

FINAL REPORT

1. Background Information

1.1	Project Name: Mainstreaming agricultural biodiversity conservation and utilization in agricultural sector to ensure ecosystem services and reduce vulnerability
1.2	Project number: GEF ID: 5137
1.3	Responsible Divisions/Units in UNEP: UN Environment Programme Ecosystems Division GEF Biodiversity and Land Degradation Unit Biodiversity and Land Branch
1.4	Project starting date: 30 November 2016
1.5	Project completion date: 11 July 2023
1.6	Reporting period: 30.11.2016-11.07.2023
1.7	Reference to UNEP Sub-Programme/GEF Strategic Priority and expected accomplishments: Strategic Objectives: GEF strategic long-term objective: BD-2; Strategic Programme for GEF V NA, UNEP Priority: Ecosystem Management
1.8	Overall objectives of the project: (maximum quarter of a page): The objective of this project was to mainstream the conservation and use of agricultural biodiversity for resilience in agriculture and sustainable production to improve livelihoods and access and benefit sharing capacity of farmer communities across four agro-ecoregions of India. This was done through a number of tested community-based participatory approaches which support the maintenance of existing crop diversity and the introduction and deployment of appropriate new materials of 20 crops. The various approaches followed include awareness campaigns, seed fairs, diversity fora, strengthening seed supply systems and the establishment of community genebanks, and other adaptive technologies that enable farmers to adopt and benefit from diversity rich solutions. The project worked directly with farmers and communities to mainstream crop diversity on farm to address the challenges they are facing due to change in climate. This includes participatory evaluation and identification of suitable crop diversity and improved awareness and information on varietal adaptation based on scientifically sound evidence and its validation by farmers and communities, including men's and women's self-help groups. Income and other livelihood improvement actions through value addition and unique product development from local crops and landraces and their commercialisation through effective market links will also support mainstreaming. The project places special emphasis on capacity building and empowerment of women through conservation and use of agricultural biodiversity. The project also developed national and regional level strategies and plans on integrated sustainable agricultural improvement and use of agricultural biodiversity that improve ecosystem services and provide an enabling environment for diversity deployment in order to support adaptation of agricultural ecosystems. In addition, the project also strengthen relevant institutions and build the capacity of rural communities to enable custodians of agricultural genetic resources to share the benefits of the materials they are conserving and ensure recognition of the role of agricultural biodiversity by the agricultural sector.
1.9	Total Budget (US\$): (specify contributions by donor/s): Cost to the GEF Trust Fund: 3,046,347 Co-financing total: 10,294,750

1.10	Partners and leveraged resources: • ICAR-National Bureau of Plant Genetic Resources (NBPGR), New Delhi • ICAR-Central Arid Zone Research Institute (CAZRI), Rajasthan • ICAR-All India Coordinated Research Project on Pearl Millets, Rajasthan • ICAR-Vivekananda Parvatiya Anusandhan Sansthan (VPKAS), Uttarakhand • ICAR-Vivekananda Parvatiya Anusandhan Sansthan (VPKAS), Uttarakhand • Indira Gandhi Krishi Vishwavidyalaya (IGKV), Chhattisgarh • Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya (RVSKVV), Madhya Pradesh • Assam Agriculture University (AAU), Assam • Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishwavidyalaya (CSKHPKV), Himachal Pradesh • Agriculture University of Jodhpur (AUJ), Rajasthan • Action for Social Advancement (ASA), Madhya Pradesh • Deendayal Research Institute (DRI), Madhya Pradesh • Foundation for Development Integration (FDI), Assam • Gramin Vikas Vigyan Samiti (GRAVIS), Rajasthan • Lok Chetna Manch (LCM), Uttarakhand • Himalayan Research Group (HRG), Himachal Pradesh • Mount Valley Development Association (MVDA), Uttarakhand
	Describe collaboration with partners and state their role. Protection of Plant Variety and Farmers Rights Authority (PPV&FRA), New Delhi participated in organizing awareness programs on the protection of farmers' varieties and benefit sharing at national and regional levels. It assisted farmers in documenting special attributes of landraces to make them eligible for registration and supported the registration of unique landraces/farmers' varieties. National Biodiversity Authority (NBA) of India, Chennai participated in developing ABS (Access and Benefit Sharing) agreements and crop biodiversity registers through State Biodiversity Authorities (SBA). It also contributed to organizing awareness programs and helped farmers in documenting and registering unique landraces. State Departments of Agriculture and Biodiversity Boards participated in project implementation alongside communities. They assisted in mainstreaming agricultural biodiversity based on project findings and supported the development of village-level agricultural biodiversity registers and marketing initiatives. ICAR-NBPGR, ICAR institutes and State Agriculture Universities - These organizations supported the project by providing scientific and technical backstopping as well as collaborating in research and in the development of suitable methods and approaches. Staff from these organizations were invited to participate in project consultations, seminars, conferences, and workshops, and also took part in farmers' field days. They supported the provision of additional diversity to project sites where needed. They collaborated in the development of public awareness materials for mainstreaming agricultural biodiversity and contributed to the dissemination and up-scaling of project outputs through peer-reviewed scientific publications. They contributed to the identification of major knowledge gaps and developed research proposals to address them. Additionally, they organized training programs for project partners and participated in public awareness and policy dialogues. NGOs - They worked with farmers and communities to facilitate consultation and collaboration across project sites and assisted in mobilizing participatory action research. They were invited to take part in project consultations and meetings and were extensively involved in the dissemination of outreach materials at the grassroots level. They particularly supported on-farm field trials, organized field days, diversity fairs, farmers' exchange visits, and helped mobilize relevant traditional knowledge.

