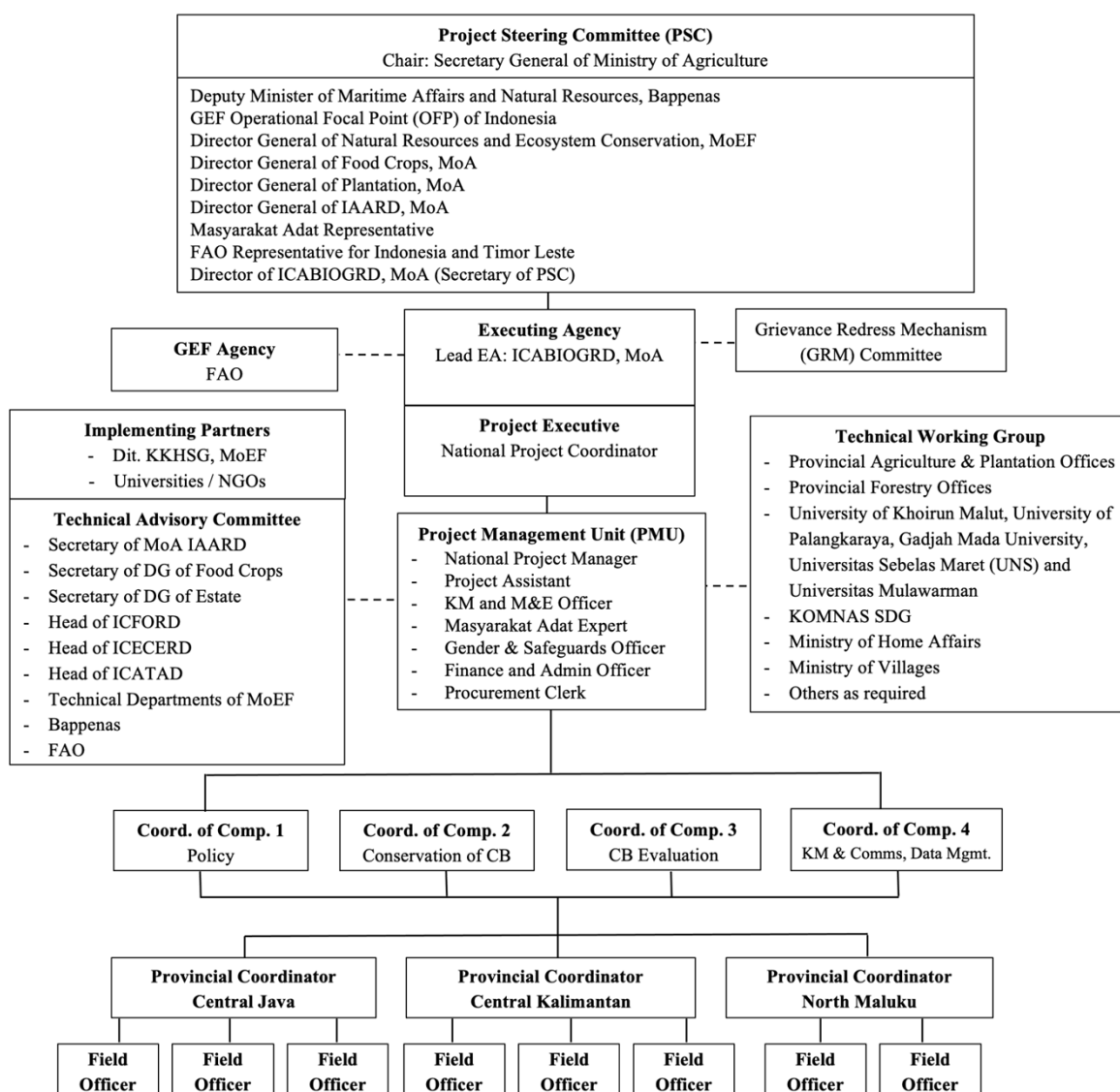
A **Project Steering Committee (PSC)** will be established to provide strategic guidance to the PMU and take decisions related to the project implementation including approval of project plans, budgets and revisions. The PSC will be comprised of representatives from the National Development Planning Agency (BAPPENAS), the GEF Operational Focal Point of Indonesia, MoA, MoEF, and FAO. The PSC will also include a representative from Masyarakat Adat. The Secretary General of Ministry of Agriculture will chair the Project Steering Committee. The PSC will provide strategic guidance to the Project Management Team and to all executing partners. The PSC will meet at least twice a year to ensure: i) Oversight and assurance of technical quality of outputs; ii) Close linkages between the project and other ongoing projects and programmes relevant to the project; iii) Timely availability and effectiveness of co-financing support; iv) Sustainability of key project outcomes, including up-scaling and replication; v) Effective coordination of governmental partners work under this project; vi) Review and approval of the Annual Work Plan and Budget; vii) Making by consensus, management decisions when guidance is required by the National Project Coordinator of the PMU. The members of the PSC

will each assure the role of a Focal Point for the project in their respective agencies. Hence, the project will have a Focal Point in each concerned institution. As Focal Points in their agency, the concerned PSC members will: (i) technically oversee activities in their sector; (ii) ensure a fluid two-way exchange of information and knowledge between their agency and the project; (iii) facilitate coordination and links between the project activities and the work plan of their agency; and (iv) facilitate the provision of co-financing to the project. The Director of ICABIOGRD will be the Secretary to the PSC.

A **Technical Advisory Committee (TAC)** and a **Technical Working Group (TWG)** will be established to provide technical advice and guidance to the project and provide inputs to specific technical issues. The TAC and TWG will be convened *ad hoc* on a needs? basis by the project implementation (at least once a year). The TWG may call on additional relevant experts and institutions depending on the agenda items.

A **Project Management Unit (PMU)** will be co-funded by the GEF grant and established within ICABIOGRD. The main functions of the PMU, following the guidance of the Project Steering Committee, are to ensure overall efficient management, coordination, implementation and monitoring of the project through the effective implementation of the annual work plans and budgets (AWP/Bs). The PMU will be composed of a National Project Manager (NPM) who will work full-time for the project lifetime. The PMU will also include a Project Assistant, a Knowledge Management and M&E Specialist, a Masyarakat Adat Expert, a Gender and Safeguards Officer, a Finance and Administration Officer, a Procurement Clerk, three Provincial Coordinators, and eight Field Officers (one per district/regency). Additionally, four Component Coordinators will be appointed by ICABIOGRD to lead the implementation of the components.

The project organization structure is summarised in **Figure 7**, while the Terms of Reference (TOR) for key project personnel can be found in Annex K of the Project Document.



**Figure 7.** The project's organizational structure

The **National Project Manager (NPM)** will oversee day-to-day implementation, management, administration and technical supervision of the project, on behalf of the Operational Partner (ICABIOGRD) and within the framework delineated by the PSC. S/he will be responsible, among others, for:

- i) Overall technical lead for the implementation of all project outputs and activities and ensure technical soundness of project implementation.
- ii) Ensuring technical and operational lead and guidance in the implementation of all project outputs, in particular Outputs 1.1 to 1.5 on enabling environment and Outputs 2.1 and 2.2 on CWR and LR surveys, access and benefit sharing, and capacity development.
- iii) Coordination with relevant initiatives and activities by other projects including other GEF-financed projects.
- iv) Supervising the work of the Project Management Unit (PMU) staff and any project consultants
- v) Ensuring a high level of collaboration among participating institutions and organizations at the national and local levels.
- vi) Ensuring compliance with all Operational Partners Agreement (OPA) provisions during the implementation, including on timely reporting and financial management.
- vii) Coordination and close monitoring of the implementation of project activities.

- viii) Leading and supervising the preparation of various technical outputs, e.g., knowledge products, reports and case studies.
- ix) Ensuring meaningful engagement of stakeholders as per the Stakeholder Engagement Plan.
- x) Ensuring that all project resources are used solely to achieve project objectives consistent with the approved work plan and budget and government financial policies and FAO/GEF requirements.
- xi) Tracking the project's progress and ensuring timely delivery of inputs and outputs, including targets for the project's indicators in line with the results framework.
- xii) Providing technical support and assessing the outputs of the project national consultants hired with GEF funds, as well as the products generated in the implementation of the project (e.g., reports, data).
- xiii) Approving and managing requests for provision of financial resources using provided format in OPA annexes.
- xiv) Monitoring financial resources and accounting to ensure accuracy and reliability of financial reports.
- xv) Ensuring timely preparation and submission of requests for funds, financial and progress reports to FAO as per OPA reporting requirements.
- xvi) Maintaining documentation and evidence that describes the proper and prudent use of project resources as per OPA provisions, including making available this supporting documentation to FAO and designated auditors when requested.
- xvii) Implementing and managing the project's monitoring and communications plans.
- xviii) Managing and monitoring the project risks initially identified and submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log.
- xix) Organizing project workshops and meetings to monitor progress and preparing the Annual Budget and Work Plan.
- xx) Submitting the six-monthly Project Progress Reports (PPRs) with the AWP/B to the PSC and FAO.
- xxi) With support from the Knowledge Management and M&E Specialist, preparing the first draft of the Project Implementation Review (PIR).
- xxii) Supporting the organization of the mid-term review in close coordination with the FAO Budget Holder and the GEF Coordination Unit.
- xxiii) Supporting the organization of the terminal evaluation in close coordination with the FAO Budget Holder and the FAO Independent Office of Evaluation (OED).
- xxiv) Submitting the required OP technical and financial reports to FAO and facilitate the information exchange between the OP and FAO, if needed.
- xxv) Providing draft of terminal report for Budget Holder (BH) two months before the ending date of the OPA or the project.
- xxvi) Informing the PSC and FAO of any delays and difficulties as they arise during the implementation to ensure timely corrective measure and support.
- xxvii) With the support of the project's Knowledge Management and M&E Specialist, ensure implementation of the project's knowledge management and communications activities, including updating of information on the project's webpage.
- xxviii) In collaboration with the Gender and Safeguards Officer, ensure implementation of FPIC, ABS, Gender Action Plan, Stakeholder Engagement Plan, in particular with regard to Masyarakat Adat.

The **Food and Agriculture Organization (FAO)** will be the GEF Implementing Agency (IA) for the Project, providing project cycle management and support services as established in the GEF Policy. As the GEF IA, FAO holds overall accountability and responsibility to the GEF for delivery of the results. In the IA role, FAO will utilize the GEF fees to deploy four different actors within the organization to support the project (see Annex I of the Project Document for details):

- ? The *Budget Holder*, i.e., the FAO Representative in Indonesia, will provide oversight of day-to-day project execution;

- ? The *Lead Technical Officer(s)*, drawn from across FAO will provide oversight/support to the projects technical work in coordination with government representatives participating in the Project Steering Committee;
- ? The *Funding Liaison Officer(s)* within FAO will support the project cycle to ensure that the project is being carried out and reporting done in accordance with agreed standards and requirements;
- ? The *HQ Technical Officer* is accountable for advising and supporting the LTO in ensuring project formulation, appraisal and implementation adhere to FAO corporate technical standards and policies.

FAO responsibilities, as GEF agency, will include:

- ? Administrate funds from GEF in accordance with the rules and procedures of FAO;
- ? Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers, Operational Partners Agreement(s) and other rules and procedures of FAO;
- ? Provide technical guidance to ensure that appropriate technical quality is applied to all activities concerned;
- ? Conduct at least one supervision mission per year; and
- ? Reporting to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, the Mid Term Review, the Terminal Evaluation and the Project Closure Report on project progress;
- ? Financial reporting to the GEF Trustee.

FAO's key comparative advantages related to this project are summarized below.

FAO has long history of work on promoting conservation and sustainable use of agrobiodiversity since its establishment.

FAO hosts the [Commission on Genetic Resources for Food and Agriculture](#), which is the only permanent intergovernmental body that specifically addresses biological diversity for food and agriculture. It aims to reach international consensus on policies for the sustainable use and conservation of genetic resources for food and agriculture and the fair and equitable sharing of benefits derived from their use. Under the leadership of this Commission, FAO coordinates collection of global information and publishes periodic flagship reports on the State of The World's

1. Animal Genetic Resources for Food and Agriculture
2. Forest Genetic Resources
3. Aquatic Genetic Resources for Food and Agriculture
4. Biodiversity for Food and Agriculture

The Domestic Animal Diversity Information System (DAD-IS), maintained and developed by FAO, contains data from 182 countries on more than 8 000 livestock breeds belonging to 38 species. The World Information and Early Warning System on Plant Genetic Resources for Food and Agriculture (WIEWS) contains information on more than 4.9 million plant accessions from over 6 900 genera conserved under medium- or long-term conditions in over 575 genebanks in 90 countries and 16 international/regional centres. Data from WIEWS and DAD-IS are used to monitor indicators 2.5.1 (Number of plant and animal genetic resources for food and agriculture secured in medium- or long-term conservation facilities) and 2.5.2 (Proportion of local breeds, classified as being at risk, not-at-risk or at unknown level of risk of extinction) of the Sustainable Development Goals.

FAO has also published several voluntary guidelines related to agrobiodiversity, including

1. FAO (2017). Voluntary Guidelines for the Conservation and Sustainable Use of Crop Wild Relatives and Wild Food Plants. Food and Agriculture Organization of the United Nations. Rome, Italy.
2. FAO (2019). Voluntary Guidelines for the Conservation and Sustainable Use of Farmers' Varieties/Landraces.

FAO plays a leading role on Indigenous Peoples and Knowledge Systems, having released flagship publications about Indigenous Food systems with Bioversity and McGill among others. The 2021 FAO-Bioversity Publication: 'Indigenous Peoples Food Systems: Insights about sustainability and resilience from the Front line of climate change' was awarded with Halbars best 2021 sustainability book for explaining the linkages between indigenous peoples food systems and biodiversity conservation, FAO hosts a series of key coordination efforts on Biodiversity, food systems and Indigenous Peoples: The Global Hub on Indigenous Peoples Food Systems gathering 20 research institutions and indigenous and non-indigenous experts was endorsed by FAO's Committee on Agriculture (COAG) in 2020; The Rome Group of Friends of Indigenous Peoples gathers 34 member countries, including Indonesia, to discuss about Indigenous Peoples/Masyarakat Adat across the world; The FPIC task force co-coordinated by the EU and FAO ensures that GEF, GCF and other key donors mainstream FPIC across their policies and guidelines; and the UN Food Systems Coalition on Indigenous Peoples' food systems with Indigenous organizations and seven countries and supported by FAO and other UN agencies, advances the work on Indigenous Peoples Food Systems, biocentric restoration, rights of Indigenous Peoples to their plant genetic resources and protection of their knowledge systems and cosmologies.

FAO has designed and implemented several GEF projects related to agrobiodiversity with farmers and Indigenous Peoples around the world, including the following:

1. On-farm Conservation and Sustainable Use of Genetic Diversity of Crops Originated in China
2. Introduction of New Farming Methods for the Conservation and Sustainable Use of Biodiversity, including Plant and Animal Genetic Resources, in Production Landscapes in Selected Areas of Cuba
3. Facilitating agrobiodiversity (ABD) conservation and sustainable use to promote food and nutritional resilience in Tajikistan
4. Securing the Future of Global Agriculture in the Face of Climate Change by Conserving the Genetic Diversity of the Traditional Agro-ecosystems of Mexico
5. Mainstreaming of the Use and Conservation of Agrobiodiversity in Public Policies through Integrated Strategies and In situ Implementation in three Provinces in the Andean Highlands
6. Conservation and sustainable use of crop wild relatives (CWR) and edible wild species (EWS), under an institutional framework and the development of rural community initiatives in Ecuador
7. Dynamic Conservation and Sustainable use of Agro-Biodiversity in Traditional Agro-

<sup>[1]</sup> It should be noted that the identified Operational Partner(s) or OP, results to be implemented by the OP and budgets to be transferred to the OP are non-binding and may change due to FAO internal partnership and agreement procedures which have not yet been concluded at the time of submission.

#### **6.b Coordination with other relevant GEF-financed projects and other initiatives.**

The project builds on lessons learned of past and ongoing projects and will ensure there is strong coordination with ongoing and planned GEF-funded projects and other initiatives. The main relevant initiatives are summarized in the table below. Coordination will be ensured through the lead of the Ministry of Agriculture and Ministry of Environment and Forestry.

Project or initiative	Complementarity with the project / lessons learned
1) UNDP/FAO GEF-7 Strengthening sustainability in commodity and food systems, land restoration and land use governance through integrated landscape management for multiple benefits in Indonesia (GEF ID 10238) (child project of the global Food Systems, Land Use and Restoration (FOLUR) Impact Program) (project approved in 2021)	The project aims for a transformational change in sustainable commodity and crop supply chains and land governance, leading to a reduction in loss of high conservation value and high carbon stock forests in five jurisdictions in the country: Aceh Province (target district: Central Aceh), North Sumatera Province (target district: Mandailing Natal), West Kalimantan Province (target district: Sanggau), South Sulawesi Province (target district: Luwu), and West Papua Province (target district: Sorong). The project aims to foster and strengthen sustainable value chains of palm oil, coffee, cocoa and rice through implementation of a comprehensive landscape management approach integrating biodiversity conservation, ecosystem restoration and the sustainable production of cash and food crops at scale. Given FOLUR's focus on rice as well as on sustainable agriculture and private sector partnerships, it is expected that the two projects will seek opportunities to optimize resources in terms of capacity building, communication and private sector engagement.
2) FAO GEF-7 Strengthening Capacities for Prevention, Control and Management of Invasive Alien Species (SMIAS) in Indonesia (GEF ID 10705), under preparation	The project aims to safeguard globally significant biodiversity and ecosystem services through improved prevention, control and management of invasive alien species (IAS) in Indonesia. East Java Province and South Sulawesi Province. Bantimurung Bulusaraung National Park (BBNP) and Bromo Tengger Semeru National Park (BTSNP). The proposed project will exchange lessons learned and approaches with this project.

3) UNIDO GEF-7 Maintaining and Enhancing Water Yield through Land and Forest Rehabilitation (MEWLAFOR) (GEF ID 10757), project approved for implementation	The project aims to demonstrate an innovative approach to how a proactive multi-stakeholder private sector-catalyzed partnership for water stewardship can be upscaled to achieve transformational changes in the restoration of degraded terrestrial ecosystems. The project will be implemented in the Brantas Basin in East Java. Knowledge and lessons learned will be exchanged with this project in relation to sustainable management of ecosystems.
4) IFAD GEF-7 Strengthened Systems for Community-based Conservation of Forests and Peatland Landscapes in Indonesia (CoPLI) (GEF ID 10731), under preparation	The project aims to conserve globally important biodiversity and enhance livelihoods through a strengthened institutional framework and community based conservation of peatland ecosystems. The project's primary focus is on West Kalimantan, including two of Kalimantan's most important national parks, Danau Sentarum National Park (DSNP) and Gunung Palung National Park (GPNP). The proposed project will exchange with this project with regard to its interventions in Kalimantan.
5) UNDP GEF-6 Strengthening Forest Area Planning and Management in Kalimantan (GEF ID 6965), under implementation	The project aims at maintaining forest areas, including the biodiversity and ecosystem functions of Kalimantan's lowland and montane areas, from the development of estate crops. The pilot districts for district- and landscape-level interventions are Ketapang and Sintang in West Kalimantan; Kotarwaringan Barat in Central Kalimantan; Mahulu district in East Kalimantan. The proposed project will build on the lessons learned and mechanisms established under this project.
6) WB GEF-6 Strengthening of Social Forestry in Indonesia (GEF ID 9600), under implementation	The project aims to improve access to forest land use rights and strengthen community management in selected priority areas allocated for social forestry. The proposed project will build on the lessons learned of this project with regard to social forestry.
7) FAO GEF-5 Mainstreaming Biodiversity Conservation and Sustainable Use into Inland Fisheries Practices in Freshwater Ecosystems of High Conservation Value (IFish) (GEF ID 5759), under implementation	<p>The project objective is to strengthen the management framework for sustainable use of inland aquatic biodiversity to increase the protection of high conservation-value freshwater ecosystems and their biodiversity in Indonesia. The Project strategy is to combine mainstreaming of inland aquatic biodiversity into resource development and management policy, with demonstrations of conservation and sustainable use of inland aquatic biodiversity in critical habitats at five sites in Kalimantan, Java and Sumatra, and effective monitoring and assessment. Kapuas and South Barito Districts, Central Kalimantan; Kampar District Sumatra; Cilacap District in Central Java, Sukabumi District in Western Java.</p> <p>The proposed project will build on lessons learned of the mid-term review (MTR), conducted in 2021, and will coordinate project activities in Kapuas district, in particular.</p>



<p>8) UNDP GEF-5 Capacity Development for Implementing Rio Conventions through Enhancing Incentive Mechanism for Sustainable Watershed/Land Management (GEF ID 5848), under implementation</p>	<p>The project aims to strengthen targeted legal and regulatory frameworks as well as economic incentives to meet global environmental outcomes through sustainable watershed management. Synergies and exchange of knowledge will be sought with this project.</p>
<p>9) Similar GEF projects in the region and globally</p>	<p>The project builds on knowledge, approaches and lessons learned of similar projects in the region and globally, in particular:</p> <ul style="list-style-type: none"> <li>(i) FAO GEF-6 Securing the Future of Global Agriculture in the face of climate change by conserving the Genetic Diversity of the Traditional Agroecosystems of Mexico (GEF ID 9380) (focused on maize, beans, amaranth, etc.)</li> <li>(ii) FAO GEF-6 Sustainable Management of Agro-Biodiversity and Vulnerable Ecosystems Recuperation in Peruvian Andean Regions Through Globally Important Agricultural Heritage Systems (GIAHS) Approach (GEF ID 9092) (focused on potato, maize, quinoa, etc.)</li> <li>(iii) FAO GEF-6 On-farm Conservation and Sustainable Use of Genetic Diversity of Crops Originated in China (GEF ID 9876) (focused on rice, soybean, millet)</li> <li>(iv) FAO GEF-5 Dynamic Conservation and Sustainable use of Agro-Biodiversity in Traditional Agro-ecosystems of the Philippines (GEF ID 5549) (focused on rice, sweet potato, yam, taro). Lessons learned of the terminal evaluation (currently ongoing) will be taken into account).</li> <li>(v) UNEP GEF-5 Integrating traditional Crop Genetic Diversity into Technology: Using a Biodiversity Portfolio Approach to Buffer against Unpredictable Environmental Change in the Nepal Himalayas (GEF ID 4464) (focused on 8 target crop species, i.e. amaranth, barley, buckwheat, beans, finger millet, foxtail millet, proso millet and high-altitude rice)</li> </ul>

<p>10) FAO GEF-7 Sustainable Forest Management Impact Programme on Dryland Sustainable Landscapes (GEF DSL-IP, GEF ID 10206)</p>	<p>The proposed project will build on knowledge and lessons generated under the GEF-7 DSL IP. The programme is being implemented over the period 2021-2026 and will provide valuable lessons, approaches, tools and platforms to draw upon. One approach being used under GEF DSL-IP is to establish a network of community seed banks and strengthen the enabling policy environment at national and regional level in order to catalyse the sustainable management of dryland landscapes. Community Seed Banks (CSBs) facilitate a continuous flow of crop genetic diversity needed to enable intensification, through the introduction, testing and use of new diversity, including neglected and underutilized species (NUS), such as pulses and underutilized species relevant to the target areas. Key policy activities include the undertaking of policy and legal reviews, making recommendations and providing capacity building related to national policy development, local level policy development and the implementation of farmers' rights. This also includes ensuring that communities have more control over local resources, increased access to genetic diversity and greater knowledge of their own national programmes, other countries and international organizations. Beneficiaries will be trained on the mutual implementation of ITPGRFA and Nagoya Protocol and national implementation of Farmers' Rights. Lessons learned regarding the mutual implementation will be shared with the Indonesia Crop Diversity Project.</p> <p>In particular, the Malawi DSL-IP project<sup>[1]</sup> will identify, on the basis of the Nagoya Protocol on Access and Benefit-sharing, international and domestic-level benefit-sharing opportunities for the fair and equitable sharing of benefits arising from the utilization and commercialization of non-timber forest product (NTFP) resources associated with the traditional knowledge of local communities in the target landscapes. By setting-out clear provisions on access to traditional knowledge associated with selected Miombo &amp; Mopane NTFP resources with high commercial value for food and pharmaceutical enterprises, the project will assist the project beneficiaries in developing community protocols on access and benefit sharing. Protocols will define minimum requirements for mutually agreed terms and contractual clauses related to access and benefit-sharing of traditional knowledge associated with the selected NTFP resources. Community protocols will be used to negotiate at least one benefit-sharing agreement with companies interested and involved in the development of new cosmetic, pharmaceutical and food products, which are based on traditional knowledge and heritage. The agreement may include payments during the product development period and royalty income in the case of successful commercialization of the selected product, which can manage within a Fund used to support community development and education needs, and support for the conservation and sustainable management of the habitats and species populations providing the targeted NTFP resource.</p>
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11) UNEP GEF-4 project on the Nagoya Protocol <i>?Building Capacity for Regionally Harmonized National Processes for Implementing CBD Provisions on Access to Genetic Resources and Sharing of Benefits?</i> (GEF ID 3853, closed in 2018)[2]	This project, of which Indonesia was a part, assisted participating countries to implement ABS by providing the opportunity for them to complete a national policy and regulatory regime, make further progress in developing draft national ABS laws and regulations, or to develop, or build the foundation for developing, a draft national ABS framework. The project focused on disseminating existing tools for implementing ABS, making them available and explaining them to all participating countries and sharing of lessons between participating countries. The project was found to have been effective in motivating stakeholders to participate in implementing ABS.[3]
12) WWF Heart of Borneo Program, and Sebangau Conservation Project under USAID LESTARI (ended in 2020)	This project was initiated by WWF in Sebangau National Park. The following three activities were conducted: restoration and rehabilitation (canal blocking and tree planting program), community empowerment (ecotourism, agroforestry, fisheries, sustainable agriculture and home industry), and collaborative management between Sebangau National Park and local stakeholders (local government, NGOs, communities, researchers and the private sector). Although the proposed project is not directly working in Sebangau National Park, it will build on lessons learned and previous capacity developed in Central Kalimantan with regard to sustainable land management and biodiversity conservation by empowering local communities.
13) UNDP-GEF Small Grants Projects	Linkages will also be sought with existing or past Small Grants Projects in Indonesia.[4]
14) Global Crop Diversity Trust, in particular the Crop Wild Relatives Project	This project has completed the 6-year phase focused on collecting wild relatives in the world's biodiversity 'hotspots'. In 25 countries, 4,587 seed samples from at least 355 CWR taxa were collected.[5] Linkages will be established with this project to exchange knowledge and approaches.