	List the additional resources leveraged (beyond those committed to the project itself at time of approval) as a result of the project (financial and in-kind) Additional resources in the form of co-financing was leveraged from the following project partners. These partners have not committed any co finance initially. • Deendayal Research Institute (DRI), Madhya Pradesh • Lok Chetna Manch (LCM), Uttarakhand • Mount Valley Development Association (MVDA), Uttarakhand • Assam Agriculture University (AAU), Assam • Agriculture University of Jodhpur (AUJ), Rajasthan • Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishwavidyalaya (CSKHPKV), Himachal Pradesh • Indira Gandhi Krishi Vishwavidyalaya (IGKV), Chhattisgarh • Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalya (RVSKVV), Madhya Pradesh
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2. Project Status

2.1	Information on the delivery of the project		
Activities/Outputs (as listed in the project document)	Status	Results/Outcomes (measured against the performance indicators stated in the project document)	
COMPONENT 1: Adaptive management of crop diversity for resilient agriculture and improved livelihoods			
Output 1.1: Extent and distribution of genetic diversity of 20 crops in 4 agro-ecoregions determined and factors that shape farmer decisions on diversity maintenance, including challenges presented by climate change documented	Complete	Extent and distribution of genetic diversity of target crops in 4 agro-ecoregions was determined and factors that shape farmer decisions on diversity maintenance, including challenges presented by climate change documented by conducting baseline survey. A total of 22047 farmers were identified across the four agro-climatic zones viz. 1. Western Himalaya: Himachal Pradesh, Uttarakhand, Jammu and Ladakh; 2. Northeast: Assam; 3. Hot Arid: Rajasthan and 4. Central Plateau: Madhya Pradesh, Chhattisgarh and Uttar Pradesh and includes: core villages (9284 farmers across 59 villages), buffer villages (6642 farmers across 58 villages) and control villages (6121 across 36 villages). The data generated through HH baseline survey, including specific information for the target crops, across project sites has been tabulated for all 16 indicators comprising 209 questions. Baseline survey was conducted using the RHoMIS (Rural Household Multiple Indicator Survey; www.rhomis.org) framework. Our results showed that the agro-ecological zones included in the project are very different: strong differences in farming systems and livelihood strategies, and in pathways towards diverse diets. The food group-based analyses of dietary diversity scores gave good insight in existing diets, and potentials for and types of interventions that could help improving these diets. For example, in the Western Himalayan zone cereals, legumes and different groups of vegetables are already present in diets with relatively low dietary diversity scores, while livestock products only come in at high dietary diversity scores. This shows that basically the whole population surveyed has diets that consist of at least 4 or 5 crop and vegetable-based food groups. This is quite distinct from the other zones, where dairy is one of the key components of the diets of the large majority of households (it comes in as either the second or third food group in the diets), stressing the higher importance of livestock in those production systems. The food group breakdown of the dietary	