<p>15) CGIAR and Bioversity International's work on the mutually supportive implementation of the Nagoya Protocol and the ITPGRFA</p>	<p>Lessons learned and international best practices were discussed at a workshop organized in 2014. The case scenarios presented in the workshop report were based on issues raised and lessons learned/best practices in relevant literature, in national ABS policy implementation projects, and in surveys with workshop participants.<sup>[6]</sup> Please refer to the box on 'Mutually supportive implementation?' in <i>Section 3) Alternative scenario</i> for more details.</p> <p>Bioversity International is working together with the ABS Capacity Development Initiative and the Secretariats of the CBD Nagoya Protocol and the Plant Treaty to increase national policy actors' ability to implement both agreements in supportive ways to demystify the 'grey areas' and arrive at clear operable approaches for implementation through</p> <p>(i) Capacity-strengthening workshops, (ii) Research papers, (iii) Awareness-raising, and (iv) Decision-making tools.<sup>[7]</sup></p> <p>In 2015-2016, with support from the UK Darwin Initiative, Bioversity International worked with the ABS Capacity Development Initiative, the Secretariats of the CBD and ITPGRFA, the African Union Commission, and with partners and stakeholders in Benin and Madagascar, to develop ABS laws and agreements that contribute to pro-poor rural development and offset the cost of conserving genetic resources. One of the cornerstones of the project was that the project activities in each country were guided by a National Project Committee, that is, a multi-agency, multi-stakeholder committee co-chaired by the focal points for each of the ITPGRFA and the Nagoya Protocol. The project supported community level activities in both countries to help these communities organize information about the biological diversity they manage, whilst developing community biodiversity management plans, community access and benefit-sharing protocols and ABS agreements.<sup>[8]</sup> Baseline studies, policy briefs and national roadmaps were developed.<sup>[9]</sup> The Indonesia Crop Diversity project will build on the best practices of this project in supporting the national level implementation of ABS.</p> <p>A virtual workshop on 'Access and Benefit Sharing in southern and eastern Africa' was organized in 2022 by the Alliance of Bioversity and CIAT and the Southern African Development Community (SADC) Plant Genetic Resources Centre in collaboration with the CBD Secretariat's Nagoya Protocol ABS Unit and other partners, with funding from the UK Darwin Initiative. The workshop highlighted a number of challenges related to access and benefit sharing with respect to CWRs. One is the low level of actual national and subnational implementation of the ITPGRFA and the Nagoya Protocol. Another challenge is that when there have been efforts to implement them, the measures are often not fully developed or clear about which set of rules apply in different circumstances. This issue calls attention to the importance of institutional coordination in the development and day-to-day operation of measures implementing the two agreements. Ministries of Environment are typically responsible for implementing the CBD and Nagoya Protocol. Ministries of Agriculture are usually in charge of the ITPGRFA. It is essential for both of these Ministries to coordinate with each other, along with managers of protected areas, research institutes, genebanks, indigenous peoples and local communities, including farmers, to develop access and benefit sharing mechanisms. The workshop also concluded that benefit sharing is a key area of concern for most users and providers of genetic resources. There is need for awareness raising and capacity building to increase the ability/habits of parties involved in conservation and research using CWR to more proactively identify the kinds of benefits that can be generated and shared as part of R&amp;D impact pathways.</p>
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16) UNEP GEF-5 project in India (2016-2021), ?Mainstreaming agricultural biodiversity conservation and utilization in agricultural sector to ensure ecosystem services and reduce vulnerability? (GEF ID 5137). <sup>[10]</sup>	Based on the national and regional consultation and workshops to identify crucial issues for developing an ABS mechanism, the project plans to develop model agreements for sharing indigenous plant genetic resources and associated traditional knowledge maintained by farmers. It also plans to develop and implement access and benefit sharing agreements that incorporate Free, Prior Informed Consent (FPIC) on mutually agreed terms with farmer communities across the project sites. Workshops have been organized at all the project sites to raise awareness among local institutions, indigenous groups and farming communities on the importance of conserving and utilizing crop biodiversity which will result in ABS. The project team has submitted 298 farmers' varieties for registration and Registration Certificates have been issued for 59 of them. The Indonesia Crop Diversity project will build on the lessons learned of this project, once the Terminal Evaluation is available. The mid-term review of the project recommended that the project elaborate and intensive efforts to develop a model for ABS so that the farming communities get their due benefits of conserving biodiversity. It also recommended that Community Seed Banks should be strengthened by providing lasting storage and drying facilities to enable them to store and exchange quality seeds of land races.
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<sup>[1]</sup> Transforming landscapes and livelihoods: A cross-sector approach to accelerate restoration of Malawi's Miombo and Mopane woodlands for sustainable forest and biodiversity management (GEF ID 10254).

<sup>[2]</sup> <https://www.thegef.org/project/building-capacity-regionally-harmonized-national-processes-implementing-cbd-provisions>

<sup>[3]</sup>

[https://wedocs.unep.org/bitstream/handle/20.500.11822/22411/2820\\_3853\\_4415\\_3801\\_3855\\_2017\\_un\\_vironment\\_gef\\_abs%20portfolio\\_Evaluation%20Synthesis%20Report.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/22411/2820_3853_4415_3801_3855_2017_un_vironment_gef_abs%20portfolio_Evaluation%20Synthesis%20Report.pdf?sequence=1&isAllowed=y)

<sup>[4]</sup> <https://sgp.undp.org/component/countrypages/?view=countrypage&country=1&Itemid=>

<sup>[5]</sup> <https://www.croptrust.org/project/the-crop-wild-relatives-project/>

<sup>[6]</sup> Halewood, M. (editor). 2015. Mutually supportive implementation of the Plant Treaty and the Nagoya Protocol ? A report on ?The International Treaty and the Nagoya Protocol ? A tandem workshop for National Focal Points?. Bioversity International.

[https://cgspace.cgiar.org/bitstream/handle/10568/68387/Mutually\\_Halewood\\_2015\\_new.pdf?sequence=2&isAllowed=y](https://cgspace.cgiar.org/bitstream/handle/10568/68387/Mutually_Halewood_2015_new.pdf?sequence=2&isAllowed=y)

<sup>[7]</sup> <https://www.biodiversityinternational.org/research-portfolio/policies-for-plant-diversity-management/mutual-implementation-of-nagoya-protocol-and-plant-treaty/>

<sup>[8]</sup> <https://www.biodiversityinternational.org/news/detail/mutually-supportive-implementation-of-the-plant-treaty-and-the-nagoya-protocol-in-benin-and-madagasc/>

<sup>[9]</sup> <https://www.biodiversityinternational.org/events/event-view/2022/04/04/products-darwin-initiative-project-year-1/>

<sup>[10]</sup> [https://publicpartnershipdata.azureedge.net/gef/GEFDocuments/31efd613-df7c-e811-8124-3863bb2e1360/MTR/MidtermReviewMTR\\_Final%20MTR%20Report%20Sept.%2015%202021.pdf](https://publicpartnershipdata.azureedge.net/gef/GEFDocuments/31efd613-df7c-e811-8124-3863bb2e1360/MTR/MidtermReviewMTR_Final%20MTR%20Report%20Sept.%2015%202021.pdf)  
[https://alliance.indiaagrobdunepproject.cgiar.org/fileadmin/templates/MainstreamingAgricultural/Uploads/publications/GEF\\_Brochure\\_1-11-2021.pdf](https://alliance.indiaagrobdunepproject.cgiar.org/fileadmin/templates/MainstreamingAgricultural/Uploads/publications/GEF_Brochure_1-11-2021.pdf)

## 7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

The project is aligned with and contributes to several national plans and strategies, including Indonesia's Agriculture Development Strategy (2015-2045), the Indonesia Biodiversity Strategy and Action Plan (IBSAP) and the Nagoya Protocol national report.

Indonesia prepared its first Biodiversity Action Plan in 1993. This was superseded by the Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2003-2020, which made specific reference to the need to conserve Indonesia's unique biodiversity. In 2012, IBSAP 2003-2020 was reviewed to assess its alignment with the National Mid Term Development Plan (RPJMN) and five ministerial strategy plans 2010-2014 (Environment, Forestry, Marine Affairs & Fisheries, and Agriculture and the Indonesian Institute of Science (LIPI)). It also helped Indonesia to align its targets to the Aichi Biodiversity Targets and to support the Strategic Plan for Biodiversity (2011-2020) of the Convention on Biodiversity (CBD). The IBSAP was thus updated to the present IBSAP 2015-2020<sup>[1]</sup>, which aims to mainstream the management of biological resources into the country's development plan documents. National Target 16 supports the implementation of the Nagoya Protocol and its derivative instruments through legislation and the formation of implementation organizations at the central and local levels. This project will contribute to the IBSAP's policy framework and mission to: i) improve ownership and utilization of Indonesian biodiversity; ii) use biodiversity to improve livelihoods; iii) sustainably manage biodiversity. It will also support the implementation of several of the targets of the IBSAP relating to data management and documentation of biodiversity, biodiversity utilization, maintenance and preservation of biodiversity, and capacity building.

Further, Indonesia's fifth National Report to the CBD<sup>[2]</sup> outlines the key targets that are being pursued at the national level. This project will directly or indirectly contribute to some of these targets outlined in the table below.

National Targets	How the project will support the achievement of each target
<b>NT1:</b> Awareness and participation of various parties established through formal and informal education programs	The project will enhance the capacity of stakeholders through community participation for improving agrobiodiversity management. It will improve the awareness of the Indonesian people within the project sites and beyond to protect and conserve Indonesia's unique agrobiodiversity. Further, it will build the capacity of all stakeholders (including custodian farmers, protected areas' managers, breeders, extension services, and other land managers) to use effective integrated conservation approaches ( <i>in situ</i> /on farm) and use target Indonesian crops in a sustainable manner.
<b>NT2:</b> Implementation of sustainable management of biodiversity resources in the planning and implementation of national and regional development to improve community economies	The project will develop a National Strategy and Action Plan (NSAP) for the conservation of priority Indonesian crop wild relatives (CWR), led by a multi-stakeholder and cross-sectoral committee and working group

National Targets	How the project will support the achievement of each target
<b>NT3:</b> Realization of incentives and disincentives system in business and the sustainable management of biological resources	The project will identify good practices and incentive mechanisms for the <i>in situ/on farm</i> conservation and use of CWR and landraces (LRs)
<b>NT7:</b> Improved sustainably managed land for agriculture, plantations and animal husbandry	The project will contribute to this target by promoting the use of traditional varieties of target crops that provide a whole range of benefits for the sustainability of the agricultural production system
<b>NT12:</b> Realization of efforts to maintain the populations of endangered species as a national conservation priority	The key expected outcome of this project is that CWR and landraces of target Indonesian crops will be effectively safeguarded within an integrated conservation and use system to halt genetic erosion and contribute to national and global food and nutrition security in the face of climate change.
<b>NT15:</b> Realization of conservation and restoration of degraded ecosystems in the region	This project will contribute to establishing at least 5 genetic reserves in identified CWR and LR hotspots areas in Indonesia and develop management plans for the effective conservation of CWR populations and the restoration of their ecosystems
<b>NT16:</b> Implementation of the Nagoya Protocol and its derivative instruments through legislation and institutions at the central and local levels	The project will directly contribute to this target by strengthening institutions and systems needed to implement the Nagoya Protocol. It will also strengthen national regulatory frameworks and clarify institutional responsibilities and administrative mechanisms for Access and Benefit Sharing (ABS) agreements while enhancing the understanding of the ABS regime
<b>NT17:</b> Implementation of the new IBSAP at various levels	Project activities will contribute to the development of the new IBSAP with regard to agrobiodiversity, while project results will be used to report to the CBD on Indonesia's progress towards its national and international commitments



National Targets	How the project will support the achievement of each target
<b>NT21:</b> Implementation of comprehensive and integrated data gathering and information mapping on biodiversity	Under Component 4, the project will collect, document and disseminate information and knowledge of social, cultural, economic, research and marketing nature related to the target crops from the project sites and thus contribute to this National Target. It will further establish an information system for monitoring changes in wild populations of priority CWR species to capture data generated in Component 2 of the project.

The project also supports the implementation of Indonesia's National Medium-Term Development Plan (RPJMN 2020-2024), where the government has integrated 118 of the 169 global SDG targets. Particularly, the project will contribute towards the achievement of pillar 4 of the RPJMN, which aims to achieve the conservation of biodiversity. The project also strongly aligns with Indonesia's Agricultural Strategy for 2020-2024, particularly the targets and indicators linked to increasing the competitiveness of agricultural commodities and genetic resources with a strong emphasis on traditional knowledge (SS2); and the use of environmental-friendly technology and agricultural innovations, particularly for the benefit of farmers (SS4); and building the capacity of stakeholders at all levels to conserve and sustainably use these genetic resources (e.g. ecotourism, ABS etc.) (SS7). By partnering with the Ministry of Village Development, of Disadvantaged Regions and Transmigration (MoVDDRT), the project would also contribute to translating the sustainable development goals (SDGs) at the village level to foster rural development. At the national level, policies exist that support the work of the Ministry such as the guidelines for the development of disadvantaged areas contained in Ministerial regulation PDDT 21/2020 particularly articles 79 and 80 that focus on capacity building and knowledge transfer and Ministerial regulation PDDT 13/2020 which regulates the creation of village funds.

The project is also in line with FAO's Country Programming Framework (CPF) 2021 - 2025 for Indonesia. It is aligned with Strategic Priority 2: Sustainable and inclusive production and consumption patterns and supply chains, and Outcome 2: Public institutions and private sector value chain actors having an increased capacity to design and implement inclusive and efficient agri-food systems, along with the adoption of improved and innovative production, processing and marketing technologies and practices, that sustain improved food security and nutrition and increased (gender-sensitive) income generating and employment creation opportunities for vulnerable rural people. It is particularly aligned to Output 2.1 Crop Diversification and Promotion of Innovative Technologies and Practices. Furthermore, the project will also contribute to Asia Pacific Regional Initiative/Priority Area: Biodiversity, Sustainable Agriculture, Asia and the Pacific's Regional Initiatives on Zero Hunger.