		diversity scores can give important information for intervention planning to improve the current diets. For example, in the Hot Arid region the average dietary diversity score lies around 4, and at that level of dietary diversity leafy vegetables and eggs have not entered the diets yet. These two food groups could therefore be the entry point for diversification strategies in that zone. For the Central Plateau zone similarly fruits and eggs could be focus points of interventions. This data report is a first step in analysing the household survey data, but already gives valuable insights and generated hypotheses that need further testing in field-based research and further in-depth data analyses. It is clear that both should go hand-in-hand to achieve a robust evaluation of these initial findings. We also analysed crop diversity patterns from the baseline data. We here propose a method for calculating a Varietal Threat Index using the Four-Cell Analysis (FCA) participatory methodology at different geographical scales to monitor changes in varietal diversity on farm and compare between areas. Results were showed that landraces are still commonly grown in the study sites, especially in the central and western regions, but that more than 50% of landraces are considered as threatened, suggesting that conservation interventions are required to prevent large scale genetic erosion. A long-term monitoring framework for varietal diversity in India is proposed.
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Output 1.2: Identification of new and traditional crop genetic diversity that meets farmers' needs and is able to enhance ecosystem function, resilience and adaptation to climate change	Complete	We identified 4491 native varieties of 20 crops viz. rice, maize, barley, kidney bean, moth bean, rice bean, black gram, green gram, chickpea, horse gram, finger millet, little millet, pearl millet, pigeon pea, mustard, sesame, soybean, amaranth, buckwheat, cumin were tested in four recognized agro-ecoregions viz., Western Himalayas including the cold arid tract; North-eastern region and the Eastern Himalayas; Western arid/semi-arid region, and Central tribal region covering 15 districts of seven states. We used crowdsourcing approach and conducted 1021 mother trials and 5935 baby and selected 246 potential native varieties that are being cultivated at scale within a nature-based production environment. The farmers of the project area have shown immense interest in getting back their old varieties (land races) which they had been cultivating for long, but these were either slowly lost/reduced or replaced with modern high input responsive modern varieties. As for example the farmers of Hot Arid region were excited to get back 'Peeli Bazri', 'Moonchhwali Bazri,' Surkhani Bazri, with longer storage life of the flour and low level of bird damage. Jhumka Moth of moth bean was another popular variety liked by the farmers. In rice, Vikram-TCR, TCDM-1, RRF105, Jeeraphool were the most potential genotypes based on the farmers' choice. Similarly, Telia Urd and Indira Urad Pratham in Black gram, Makadi Arhar and CG Arhar-1 in Pigeonpea, Bada Kodo and CG Kutki-2 in Minor millets, Lutni Sarso and Varuna in Mustard and Majhola Chana and RVG 203 in Chickpea were identified as most potential genotypes by farmers' choice. Apart from agronomic value varieties that can withstand the pressure of various biotic and abiotic stresses were also selected such as Karhani, Indira Barani Dhan 1, RRF 105, RRF 105, Zinko Rice (high zinc content), Person Badsah, Bejhari, Kardhana, Kala Saraiya, Newari, Baghmooch, Charaki Saraiya, Salaiya (Red Rice) in rice; Doodh Mogar Makka in Maize; Bhadosari, Lubia, Raiboot, Galari, Lakhna, Tilshan, Black Kodo, Black Kutaki, White Kutaki in Minor millets are the varieties /landraces which were found tolerant to drought stress. Various varieties in Rice (Vikram-TCR), Mustard (BJNEC-395550 and BJNEC-182675) and Wheat (Hansa Gehu, Mahyco Bold and Soharaj Gehu) showing high and stable performance in the trials for multiple years cross the Project sites were identified as potential for using directly or as a parent to develop climate resilient varieties. Apart from these in rice, farmers' variety Sanchuriya was found to withstand cold stress, Jalkeshari variety can sustain and perform better under water logging conditions, farmers' variety Madhuraj 55 was found to have low glycaemic index while Karhani (having high iron content), Dhaniya dhan, Kalajeera and Rudra Dhan were found tolerant to various biotic stress.
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Output 1.3: Farmer identification, improvement and use of adaptive crop diversity through field experimental networks	Complete	For adopting best practices at community level for large scale cultivation of 246 potential varieties 596 farmers have been trained and designated as Champion farmers, 197 Self Help Groups (SHGs) with member ship of 2588 of which 1980 women and 608 men farmers are closely working with 25 Farmers' Producer Groups and 23 private companies / startups on value addition and product development for improved adaptation and livelihoods. In total, 75,119 farmers comprising 28392 men, and 46727 women farmers are using crop diversity 246 varieties for improved adaptation and livelihoods. Presently, the area under potential varieties is around >90,000 ha by involving ~75,000 farmers. In order to generate awareness and to enhance farmers' skill on agrobiodiversity conservation and use we conducted 342 trainings, 308 awareness workshops, 269 field days, 377 framers' interaction meetings and 78 cross learning exposure visits wherein 16838 framers comprising 9857 and 6981 women and participated. Farmers' Field Schools and Village Climate Risk Management Committees to promote use of crop diversity and resilience agriculture have been formed in core villages with 10-15 members (Mixed with Champion Farmers, Custodian Farmers and SHG Members) in each committee at various sites.
Output 1.4 Improved farmers' access to genetic materials in all project sites through establishment of community biodiversity registers (CBRs), community seed banks (CSBs) and diversity fairs	Complete	Seed system strengthened with 32 community seed banks at 17 project sites, conserving >3000 native varieties. Some community gene banks reported good progress such as: seed bank at Lalitpur village, being run by farmer Shri Parasnath and his co-workers, maintaining 53 local varieties of paddy and millets; another community seed bank being managed by Dipen Baruah in Assam maintaining 76 traditional varieties of different types of rice (29 varieties of non-sticky rice; 10 varieties of aromatic rice; 9 varieties of sticky rice; 14 varieties of Chakowa /Lahi Rice; and 14 varieties of deep water rice. Other groups are Richariya Kishani Sambardhan Samiti - Dhamtari (Rice- 268), Dharohar Samiti- Kondagaon (Rice 257), Sangta Sahbhagi Gramin Vikash Sansthan- Amibikapur (Rice 150), Surya Swaym Sahayata Samooh- Balrampur (Rice, Kakoda 50), Jai Durga Krishak Club-Janjgeer Champa (Ber, Mango, Rice 270), Divyakar Samiti- BalodaBajar (Rice 81), Klshan Beej Utpadakahkari Beej Samiti, Risda, Bilaspur (Rice, Wheat 48). To create business opportunities for the community seed banks and generate income, interviewed staff of the support organizations pointed out that all these new community seed banks have a capacity of 15–20T seed storage, which is much more than in the past. They mentioned that the new operational model is to combine seed storage with large-scale distribution of farmers' varieties of major and minor crops. Sixteen community biodiversity registers have been established in at 11 project sites.