Finally, the project will contribute to several global targets including the Global Strategy for Plant Conservation<sup>[1]</sup>, the priority actions of FAO's Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture<sup>[2]</sup> and the strategic priorities of FAO's First Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources<sup>[3]</sup>, all of which relate to the conservation of socio-economically important wild plants and trees ensuring their availability to support nutrition, health, food security and livelihoods, among other ecosystem services.

<sup>[1]</sup> <https://www.cbd.int/gspc/strategy.shtml>

<sup>[2]</sup> <https://www.fao.org/plant-treaty/tools/toolbox-for-sustainable-use/details/en/c/1178148/>

<sup>[3]</sup> <https://www.fao.org/policy-support/tools-and-publications/resources-details/en/c/469497/>



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[1] <http://faolex.fao.org/docs/pdf/ins176625.pdf>

[2] <https://www.cbd.int/doc/world/id/id-nr-05-en.pdf>

## 8. Knowledge Management

**Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.**

Knowledge management in the project will be centred on (1) generating and documenting evidence of the benefits of and good practices for conserving and sustainably using the target crops, (2) effectively communicating this evidence to diverse stakeholder groups based on their information needs and capacities, and (3) promoting an enabling environment for scaling up good practices and approaches identified during the project. Together, these approaches are aimed at mainstreaming conservation and sustainable use of the target crops across policy and practice.

The project includes four main mechanisms for fostering learning and sharing among key stakeholder groups:

1. A cross-sectoral policy platform (Component 1)
2. A multi-stakeholder platform to support the conservation of and access to the target crops (Component 2)
3. Information systems, knowledge platforms and knowledge products for documenting diversity and making information about this diversity widely available to support decision making and action (Components 2, 3 and 4)
4. Capacity development programmes that build on the project's needs assessments and the newly generated knowledge, and support the improvement of knowledge, skills and behavioural changes to help achieve the project's broader goals (Components 1, 2 and 3).

The cross-sectoral policy platform will drive the mainstreaming of conservation and sustainable use of crop diversity in policy and strategy. Terms of reference, implementation guidelines, members and monitoring indicators for the platform will be identified so that they promote active participation and equal opportunities for decision making across sectors and stakeholder groups. The platform will develop and lead the implementation of a mainstreaming action plan to build capacity and awareness of policy options and mainstreaming tools. Trainings, policy events and dialogues will be organised, and champions identified to share and discuss best practices, experiences and lessons learned on mainstreaming agrobiodiversity conservation and sustainable use across sectors and scales. The results will be synthesised as guidelines and recommendations for mainstreaming the conservation and sustainable use of the target crops in national, provincial and local development strategies and plans.

The purpose of the multi-stakeholder platform is to support access to and exchange of seeds and planting materials to diverse stakeholders for sustainable and enhanced use. The platform will include the national agricultural genebank, national and provincial agencies, universities, private sector actors and civil society representatives. The platform will build on the results of the project activities and the needs and experiences of the stakeholder groups to develop a national strategy and action plan for *in situ* conservation of target/priority PGFRA.

Under Component 4, information systems will be established to make available information on the target PGFRA, enable documenting changes to this diversity, and support conservation priority setting and action planning for sustainable use. The systems will include information on the distribution of and threats to farmer varieties and priority CWR, hotspots of diversity, genetic resources available in collections, characterisation of varieties, production, processing and uses. The information systems and related knowledge management platforms will be developed in collaboration with key agencies and other national data holders and will be based on collaborative agreements for information access and sharing. The project will promote other knowledge sharing mechanisms such as through the multi-stakeholder network established under Output 2.4, as well as farmer associations, which could act as

knowledge hubs for the transmission of both modern and traditional knowledge on the target crops. With regard to traditional knowledge, any documentation of TK will duly follow the provisions of the Nagoya Protocol as well as the FPIC principles outlined in FAO's FPIC Manual. The utilization and exchange of traditional knowledge will be guided by community agreements and Community Biocultural Protocols where appropriate. Example information material and communication tools divided by target group/audience are provided in Table 2 below.

**Table 2.** Communication tools and channels by target group/audience

<b>Target audience</b>	<b>Main Channels</b>
<b>Relevant line ministries (e.g., Agriculture, Environment) and Research Agencies</b>	<ul style="list-style-type: none"> <li>? Project Platform</li> <li>? Newsletters</li> <li>? National meetings</li> <li>? Brochures, information sheets</li> <li>? Face-to-face (F2F) meetings</li> <li>? Scientific symposia</li> <li>? Trainings</li> <li>? Scientific publications</li> <li>? Thematic seminars</li> <li>? Policy briefs</li> </ul>
<b>Internal project partners and actors</b>	<ul style="list-style-type: none"> <li>? Email (email group)</li> <li>? F2F meetings and workshops</li> <li>? Virtual meetings</li> <li>? Website (tools and resources in particular)</li> <li>? Partner websites and blogs</li> </ul>
<b>Regional and International Organizations</b>	<ul style="list-style-type: none"> <li>? Email (email group)</li> <li>? F2F meetings and workshops</li> <li>? Virtual meetings</li> <li>? Platform (tools and resources in particular)</li> <li>? Blogs, success stories and lessons learned provided to websites and other media</li> </ul>
<b>Universities and Faculties, academic audience</b>	<ul style="list-style-type: none"> <li>? Project platform</li> <li>? F2F meetings and personal outreach</li> <li>? One-to-one email communication</li> <li>? Exchange visits</li> <li>? University alumni networks</li> <li>? University exhibitions</li> <li>? University curricula</li> <li>? Trainings</li> <li>? Scientific publications</li> <li>? Thematic seminars/workshops</li> </ul>
<b>NGOs and relevant NUS/nutrition working groups</b>	<ul style="list-style-type: none"> <li>? Project platform</li> <li>? Newsletters</li> <li>? National meetings involving media and policy makers</li> <li>? Participatory local workshops</li> <li>? Training/support to extension services</li> <li>? Brochures, information sheets</li> <li>? F2F contacts</li> <li>? Symposia</li> <li>? Rural Radio Programs</li> <li>? Policy briefs</li> <li>? Field and food fairs</li> <li>? Brochures and fact sheets</li> <li>? University/NARS exhibitions</li> </ul>

<b>Private sector</b>	<ul style="list-style-type: none"> <li>? Website</li> <li>? F2F through personal networks</li> <li>? Meetings and Symposia</li> <li>? Newsletters</li> </ul>
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Knowledge products and capacity development programmes will be based on gender-responsive needs assessment of diverse stakeholders, and the subsequent development of a communication strategy. Knowledge products will include good practice manuals and guidelines on *in situ* and on-farm conservation for extension agents and protected area managers, results of pilots with incentive mechanisms and recommendations for their use, sustainable production of target species, processing and marketing guidelines as well as traditional and modern recipes to inspire wider use of the target crop diversity. Training programmes under Components 2 and 3 will target national and provincial agencies, public and private sector extension officers, agricultural groups, processors, value chain actors, protected area and other land managers, and researchers, to support the adoption and adaptation of project results into practice under diverse socio-ecological contexts. Information campaigns for segments of the general public will be designed and implemented at national to local levels, focusing on themes such as crop diversity, nutrition and cultural heritage. Training and communication plans will explicitly consider gender and social inclusion in terms of target audiences and the relevance of key messages, communication channels and language for them.

The project will actively participate in relevant local, national and international networks, exchanges, conferences and trainings, both to learn from good practices and latest research in other initiatives and countries, and to share the approaches, findings and lessons learned from this project. This can include participation to international events and activities organized by the Convention on Biological Diversity, the FAO and regional networks on conserving Crop Wild Relatives (e.g., by the ASEAN community). In terms of conserving the wild relatives of nutmeg and cloves, the project will collaborate with the Asia Pacific Forest Genetic Resources Programme (APFORGEN) that develops methods for and carries out analyses of native species? distributions and threats, and reports of its activities to the Asia Pacific Forestry Commission.

The Project will ensure gender balance within project activities including workshops and meetings attendance, prioritisation activities, policy development, field surveys, awareness raising and other events. Gender will be a key issue in the establishment and governance of the regional network and access and benefit sharing of *in situ* genetic resources. The project will take account of gender differentiation by encouraging equal representation of women and men at key events and trainings. The issue of gender will also be explicitly cited in the communication plan to highlight the importance of gender equality. Specific policy briefs on the conservation of CWR and the roles of men and women will be articulated. Moreover, the project will engage with both men and women farmers in promoting the conservation and use of CWR.

The relevant KM budget and key deliverables are shown below.

Deliverable	Timeline	Budget (USD)
1. Knowledge Management and M&E Specialist (50%)	Years 1-5	60,000
2. Service provider to support communications and publication tasks, organize national/regional knowledge management events, editing services, etc. (Outputs 4.2 and 4.3)	Years 2-5	52,000
3. Knowledge management events, including production of audio-visuals (Output 4.3)	Years 2-5	40,000
4. High level dissemination events (2 national/regional workshops/conferences on project theme (Output 4.3)	Years 3-4	40,000
5. Publications/Training material (Outputs 2.2, 3.3 and 4.2)	Years 2-5	50,000
6. Publications of comms material (e.g. flyers, brochures, signboards) for events/information campaigns (Outputs 3.4 and 4.3)	Years 2-5	42,184

## 9. Monitoring and Evaluation

### Describe the budgeted M and E plan

1. The project results, as outlined in the project results framework (Annex A1), will be monitored regularly, reported annually and assessed during project implementation to ensure the project effectively achieves these results. Monitoring and evaluation activities will follow FAO and GEF's policies and guidelines for monitoring and evaluation. The M&E system will also facilitate learning, replication of the project's results and lessons which will feed the project's knowledge management strategy.

### Monitoring Arrangements

2. Project oversight and supervision will be carried out by the Budget Holder (BH) with the support of the Project Task Force (PTF), Lead Technical Officer (LTO) and Funding Liaison Officer (FLO) and relevant technical units in FAO headquarters. Oversight will ensure that: (i) project outputs are produced in accordance with the project results framework and leading to the achievement of project outcomes; (ii) project outcomes are leading to the achievement of the project objective; (iii) risks are continuously identified and monitored and appropriate mitigation strategies are applied; and (iv) agreed project global environmental benefits / adaptation benefits (*specify as appropriate*) are being delivered.

3. The FAO-GEF Coordination Unit and HQ Technical units will provide oversight of GEF financed activities, outputs and outcomes largely through the annual Project Implementation Reports (PIRs), periodic backstopping and supervision missions.

4. Day-to-day project monitoring will be carried out by the Project Management Unit (PMU)/Operational Partner (OP). Project performance will be monitored using the project results matrix, including indicators (baseline and targets) and annual work plans and budgets. At inception phase, the results matrix will be reviewed to finalize the identification of i) outputs ii) indicators iii) targets and iv) any missing baseline information

5. A detailed M&E plan, which builds on the results matrix and defines specific requirements for each indicator (data collection methods, frequency, responsibilities for data collection and analysis, etc) will also be developed during project inception by the PMU's/OP's Knowledge Management and M&E Specialist.

The timeline of key M&E activities, a budget, and roles and responsibilities are presented in the table below.

Type of M&E Activity	Responsible Parties	Timeframe	Budget (USD)
Inception workshop	Project Management Unit (PMU)/ Operational Partner (OP)	Within two months of OPA signature	20,000
Inception workshop report	PMU/OP	1 month after inception workshop	Knowledge Management and M&E Specialist 60,000

Measurement of project indicators (outcome, progress and performance indicators) including baseline data collection and regular M&E surveys	PMU/OP	Outcome indicators: start, mid- and end of project progress/performance. Indicators: annually	Covered by above
Project Progress Report (PPR)	PMU/OP, LTO/BH	Within 1 month of the end of the reporting period, i.e., on or before 31 January and 31 July of every year	Covered by above
Project Implementation Review reports (PIRs)	PMU/OP, LTO/BH	Annually in July	Covered by above
Project Steering Committee (PSC) meetings	National Project Coordinator (NPC), PMU/OP	Once a year minimum	37,500
Monitoring visits to field sites (M&E missions)	PMU/OP, ICABIOGRD and MoEF	Annually	Budgeted under Components
Mid-term Review	BH	At mid-point of project implementation (3 <sup>rd</sup> quarter of project year 3)	50,000
Terminal evaluation	The BH will be responsible to contact the Regional Evaluation Specialist (RES) within six months prior to the actual completion date (NTE date). The RES will manage the decentralized independent terminal evaluation of this project under the guidance and support of OED.	To be launched within six months prior to the actual project completion date	53,450
Project Terminal Report	PMU/OP, BH, LTO	Two months before the end date of the project	6,550
<b>Total M&amp;E</b>			<b>227,500</b>

### Monitoring and Reporting

6. In compliance with FAO and GEF M&E policies and requirements, the PMU/OP, in consultation with the Project Steering Committee (PSC) and PTF will prepare the following i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) annual Project Implementation Review (PIR); (v) Technical Reports; (vi) co-financing reports; and (vii) Terminal Report. In addition, the Core Indicators included in Annex A1 will be used to monitor Global Environmental Benefits and updated regularly by the PMU/OP.

7. **Project Inception Report.** A project inception workshop will be held within two months of project start date and signature of relevant agreements with partners. During this workshop the following will be reviewed and agreed:

? The proposed implementation arrangement, the roles and responsibilities of each stakeholder and project partners;

- ? An update of any changed external conditions that may affect project implementation;
- ? The results framework, the SMART indicators and targets, the means of verification, and monitoring plan;
- ? The responsibilities for monitoring the various project plans and strategies, including the risk matrix, the Environmental and Social safeguards and Management Plan, the gender strategy, the knowledge management strategy, and other relevant strategies;
- ? Finalize the preparation of the first year AWP/B, the financial reporting and audit procedures;
- ? Schedule the PSC meetings;
- ? Prepare a detailed first year AWP/B.

8. The PMU/OP will draft the inception report based on the agreement reached during the workshop and circulate among PSC members, BH, LTO and FLO for review within one month. The final report will be cleared by the FAO BH, LTO and the FAO GEF Coordination Unit and uploaded in FAO's Field Program Management Information System (FPMIS) by the BH.

9. **Results-based Annual Work Plan and Budget (AWP/B).** The draft of the first AWP/B will be prepared by the PMU/OP in consultation with the FAO Project Task Force and reviewed at the project Inception Workshop. The Inception Workshop inputs will be incorporated and subsequently, the PMU/OP will submit a final draft AWP/B to the BH within two weeks after the workshop. For subsequent AWP/B, the PMU/OP will organize a project progress review and planning meeting for its progress review and adaptive management. Once PSC comments have been incorporated, the PMU/OP will submit the AWP/B to the BH for non-objection, LTO and the FAO GEF Coordination Unit for comments and for clearance by BH and LTO prior to uploading in FPMIS by the BH. The AWP/B must be linked to the project's Results Framework indicators to ensure that the project's work and activities are contributing to the achievement of the indicators. The AWP/B should include detailed activities to be implemented to achieve the project outputs and output targets and divided into monthly timeframes and targets and milestone dates for output indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The AWP/B should be approved by the Project Steering Committee, LTO, BH and the FAO GEF Coordination Unit, and uploaded on the FPMIS by the BH.

10. **Project Progress Reports (PPR):** The PPRs are used to identify constraints, problems or bottlenecks that impede timely implementation and to take appropriate remedial action. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the Project Results Framework (Annex A1), AWP/B and M&E Plan. Each semester the National Project Manager (NPM) will prepare a draft PPR, will collect and consolidate any comments from the FAO PTF. The NPM will submit the final PPRs to the FAO Representation in Indonesia every six months, prior to 31 July (covering the period between January and June) and before 31 January (covering the period between July and December). The July-December report should be accompanied by the updated AWP/B for the following Project Year (PY) for review and no-objection by the FAO PTF. The Budget Holder has the responsibility to coordinate the preparation and finalization of the PPR, in consultation with the PMU/OP, LTO and the FLO. After LTO, BH and FLO clearance, the FLO will ensure that project progress reports are uploaded in FPMIS in a timely manner.

11. **Annual Project Implementation Report (PIR):** The PIR is a key self-assessment tool used by GEF Agencies for reporting every year on project implementation status. It helps to assess progress toward achieving the project objective and implementation progress and challenges, risks and actions that need to be taken. Under the lead of the BH, the NPM will prepare a consolidated annual PIR report covering the period July (the previous year) through June (current year) for each year of implementation, in collaboration with national project partners (including the GEF OFP), the Lead Technical Officer, and the FLO. The NPM will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission and report these results in the draft PIR.

12. The BH will be responsible for consolidating and submitting the PIR report to the FAO-GEF Coordination Unit for review by the date specified each year. The FAO-GEF Funding Liaison Officer (FLO) reviews the PIR and discusses the progress reported with the BH and LTO as required. The BH will submit the final version of the PIR to the FAO-GEF Coordination Unit for final approval. The FAO-GEF Coordination Unit will then submit the PIR to the GEF Secretariat as part of the Annual Monitoring Review of the FAO-GEF portfolio.

13. **Technical Reports:** Technical reports will be prepared as part of project outputs and to document and share project outcomes and lessons learned. The LTO will be responsible for ensuring appropriate technical review and clearance of technical reports. Copies of the technical reports will be distributed to project partners and the Project Steering Committee as appropriate.

14. **Co-financing Reports:** The PMU/OP will be responsible for tracking co-financing materialized against the confirmed amounts at project approval and reporting. The co-financing report, which covers the GEF fiscal year 1 July through 30 June, is to be submitted on or before 31 July and will be incorporated into the annual PIR. The co-financing report needs to include the activities that were financed by the contribution of the partners.

15. **Tracking and reporting on results across the GEF 7 core indicators and sub-indicators:** As of July 1, 2018, the GEF Secretariat requires FAO as a GEF Agency, in collaboration with recipient country governments, executing partners and other stakeholders to provide indicative, expected results across applicable core indicators and sub-indicators for all new GEF projects submitted for Approval. During the approval process of the 'Crop Diversity Conservation for Sustainable Use in Indonesia' project, expected results against the relevant indicators and sub-indicators were provided to the GEF Secretariat. Throughout the implementation period of the project, the PMU/OP is required to track the project's progress in achieving these results across applicable core indicators and sub-indicators. At project mid-term and project completion stage, the project team in consultation with the PTF and the FAO-GEF Coordination Unit are required to report achieved results against the core indicators and sub-indicators used at CEO Endorsement.

16. **Terminal Report:** Within two months before the end date of the project, and one month before the Terminal Evaluation, the PMU/OP will submit to FAO Headquarters a draft Terminal Report. The main purpose of the Terminal Report is to give guidance at ministerial or senior government level on the policy decisions required for the follow-up of the project, and to provide the donor with information on how the funds were utilized. The Terminal Report is accordingly a concise account of the main products, results, conclusions and recommendations of the project. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for insuring sustainability of project results.

### **MTR and Evaluation provisions**

17. **Mid-Term Review:** As outlined in the GEF Evaluation Policy, Mid-Term Reviews (MTRs) or mid-term evaluations (MTEs) are mandatory for all GEF-financed full-sized projects (FSPs). The Mid-Term review will (i) assess the progress made towards achievement of planned results (ii) identify problems and make recommendations to redress the project (iii) highlight good practices, lessons learned and areas with the potential for upscaling.

18. The Budget Holder is responsible for the conduct of the MTR of the project in consultation with the FAO-GEF Coordination Unit halfway through implementation. He/she will contact the FAO-GEF Coordination Unit about 3 months before the project half-point (within three years of project CEO Endorsement) to initiate the MTR exercise.

19. To support the planning and conduct of the MTR, the FAO GEF Coordination Unit has developed a guidance document 'The Guide for planning and conducting Mid-Term Reviews of FAO-GEF projects and programmes'. The FAO-GEF Coordination Unit will appoint an MTR focal point who will provide guidance on GEF specific requirements, quality assurance on the review process and



overall backstopping support for the effective management of the exercise and for timely the submission of the MTR report to the GEF Secretariat.

20. After the completion of the Mid-Term Review, the BH will be responsible for the distribution of the MTR report at country level (including to the GEF OFP) and for the preparation of the **Management Response** within 4 weeks and share it with national partners, GEF OFP and the FAO-GEF CU. The BH will also send the updated core indicators used during the MTR to the FAO-GEF CU for their submission to the GEF Secretariat.

21. **Terminal Evaluation:** The GEF evaluation policy foresees that all Medium and Full-sized projects require a separate terminal evaluation. Such evaluation provides: i) accountability on results, processes, and performance ii) recommendations to improve the sustainability of the results achieved and iii) lessons learned as an evidence-base for decision-making to be shared with all stakeholders (government, execution agency, other national partners, the GEF and FAO) to improve the performance of future projects.

22. The Budget Holder will be responsible to contact the **Regional Evaluation Specialist (RES)** within six months prior to the actual completion date (NTE date). The RES will manage the decentralized independent terminal evaluation of this project under the guidance and support of OED and will be responsible for quality assurance. Independent external evaluators will conduct the terminal evaluation of the project taking into account the 'GEF Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full-sized Projects'. FAO Office of Evaluation (OED) will provide technical assistance throughout the evaluation process, via the OED Decentralized Evaluation Support team. In particular, it will also give quality assurance feedback on: selection of the external evaluators, Terms of Reference of the evaluation, draft and final report. OED will be responsible for the quality assessment of the terminal evaluation report, including the GEF ratings.

23. After the completion of the terminal evaluation, the BH will be responsible to prepare the management response to the evaluation within 4 weeks and share it with national partners, GEF OFP, OED and the FAO-GEF CU. The BH will also send the updated core indicators used during the TE to the FAO-GEF CU for their submission to the GEF Secretariat.

## **Disclosure**

24. The project will ensure transparency in the preparation, conduct, reporting and evaluation of its activities. This includes full disclosure of all non-confidential information, and consultation with major groups and representatives of local communities. The disclosure of information shall be ensured through posting on websites and dissemination of findings through knowledge products and events. Project reports will be broadly and freely shared, and findings and lessons learned made available.

## **10. Benefits**

**Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?**

The number of direct beneficiaries that will benefit from the GEF investment are 20,110 of which half will be women, and an estimated 10% will be Masyarakat Adat. As described above, the project will also aim to engage youth as beneficiaries.<sup>[1]</sup> More detailed socio-economic surveys will be conducted as part of Output 2.1 on Masyarakat Adat and local communities in the project sites, including in relation to gender and youth.<sup>[2]</sup> Activities will be defined in more detail with Masyarakat Adat and local communities in line with the free, prior and informed (FPIC) process described in Annex G and Annex J. By establishing strategic partnerships at the national level, the project will foster improved collaboration and working partnerships among stakeholders within the agriculture and environment sectors (e.g., breeders, agronomists, natural resource managers, farmers, genebank managers and



policy makers), but also within other relevant sectors such as health, social development and education. This will help conserve and unlock novel genetic diversity contained within target crops and CWR populations, making them available and accessible for markets as well as for crop improvement purposes thereby benefiting farmers, breeders and consumers region wide. Given its focus on conserving unique biodiversity, the project will have positive social, health and environmental impacts. By integrating biodiversity in agricultural production practices in ecologically sensitive areas, the project will help to preserve or restore degraded ecosystems, increase the resilience of agricultural landscapes helping to buffer against climate change impacts.

At the national level, scientists, researchers, development practitioners and policy makers are also among the beneficiaries in terms of participation, knowledge generation, networking, and partnerships. The project will provide a proof of concept which can be used and scaled-up for other threatened and globally unique plant genetic resources and their wild relatives by mainstreaming biodiversity and the promotion of sustainable management practices. Project outcomes are also expected to influence national policy and other relevant initiatives in this regard.

At the local level, the project will have positive social, health and environmental impacts on communities, women, families, households, and farmers residing and earning a living in the project areas. The project's outcomes will enhance the ability of target communities to manage their production systems sustainably; while strengthening markets for diversified food products made with the target crops and supporting greater access to markets can strengthen livelihoods and improve local economies. The strong focus of the project on promoting community-alliances coupled with project focus on institutions and governance, capacity building and social inclusion at all levels will guarantee participation of socio-economically marginalized groups and individuals, including women, youth and Masyarakat Adat, in decision making process as well as ensure more equitable distribution of income from marketing (also see section [3. Gender Equality and Women's Empowerment](#)). Furthermore, by integrating nutritious and climate-smart target crops in smallholder farming systems, the project will contribute to the improved health and well-being of beneficiaries living in the target areas including improved food security and nutrition. Planted on farm and conserved in forests, the target species will also contribute to increasing the resilience of production systems against climate change impacts.

Target groups and beneficiaries include male and female farmers, farmer groups/cooperatives and private and public sector groups involved in value chains; youth in rural areas; key policy and decision makers from relevant ministries, line departments and other agencies. Women are an important target group as they play key roles in cultivating and processing the target crops and in making consumption choices for their households.

The project anticipates that the enhanced value chains and market incentives will result in a 10% increase in income of at least 200 farmers (of which at least 50% women, 10% Masyarakat Adat).

An overview of the main socio-economic benefits is provided in the table below.

	<b>Individual</b>	<b>Local</b>	<b>National</b>
Collaboration across sectors		X	X
Enhanced policy and regulatory environment for biodiversity with nutritional and climate smart qualities			X
National planning of agriculture, health and food security strategies gives more prominence to biodiversity			X
Greater diversity of target crops and CWR made available to farmers and breeders	X	X	X
Biodiversity mainstreamed, conserved and utilized, including the knowledge associated with it	X	X	X
Increased land area planted with target crops	X	X	X
Increased production and income from the growing and marketing of the target crops	X	X	X

Knowledge and information on target crops made accessible to broad audience	X	X	X
Enhanced awareness of nutritional potential of target crops and agrobiodiversity in general	X	X	X

In terms of breeding, it is important to clarify that Crop Wild Relatives (CWR) are of limited use to farmers in the short term. The benefits to farmers from CWR conservation are longer term, through the identification of beneficial traits in CWR and their use by breeders (including in farmer participatory breeding) in producing improved crop cultivars that can then either be grown by farmers directly or crossed with farmers' indigenous landraces, or elite varieties, to improve the latter's characteristics, thereby improving farmers' nutrition and income.

So, although there may not be immediate short-term direct benefits to farmers in conserving CWR diversity, they can obtain 'public good' benefits from the project by providing a CWR conservation service and receiving support through a benefit-sharing mechanism. This will be addressed in Output 2.1 of the project.

The project will make available and accessible greater diversity of CWR species for crops of importance to food security in Indonesia to breeders. Breeders will use the additional CWR diversity in developing varieties that will contribute to the long-term security in the country and beyond, including to farmers that provide such a service. Farmers and their communities will be the ultimate beneficiaries. The clarification of the project strategy has been reflected in the narrative of the full proposal as well as in the log-frame.

<sup>[1]</sup> See also *Section 5. Risks*.

<sup>[2]</sup> Note: Internationally, youth is typically defined as age group between 15-24 years. The Youth Law of Indonesia (Law N° 40/2009) defines youth as 16-30 years old, while the statistical definition is 15-29 years old. The project will aim to collect age- (and sex-) disaggregated data where feasible. Please refer to *Section 5. Risks* for more details.

## 11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

### Overall Project/Program Risk Classification\*

PIF	CEO Endorsement/Approval	MTR	TE
High or Substantial			

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any

measures undertaken as well as planned management measures to address these risks during implementation.

All project activities are geared towards the conservation and sustainable use of Indonesia's globally significant crop diversity, in the wild and on-farm, through sustainable practices and improved capacities, as well as strengthened enabling environment, and the development of long-term incentive mechanisms. This implies that there is low risk for any adverse environmental impacts, that could be attributed to the project, other than other environmental impacts caused by adverse climatic changes or extreme weather or geological events, which are beyond the control of the project interventions. Further, there is low risk of any social and cultural impact as the intention is to promote the conservation and use of traditional crop varieties and crop wild relatives that are central to the livelihood strategies of many farmers and communities in Indonesia. Nevertheless, the project is considered high risk due to the presence of indigenous peoples/Masyarakat Adat in the project sites, and because it involves access and use of plant genetic resources. A summary of the main risks and associated mitigation measures is provided below.

E&S Risks and Impacts	Mitigation measures	Responsible	Cost	Timeline
<b>ESS 2: Biodiversity, Ecosystems and Natural Habitats</b>				
Currently, it is not foreseen that the project will be implemented in protected areas. Nevertheless, if significant populations of the targeted CWR are found within protected areas during the more detailed surveys to be carried out during implementation, their inclusion in the target area under Core Indicator 1, as well as the genetic reserves will be considered.	In case of inclusion of protected areas in the project site, a more detailed (site-specific) environmental and social risk analysis would be carried out.	PMU, LTO	See Annex J for details	Years 1-3
<b>ESS 3: Plant Genetic Resources for Food and Agriculture</b>				

E&S Risks and Impacts	Mitigation measures	Responsible	Cost	Timeline
<p>Access and benefit sharing ? The project will assist local communities in benefiting from their local genetic resources and associated traditional knowledge. There is a risk that ABS and FPIC principles are not properly followed. Provisions to ensure compliance with ABS and FPIC principles and mitigate any risks associated with access and use of genetic resources are incorporated into the project's work plan (Annex G) and Annex J. Furthermore, the project will help strengthen implementation of ABS in Indonesia.</p>	<p>For plant genetic resources for food and agriculture (PGRFA) falling under the Multilateral System of Access and Benefit-sharing (MLS) of the <b>International Treaty on Plant Genetic Resources for Food and Agriculture (Treaty)</b>, the project will comply with the provisions of the Treaty, in particular those related to farmers' rights and Standard Material Transfer Agreement (SMTA).</p> <p>For genetic resources other than PGRFA falling under the Treaty, the project will ensure that provisions of the <b>Nagoya Protocol</b> and associated national legislation and regulations will be duly followed with regard to access and benefit sharing. In particular, the project will, in case of access to genetic resources for their utilization:</p> <ol style="list-style-type: none"> <li>1. Ensure that benefits arising from the utilization of the genetic resources as well as subsequent applications and commercialization</li> </ol>	PMU, LTO	<p>See Annex J for details</p> <p>Additional budget is included in capacity building budget under Output 1.3</p>	Throughout project

E&S Risks and Impacts	Mitigation measures	Responsible	Cost	Timeline
<b>ESS 5: Pest and Pesticides Management</b>				
n/a	Procurement of chemical fertilizers and pesticides will not be allowed under the project.	PMU, LTO	n/a	n/a
<b>ESS 7: Decent Work</b>				

E&S Risks and Impacts	Mitigation measures	Responsible	Cost	Timeline
<p>The project is anticipated to have a direct, positive impact on the livelihoods of project beneficiaries, including Masyarakat Adat and the rural poor. The project will ensure that any risks of perpetuating poverty and inequality through its interventions are avoided.</p>	<p>Through its interventions under Components 2 and 3, the project will support decent work and rural employment for Masyarakat Adat and local communities. Women, the poor and other vulnerable social groups, as well as youth, are among the project's main beneficiaries. Activities will be defined in more detail with Masyarakat Adat and local communities in line with the free, prior and informed consent (FPIC) process described in Annex G and Annex J. Under Output 3.1, the project will undertake a rapid appraisal to identify and assess markets or market niches and opportunities for target species, which will specifically identify barriers and opportunities for women's and youth participation and benefits.</p> <p>As described in the CEO endorsement request, the Ministry of Social Affairs and the Ministry of Women Empowerment and Child</p>	<p>PMU, LTO</p>	<p>No additional costs, covered by activity budget</p>	<p>Throughout the project</p>

E&S Risks and Impacts	Mitigation measures	Responsible	Cost	Timeline
ESS 9: Indigenous Peoples and Cultural Heritage				

E&S Risks and Impacts	Mitigation measures	Responsible	Cost	Timeline
<p>Masyarakat Adat living in the project's target areas have been identified during PPG.</p>	<p>Please refer to separate Annex J for a more detailed analysis as well as mitigation measures. A free, prior and informed consent (FPIC) process will be followed by the project along with the elaboration of <i>Masyarakat Adat</i> Plans in line with FAO requirements. A Masyarakat Adat Expert will be hired by the project to ensure implementation of mitigation measures and enhance opportunities to generate benefits for Masyarakat Adat.</p> <p>As the project is targeting geographical areas traditionally inhabited by Masyarakat Adat and taking into consideration the analysis, recommendations, and mitigation measures described in Annex J, the implementation of the project has to be rated as High Risk and the development of a <i>Masyarakat Adat</i> Plan is required for each of the targeted areas.</p>	<p>PMU, PSUI</p>	<p>See Annex J for details</p>	<p>Year 1 and throughout the project</p>



E&S Risks and Impacts	Mitigation measures	Responsible	Cost	Timeline
Total budget			450,000	

[1] FAO (2014). Genebank Standards for Plant Genetic Resources for Food and Agriculture.

<http://www.fao.org/docrep/019/i3704e/i3704e.pdf>

[2] FAO (2020). FAO Framework on Ending Child Labour in Agriculture.

<http://www.fao.org/3/ca9502en/CA9502EN.pdf>

[3] [https://indonesia.unfpa.org/sites/default/files/pub-pdf/BUKU\\_Monograph\\_No2\\_Youth\\_in\\_Indonesia\\_ENG\\_05\\_Low-res.pdf](https://indonesia.unfpa.org/sites/default/files/pub-pdf/BUKU_Monograph_No2_Youth_in_Indonesia_ENG_05_Low-res.pdf)

#### Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
Annex J Masyarakat Adat, ABS and FPIC_3May2022_clean	CEO Endorsement ESS	
Annex H1 FAO_ES_Screening_Checklist_28Feb2022	CEO Endorsement ESS	
Annex J Masyarakat Adat, ABS and FPIC_28Feb2022	CEO Endorsement ESS	
Annex H2 Stakeholder Engagement Matrix_28Feb2022	CEO Endorsement ESS	
Annex H2 SEM and Grievance Redress Mechanism_28Feb2022	CEO Endorsement ESS	
Climate risk screening	CEO Endorsement ESS	

**ANNEX A: PROJECT RESULTS FRAMEWORK** (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Objective:</b> To strengthen the conservation and sustainable use of globally significant Indonesian crop diversity, in the wild and on-farm, through sustainable practices and improved capacities, as well as strengthened enabling environment and the development of long-term incentive mechanisms	(i) Inclusion of conservation and sustainable use of crop diversity and CWR in national strategies or plans	At baseline, relevant plans and strategies show limited awareness of the benefit and value of crop diversity and CWR for food security and nutrition and climate change adaptation	(i) n/a	(i) At least one politically significant national document drawing attention to the conservation and sustainable use of crop diversity and CWR for food security and nutrition and climate change adaptation endorsed at least at the ministry level	National strategy/ planning document and its endorsement	Cross-sectoral political will exists to mainstream conservation and use of crop diversity across sectors	PMU (including experts and support staff) in collaboration with ICABIO GRD and MOEF
	(ii) Promotion of best practices to conserve and sustainably use the target crops including CWR by relevant Ministries, NGOs and private sector	At baseline, few Ministries, NGOs or private sector bodies consider the deployment of the target crops including CWR	(ii) The project has advocated for the promotion of best practices for the deployment of the target crops including CWR by relevant Ministries, NGOs or private sector	(ii) At least one national agency/ sector routinely promotes best practices to deploy the target crops including CWR by the end of the project	Government, NGO and Private Sector annual reports and websites or other communication channels		PMU in collaboration with ICABIO GRD and MOEF

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(iii) Budgetary support for the conservation and deployment of crop diversity including CWR	At baseline, budgetary allocations for the conservation and deployment of crop diversity including CWR are largely unknown	(iv) Baseline information on current resources and budgetary allocations targeting the conservation and deployment of the target crops including CWR collected	(iv) Increased allocation of resources or budget towards the conservation and deployment of the target crops including CWR by the end of the project	Government annual budget reports (national, provincial or district level)	Relevant ministries support the implementation of the strategies/ action plans developed under Output 1.4 through increased allocation of budgets	PMU in collaboration with ICABIO GRD and MOEF

[illegible]

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b><u>Outcome 1</u></b> Harmonized, cross-sectoral and inclusive policy frameworks support the conservation and sustainable use of globally unique Indonesian plant genetic resources ensuring the continued availability of the target species for long-term <i>in situ</i> conservation	1a. Availability and status of policy recommendations supporting cross-sectoral mainstreaming and conservation of the target crops  1b. Area of landscapes covered by the policies / strategies and plans developed by the project (hectares) (feeds into Core Indicator 4 above)	1a. Limited collaboration between agriculture, environment, food security and other related sectors for the conservation and sustainable use of the target crops  1b. 0	1a. n/a  1b. 118,000 (10% of final target)	1a. At least 1 policy recommendation(s) developed by the project, supporting cross-sectoral mainstreaming and conservation of the target crops is under consideration  1b. 1,180,000 (See separate Excel calculation)	Policy recommendations  Review of policies and plans adopting project-developed guidelines  Government reports from relevant sectors  Project M&E survey	Cross-sectoral political will exists to mainstream conservation and use of the target crops across sectors	ICABIO GRD and MoEF
<b><u>Output.1.1</u></b> Cross-sectoral, inclusive national policy platform for mainstreaming conservation and sustainable use of important plant genetic resources established	1.1: Availability of national cross-sectoral policy platform related to plant genetic resources	No cross-sectoral platform currently exists in Indonesia	1.1: Cross-sectoral national platform is established with clear mandate and TOR and at least 30% female representatives	1.1: Cross-sectoral national platform is established and meets regularly, with at least 30% female representatives	Progress reports  Minutes of platform meetings  Government reports from relevant sectors	Relevant stakeholders in each sector are responsive to identified incentives and benefits of conserving plant genetic resources  Relevant sectors willing to cooperate	ICABIO GRD

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Output 1.2</b> Policy, legal and capacity gap analysis in relation to the conservation and sustainable use of the target crops carried out	1.2: Availability of gap analysis, capacity needs assessment and capacity building action plan, including gender gaps.	No gender responsive policy, legal and capacity gap analysis	1.2: Gap analysis, capacity needs assessment and capacity building action plan are available, including gender gaps	1.2: Gap analysis, capacity needs assessment and capacity building action plan are available, including gender gaps	Gender responsive gap analysis document, capacity needs assessment report, action plan document	Relevant sectors willing to cooperate	ICABIO GRD
<b>Output 1.3</b> Capacity of policymakers at national, provincial and local level to plan and implement policies in support of the target crops enhanced	1.3: Number of policymakers at national, provincial and local levels who received training to plan and implement policies in support of the target crops (sex-disaggregated)	Limited capacity of policymakers at all levels to plan and implement policies in support of the target crops	1.3: At least 20 (50% women)	1.3: At least 50 (50% women)	Training workshop reports with participant lists disaggregated by gender	Willingness of relevant government officials to engage in the trainings	ICABIO GRD and partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b><u>Output 1.4</u></b> Cross-sectoral National Strategy and Action Plan and policy recommendations for the conservation and sustainable use of the target crops developed in line with relevant international instruments, including UNDRIP[2]	1.4 (i): Availability of gender-responsive, cross-sectoral National Strategy and Action Plan  1.4 (ii): Number of gender-responsive policy recommendations for mainstreaming the conservation and sustainable use of the target crops developed	No cross-sectoral strategy and action plan exist for the conservation and sustainable use of the target crops at the national, provincial and/or local level  Limited policies promoting the conservation and sustainable use of the target crops	1.4 (i): National Strategy and Action Plan under development  1.4 (ii): At least 1	1.4 (i): National Strategy and Action Plan developed and submitted for endorsement  1.4 (ii): At least 3	Evidence of National Strategy and Action Plan and policy recommendations at the national, provincial and/or local levels  Project progress reports	Policymakers are open to participate in high level meetings and support the drafting of cross-sectoral plans and strategies	ICABIO GRD and partners

[illegible]



Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Outcome 2</b> CWR and landraces (LRs) of target Indonesian crops are effectively safeguarded within an integrated conservation and use system to halt genetic erosion and contribute to national and global food and nutrition security in the face of climate change	2a. Area covered by genetic reserves (hectares)  2b. Area of cropland/ agroforestry under improved management to benefit biodiversity (hectares)  2c. No. of people (women, men) deploying effective integrated conservation and utilization approaches for target Indonesian crops	Limited knowledge and institutional arrangements undermine the conservation and sustainable use of the target crops for adaptation to global change	2a. 6,500 (10% of final target)  2b. 11,000 (20% of final target)  2c. 5,000 (50% women) (25% of final target)	2a. 65,000  2b. 55,000  2c. 20,000 (50% women)  (See separate Excel calculation)	National reports to global biodiversity conventions  National reports, action plans and strategies  Protected area management plans  Project M&E surveys	Policymakers, planners, private sector, farmer groups and others make use of the available information and integrate it into strategies, plans, programmes targeting the conservation and sustainable use of the target CWR and LR	ICABIO GRD and MoEF in collaboration with national partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Output 2.1</b> The diversity of CWR and LR of target Indonesian crops assessed, mapped and hotspots identified for active <i>in situ</i> and on-farm conservation facilitating access and use of genetic resources while ensuring the respect of FPIC and Masyarakat Adat Plans as outlined in Annex J	2.1a: No. of hotspots/ priority sites identified for active <i>in situ</i> and on-farm conservation of target LRs and CWR	No hotspots identified for active LRs and CWR <i>in situ</i> and on-farm conservation	2.1a: 2 hotspots/ priority sites identified	2.1: 5 hotspots/ priority sites identified	Availability of <i>in situ</i> and on-farm conservation strategies and land use plans		MoEF and ICABIO GRD in collaboration with national partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Output 2.2</b> Capacity of all stakeholder s <sup>[4]</sup> to deploy effective integrated, culturally sensitive and gender-sensitive approaches for <i>in situ</i> /on-farm conservation and use of target Indonesian crops enhanced as per the FPIC processes and Masyarakat Adat Plans (including through establishment of genetic reserves and community nurseries/participatory plant breeding)	2.2: Number of people (women/men) trained on implementing integrated conservation approaches for the target crops (by stakeholder group, sex-disaggregated data)  2.2b: No. of genetic reserves established and management plans developed  2.2c: No. of community nurseries/participatory plant breeding established	Limited capacity of target stakeholders to deploy integrated conservation approaches and to use the target crops	2.2a: 30 (50% women)  2.2b: At least 1  2.2c: At least 1	2.2a: 60 (50% women)  2.2b: 5  2.2c: At least 3 (1 per province)	Training reports  Evidence of establishment of genetic reserves and management plans and community nurseries/participatory plant breeding  Project M&E survey	Stakeholders are interested and willing to take part in the capacity needs assessment  Stakeholders are interested and willing to take part in the trainings	ICATAD and ICABIO GRD

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Output 2.3</b> Good practices and incentive mechanisms for <i>in situ</i> /on-farm conservation and use of target CWR and LRs identified, adopted and disseminated. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation as per Annex J	2.3a: No. and type of good practices and incentive mechanisms identified and tested (of which with explicit gender dimension)  2.3b: No. of farmers/communities adopting good practices and benefiting from incentive mechanisms	No good practices and incentive mechanisms for enhancing farmers' benefits from the conservation and use of CWR and LRs	2.3a: At least 2 (of which at least 1 with explicit gender dimensions)  2.3b: At least 20 farmers/2 communities in the three target areas have adopted good practices and are benefiting from incentive mechanisms	2.3a: At least 3 (of which at least 1 with explicit gender dimensions)  2.3b: At least 50 farmers/5 communities in the three target areas have adopted good practices and are benefiting from incentive mechanisms	Good practice descriptions  Dissemination materials  Records of implementation of practices (field surveys and observations)	Stakeholders are interested in testing the incentive mechanisms  Stakeholders are interested and willing to adopt good practices	ICECR D-MoA ICABIO GRD Local Govt Bureau of Public Relations and Public Information (MoA)

[illegible]

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Outcome 3</b> Producers, Masyarakat Adat, processors, consumers, and researchers are aware and benefit from the sustainable use of the target crops	3a. Increase in income from the value chains and market incentives developed by the project  3b. No. of farmers (including women, youth and other vulnerable social groups) benefiting from market and non-market incentives by province/district (Note: not counted towards Core Indicator 11 target to avoid double-counting with the 20,000 beneficiaries under Component 2)	Limited markets and low or fluctuating prices	3a. n/a  3b. n/a	3a. At least 10% increase in income of participating farmers  3b. At least 200 (of which 50% women, at least 10% Masyarakat Adat; collect age-disaggregated data to monitor youth engagement)	Trade and market statistics  Sales reports  Market analysis reports	Continued access to markets for these products, no regulatory barriers exist  No major socio-economic crises that would affect consumers? purchasing power	ICATAD and ICABIO GRD in collaboration with other partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Output 3.1</b> Barriers limiting production and use of target species in value chains assessed and strategies to address them developed, respecting the FPIC and rights to self-determined development of the Masyarakat Adat (see Annex J)	3.1: No. of guidelines, marketing and promotion strategies developed	Barriers exist limiting the production and use of target species in value chains, especially for women	3.1: At least 3	3.1: At least 5	Value chain assessment reports  Project reports  Market studies	Local communities, and national agencies contribute to the documentation of the value and benefits of the target crops for improving food security and income generation	ICATAD, ICABIO GRD and ICAPRD
<b>Output 3.2</b> Market and non-market incentives for farmers and Masyarakat Adat to grow the target crops in pilot communities identified and tested and agreed through the FPIC processes and Masyarakat Adat Plans	3.2: No. of culturally appropriate and gender-responsive market and non-market incentives tested, documented and implemented in target areas	No market and non-market incentives in place for farmers to grow the target crops	3.2: At least 3 identified	3.2: At least 5 identified, 3 tested/implemented	Description of incentives  Reports of implementation	Communities at pilot sites are interested in evaluating and testing best practices	UNS and UGM

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Output 3.3</b> Capacity of producers, processors, consumers, and researchers to use and benefit from the target crops enhanced	3.3a: No. of farmer groups/associations receiving capacity training and other support to benefit from the use of the target crops (of which women-led/with at least 40% women members)  3.3b: Number of private companies actively engaged in value chains for target crops	Farmer groups and/or associations have limited capacity to benefit from the target crops  Limited engagement of private sector in value chains of the target crops	3.3a: At least 2 farmer groups/associations (of which at least 50% women-led or with at least 40% women members)  3.3b: n/a	3.3a: At least 8 farmer groups/associations (of which at least 50% women-led or with at least 40% women members)  3.3b: At least 3	Project progress reports  Project M&E surveys	Farmers see benefit in collective collaboration  Trainers and Training facilities available  Markets are receptive to the target crops and demand is sustained	ICABIO GRD with the Agriculture Human Resources Extension and Development Agency (BPPSD MP), the DG of Food Crops and DG of Plantations
<b>Output 3.4</b> Inclusive information campaigns/events (e.g., on diversity, nutrition, interculturality, cultural heritage) at the national, local and provincial levels developed and implemented as per FPIC for Masyarakat Adat crops and foods, to foster greater appreciation and demand for target crops	3.4: Number of information and education events that foster awareness of consumers, policy makers and other actors about the positive benefits of conserving and using target crops and CWR	Limited awareness of consumers, policy makers and other actors about the positive benefits of conserving and using target crops and CWR	3.4: At least 4 major information events conducted at local, provincial and national level	3.4: At least 16 major information events conducted at local, provincial and national level	Availability of communication materials  Records of campaign events  Project progress reports	Media are interested in promoting the value and benefits of target crops  Consumer's favour the consumption of target species with high nutritional value	ICABIO GRD and ICATAD



Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Component 4: Strengthening knowledge management</b>							
<b>Outcome 4</b> Policy makers, farmers, Masyarakat Adat, breeders, extension officers and land managers have a one-stop access to knowledge on the target crops and their traits to support their conservation and use	4. Availability of gender-responsive knowledge management platform documenting and promoting diversity, TK and best practices	Limited knowledge and awareness available to programs to deploy target crops at the beginning of the project	4. n/a	4. Platform is available and documents gender-responsive knowledge promoting diversity, TK and best practices	Project progress reports  Evidence of knowledge management platform and content	Sustained political will exists from national partners and programmes  Effective communication channels exist at local, provincial and national levels	ICABIO GRD

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Output 4.1</b> Knowledge management platforms documenting diversity, traditional knowledge (TK) and practices in support of <i>in situ</i> /on-farm conservation and sustainable use of target crops developed. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation for Masyarakat Adat as per Annex J	4.1: Number and type of users accessing the platform	No single knowledge management platform currently in place	4.1: n/a	4.1: At least 10 national / provincial / local institutions regularly use and access the platform	Project progress reports  Evidence of knowledge management platform and content	Partners and users beyond the project are interested in the value and benefit of target crops and CWR	ICABIO GRD

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Output 4.2</b> Guidelines for improved use of target crops, including processing, food safety measures, and recipes adapted to modern lifestyles based on traditional food systems developed. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation for Masyarakat Adat as per Annex J	4.2: Number of guidelines/publications highlighting use of target crops, recipes and processing methods (of which with explicit gender dimensions)	Limited availability of relevant guidelines at national level	4.2: At least 4 sets of gender-responsive guidelines addressing aspects of production, and/or processing, marketing and utilization drafted (of which at least 3 with explicit gender dimensions)	4.2: At least 5 publications highlighting innovative approaches to enhancing the use of target crops covering production, and/or processing, marketing and utilization (of which at least 4 with explicit gender dimensions)	Publications Recipe books and other media Progress reports	Value chain actors are interested and willing to adopt guidelines	ICABIO GRD with the Indonesian Centre for Agricultural Postharvest Research and Development (BB-Pascapanen)

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
<b>Output 4.3</b> Tools and methods upscaled and disseminated. Carried out in respect of the FPIC processes and resulting from the Masyarakat Adat Plans implementation for Masyarakat Adat as per Annex J	4.3: Number of project-developed best practices, tools, guidelines and methods documented (of which explicitly related to gender)	No examples of guidelines for mainstreaming crop diversity into relevant strategies (e.g., food security and nutrition strategies and in climate change adaptation) exist	4.3: n/a	4.3: At least 5 (of which at least 4 with explicit gender dimensions)	Evidence of best practice documents, tools, guidelines and methods documented  Progress reports	Project can produce successful pilot examples of mainstreaming at the local, provincial, and national level  Other relevant stakeholders are interested in mainstreaming crop diversity	ICABIO GRD
<b>Project Monitoring and Evaluation</b>							
Project M&E is conducted regularly	(i) M&E deliverables (reports, MTR, TE, etc. as outlined in the ProDoc) are submitted on time.  (ii) Project exit strategy is developed and agreed with key stakeholders		(i) M&E deliverables/reports submitted on time  (ii) n/a	(i) M&E deliverables/reports submitted on time  (ii) Exit strategy is available and agreed with key stakeholders	Evidence of M&E documents and reports		PMU

<sup>[1]</sup> Project lifetime is defined as 20 years (consisting of 5 years of implementation and 15 years of capitalization phase). [https://www.fgeftracks.com/sites/default/files/2019-04/indicators\\_0.pdf](https://www.fgeftracks.com/sites/default/files/2019-04/indicators_0.pdf)

<sup>[2]</sup> United Nations Declaration on the Rights of Indigenous Peoples.

<sup>[3]</sup> Free, Prior and Informed Consent (FPIC) and Indigenous Peoples? Plan (IPP).

<sup>[4]</sup> Including custodian farmers, Masyarakat Adat, protected areas managers, breeders, extension services, and other land managers.

**ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).**

Secretariat comment at PIF stage	Responses
1.) Please include in project preparation/design and for CER stage assessment of CWR that are present in project sites for each of the target crops.	? As explained in <i>Section 2) Baseline scenario</i> , initial baseline assessments were conducted in the three target areas during PPG. A summary is included in Section 2), and more detailed Baseline reports are available and can be shared with the GEF Secretariat upon request.
2.) Please understand that this project must concentrate on the Implementation of the Nagoya Protocol and not on the International Treaty on Plant Genetic Resources for Food and Agriculture. GEF is not the Financial Mechanism for the ITPGRFA. Despite recent revisions to remove direct reference by name to ITPGRFA, Component 1 still contains language that could lead to that type of work. Please keep this in mind during project design and preparation and we will revisit at CER stage.	? This has been revised accordingly as per comments at CEO endorsement request stage. Please refer to the Review sheet for details.
3.) Among other dimensions of Climate Change risk, in PPG, please assess/address the risks/vulnerability of the crops (and landscapes) to climate change, adaptive capacity and potential risks for the intended results/impacts of this investment.	? A detailed climate risk analysis was conducted for the project and is attached as a separate document in the Portal. Information on the vulnerability of the crops/landscapes, adaptive capacity and risks related to the intended project results are included in the climate risk analysis document and in <i>Section 5) Risks</i> , sub-section (b) Climate Risk Analysis.

Council comment at PIF stage	Responses
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1) **United States Comments:**

? The Nagoya Protocol is not specific to PGRFA ? will all of the proposed outputs and outcomes under Component 1 be related to ABS for PGRFA? For example, the development of strategies/action plans for implementation of ABS could be a big task on its own, especially if this is for all GR, not limited to PGRFA.

? We hope that project implementation will include any efforts necessary to ensure smooth coordination between ministries responsible for different biodiversity-related conventions.

? Some of the focus crops ? in particular rice, taro, and yams ? are covered by the Multilateral System of the International Treaty of Plant Genetic Resources for Food and Agriculture. Will any material that may be collected be made available through the Treaty?s MLS?

? The Second State of the Worlds? Plant Genetics Resources identified clear gaps/issues that this project could address. Similarly, the Global Crop Diversity Trust, in particular the Crop Wild Relatives Project, may have resources or lessons learned helpful in further development of this project.

? This has been revised and a well-defined, limited set of activities related to ABS has been included in one specific output (see new Output 1.5). Please refer to *Section 3) Alternative scenario* for details. The activities under Output 1.5 will mostly focus on ABS related to plant genetic resources of the target crops..

? Cross-sectoral collaboration and coordination will be a key element of all Outputs under Component 1. The Ministry of Agriculture and the Ministry of Environment and Forest are fully committed to jointly implement this project for the mutually supportive benefit of biodiversity-related conventions.

? Material collected under the project may be made available under the Treaty?s MLS (for rice, taro and yam). However, this would not be done with GEF resources, but may be done in parallel. Any sharing of material will be in line with the Treaty?s provisions and will follow Minister of Agriculture Regulation No. 15 Year 2009 on the Guidelines for Development of Material Transfer Agreement ([Kementan, 2009](#)); and the Regulation of Minister of Agriculture No. 37 Year 2011 concerning the Preservation and Utilization of Genetic Resources ([Kementan, 2011](#)).

? A note has been added in *Section 6b*. *Coordination* and exchange will be sought with the Global Crop Diversity Trust, in particular the Crop Wild Relatives Project.

<p>2) <b>Canada Comments:</b></p> <p>? We have noted with concern that all references to the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) were removed (?in response to upstream GEFSEC comment to that effect?), given that 3 out of the 5 target crops are on Annex 1 of the ITPGRFA, and it is generally accepted that it is very important that there would be mutually supportive implementation of the Nagoya Protocol and the ITPGRFA. This project appears to offer an invaluable opportunity to build capacity to do so in Indonesia - there is otherwise a risk of developing ?access and benefit sharing? legal measures that could detract from food security considerations and interfere with Indonesia?s other commitments. We recommend that the project reconsider implementing in accordance of the ITPGRFA; we would consider avoidance of this issue is to the detriment of this project and the stakeholders concerned.</p>	<p>? Reference to the mutually supportive implementation of the two instruments has been added under Component 1 of the project (Output 1.5). There will be close collaboration between MoA and MoEF under the Project, in particular under Components 1 and 2.</p>
<p>3) <b>Germany Comments:</b></p> <p>Germany approves the following PIFs in the work program but asks that the following comments are taken into account:</p> <p>Suggestions for improvements to be made during the drafting of the final project proposal:</p> <p>? The support structure of the project is logical since the Ministry of Environment and Forestry is formally responsible for the implementation of the Nagoya Protocol and the research unit of the Ministry of Agriculture is to implement the project. However, in the interest of upscaling the project?s activities are feasible without any direct involvement of the implementation directorates of the Ministry of Agriculture. Germany would therefore kindly suggest that the project considers which partners would be appropriated in order to achieve the envisioned upscaling.</p>	<p>? Detailed discussions on the implementation arrangements were held during PPG and are reflected in Section 6a as well as Section 2. Stakeholders. Detailed information on roles and responsibilities have been added in the work plan. The MoEF, and specifically the Directorate General of Natural Resources and Ecosystem Conservation, in close coordination with ICABIOGRD, will co-lead activities linked to policy review and harmonization of procedures related to the Nagoya Protocol (Output 1.5) and the cross-sectoral policy platform (<b>Component 1</b>), and assessing the diversity and conservation status of target crops and wild relatives, establishing genetic reserves, as well as setting up an information system to monitor changes in the distribution of priority species (<b>Component 2</b>). In particular, MoEF will be responsible for implementation of Output 1.5 on ABS and will be closely involved in aspects related to biodiversity mainstreaming.</p>
<p>STAP comment at PIF stage</p>	<p>Responses</p>

<p>1) The proposal is unclear and not well organised, making it difficult to work out the internal logic of the intervention. The Theory of Change provided is not adequate. STAP strongly recommends that a robust, participatory TOC is developed, with a focus on clarifying key outcomes that represent changes in the state of the world that project action brings about, which lead clear to achievement of the final objective.</p>	<p>The TOC was reviewed and discussed in detail with stakeholders and significant changes have been made to address the comments raised by STAP at PIF stage. A detailed description of the project's TOC, its Outcomes and Outputs is included in <i>Section 3) Alternative scenario</i>.</p>
<p>2) The linkage of the Nagoya Protocol to the rest of the project is unclear.</p>	<p>The links of the activities related to the Nagoya Protocol with the remaining Components have been made clearer in Output 1.5 description. Please refer to <i>Section 3) Alternative scenario</i> for details.</p> <p>The processes and guidelines related to the Nagoya Protocol implementation will be directly applied through the field activities in Components 2 and 3, through the access and benefit sharing agreements with local communities and Masyarakat Adat, where relevant. Similarly, the experiences and lessons learned from Components 2 and 3 will inform the enhancement of processes and guidelines under Component 1.</p>
<p>3) The incentives that are necessary to drive farmer practice toward conservation of diverse traditional landraces are unclear. There appears to be very heavy reliance on an assumption that provision of information about benefits of traditional varieties will be adequate to create a market for them: no evidence is provided to substantiate this. STAP recommends a thorough review and revision of project design in the light of development of a comprehensive TOC, plus careful evaluation of the feasibility of the underlying assumptions.</p>	<p>Market and non-market incentives have been analysed and discussed with stakeholders during the project design, and are included in <i>Section 3) Alternative scenario</i>. Potential incentive mechanisms include Payments for Agrobiodiversity Conservation Services (PACS), product development and marketing, public procurement, and Geographical Indication. Other incentive mechanisms that recognize and support custodian farmers and local communities to maintain traditional and sustainable land-use systems will be explored, in line with FAO's toolkit on sources of incentives for ecosystem services.<sup>[1]</sup></p>



<p>4) The problem statement is not clearly written and is poorly organized. There is no clear structure or delineation of context, threats, root causes and barriers, and much material about the content of the project all jumbled up with the problem statement in this section. Later, in the 'alternative scenario' section, there is more detail provided about the problem. The key problem addressed in the project, however, is loss of PGRFA, required for food security and adaptation to climate change. Additional problems (possibly barriers) identified include lack of coordination in implementation regulations, lack of coherence of laws/regs across sectors, and gaps in Nagoya Protocol implementation. There is no explanation of how better Nagoya Protocol implementation will assist in conserving PGRFA.</p>	<p>A detailed problem and barrier analysis is now included in Section 1), and the description of the alternative scenario has been moved to Section 3). The linkages with the Nagoya Protocol for access and benefit sharing have been made clearer. It is anticipated that improved implementation of the Nagoya Protocol will enable stakeholders to better document knowledge associated with plant genetic resources and identify incentives for local communities to conserve their traditional crops and farming practices, thereby contributing to the conservation of the target crops.</p>
<p>5) There is virtually no description or explanation in the problem statement regarding current trends in PGRFA and what factors currently threaten their conservation, although a little more detail is provided later in the 'alternative scenario' section. The Green Revolution is highlighted as driving increasing crop genetic uniformity, and its ideology and practices could usefully be drawn out as among the root causes (also if there is ongoing support for this approach that could be identified as a barrier). The problem analysis also needs to identify and discuss whatever factors are driving the loss of PGRFA to agriculture, forestry, etc., as indicated in the PIF. The lack of detail about drivers of the problem makes it hard to assess whether the measures proposed are appropriate to address the problem.</p>	<p>A detailed analysis of threats and drivers has been conducted during PPG, including in consultation with local stakeholders. The analysis is reflected in the Baseline reports as well as in Section 1) of the CEO ER.</p>
<p>6) Some of the site selection criteria set out in this section are hard to understand e.g. 'The extent to which in situ conservation in each site will be sustainable, and sustainably used to support biodiversity conservation? (How do you know?).</p>	<p>The selection criteria have been reworded to make this clearer (see <i>Section 2) Baseline scenario</i>). A key set of criteria used in site selection was the government's baseline investment and interest to support scaling up of project actions. This is considered a key factor to ensure sustainability. Secondly, the indicative interest of local communities to conserve and sustainably use the target crops at proposed sites was also considered an important factor.</p>
<p>7) There are no lessons from previous projects described.</p>	<p>An analysis of relevant past and ongoing projects upon which the project builds is included in Section 6b. of the CEO ER.</p>

<p>8) In Component 4 there are issues around intellectual property in traditional knowledge, that need to be treated carefully, given the emphasis on documenting and disseminating this knowledge.</p>	<p>As noted under Component 4, with regard to traditional knowledge, any documentation of TK will duly follow the provisions of the Nagoya Protocol as well as the FPIC principles outlined in FAO's FPIC Manual. The utilization and exchange of traditional knowledge will be guided by community agreements and Community Biocultural Protocols where appropriate.<sup>[2]</sup> A process of Free, Prior and Informed Consent (FPIC) will be followed by the project, as described in Annex J.</p>
<p>9) What activities will be implemented to increase project's resilience to climate change. None are specified.</p>	<p>A detailed climate risk screening was conducted for the project and informed the project design, as described in Section 6. Risks. A major challenge may be increased risks from storms etc. that can damage and cause losses in the target crops. Changes in infestation of pests and diseases due to changing climatic conditions may also pose risks and the project will support actions to strengthen local capacities to address these challenges. The work of the project on safeguarding the target crops <i>in situ</i> and on farm is expected to help the species develop adaptive capacities in nature, and hence ensure that they are resilient in face of climate change impacts; and that the target crops maintain genetic diversity and traits that could also help in more resilient breeds of food for resilience and nutrition.</p> <p>Notably, as explained in <i>Section 3) Alternative scenario</i>, the National Strategy and Action Plan developed by the project, as well as the genetic reserves design and their management plans, will incorporate climate risks and adaptive management.</p>

<p>10) It is notable that local communities will be key actors in the success of the project, but have not been directly consulted (and only indirectly consulted in certain project areas) in development of the project. It would be reassuring to know that there was local support for and interest in this project, and that this project design reflected the priorities and perspectives of local communities whose knowledge and practices are the key focus of it.</p> <p>Local communities are not listed as stakeholders and no role in the project is defined for them, which is a major oversight, and again not reassuring regarding the thinking of project designers about their role as key actors here.</p> <p>Otherwise, the private sector are likewise key actors in the project, particularly regarding building markets and supply chains for products from traditional landraces, but are not identified here.</p>	<p>Detailed consultations with local stakeholders, including local communities and private companies, were conducted during PPG and are described in the Baseline reports as well as in <i>Section 2. Stakeholders</i>. Stakeholders, including governments, companies and local communities, expressed their strong interest in and support of the project.</p>
<p>11) Risks</p> <p>The potential lack of government support (at various levels) for traditional landraces seems like an important risk, and the response measures here do not seem adequate (and are very hard to understand).</p> <p>Likewise the market risks appear considerable, and again the response measures are weak. It is simply asserted that farmers will benefit from agricultural diversity due to market and business plans ? but will plans necessarily translate into economic advantage? Presumably it was the market advantages of industrial varieties that led to their wide uptake ? what economic benefits will counter this?</p> <p>The risk of losing government financing given Covid constraints is likewise serious, with little provided in the way of response.</p>	<p>A more detailed risk analysis was conducted during PPG and is included in Section 6. Risks.</p> <p>The fact that Indonesia has decided to allocate some of its STAR resources to this project shows that there is strong championing for agrobiodiversity conservation amongst senior policy makers in the environmental sector (where the OFP sits) and from the Ministry of Agriculture ? which is one of the key executing agencies for this project. Their continued champion roles will be critical in ensuring cross-sectoral support as well as local government support. We anticipate that strong local cultural values for local varieties and increased engagement of local communities and businesses in agrobiodiversity conservation and sustainable use will also lead to them playing more advocacy and ?demand? role from government to support conservation of the target crops. FAO will also continue to play a role in ensuring support for the conservation and sustainable use of the target crops.</p>

<sup>[1]</sup> <http://www.fao.org/in-action/incentives-for-ecosystem-services/toolkit/sources-of-incentives/en/>

<sup>[2]</sup> See also <https://biocultural.iied.org/community-biocultural-protocols>.

**ANNEX C: Status of Utilization of Project Preparation Grant (PPG).**  
**(Provide detailed funding amount of the PPG activities financing status in the table below:**

PPG Grant Approved at PIF: <b>200,000</b>			
<i>Project Preparation Activities Implemented</i>	<i>GETF/LDCF/SCCF Amount (USD)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent to date</i>	<i>Amount Committed</i>
Consultants	9,000	7,280	1,720
Contracts (LoAs)	155,000	55,237	99,763
Locally contracted labours	0	152	(152)
Travel	20,000	3,787	16,213
Expendable procurement	16,000	0	16,000
<b>Total</b>	<b>200,000</b>	<b>66,456</b>	<b>133,544</b>

#### **ANNEX D: Project Map(s) and Coordinates**

**Please attach the geographical location of the project area, if possible.**

See Section 1.b.

#### **ANNEX E: Project Budget Table**

**Please attach a project budget table.**

**Budget per Component**

#### **ANNEX F: (For NGI only) Termsheet**

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

n/a

#### **ANNEX G: (For NGI only) Reflows**

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agency is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

n/a

#### **ANNEX H: (For NGI only) Agency Capacity to generate reflows**

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

n/a