Output 1.5 Identification of production and non-market benefits/incentives from management and sustainable use of crop genetic diversity of 20 crops in four agro-ecoregions and relevant intervention strategies for capturing and enhancing such benefits	Complete	Over 90,000 ha of farmland involved in the project practice improved farming, use of traditional varieties and marketing of commodities and products for improved income. The diversity of local rice varieties rich in nutrition, flavour, taste and texture that have been grown for centuries. They were mostly cultivated using grandparents' traditional know-how that cared foremost for soil health, which the elders knew must sustain future generations. To add value nutrition profiling of selected landraces of target crops has been undertaken. So far, nutritional profiling of 1493 samples of rice 630, pearl millet 87, finger millet 32, foxtail millet 28, little millet 4, barnyard millet 4, sorghum 4, green gram 111, moth bean 103, horse gram 129, chickpea 48, pigeon pea 12, kidney bean 12, soybean yellow 28, soybean black 32, sesame 17, amaranth 4, buckwheat 151, barley 57 have been undertaken. This is helping in developing value chain to the products. In total 120 varieties and 282 products have been identified for value chain while value chain has been established for 68 varieties. As an example, new markets for 12 native varieties of rice viz. Kola Joha, Boga Betguti, Amona Bao, Ronga Bao, Kunkuni, Keteki joha, Badsah bhog, Kola, Ceera ronga, Ronga bora, Joha bora, Kola til etc. (out of 24 heritage rice varieties) in NE Region under brand Native Basket. Also, mainstreaming of the six native mountain crops of Red Rice, Kidney Beans, Amaranth, Buckwheat, Barley and Rice Beans was carried out with multiplication of available local landraces and produced in farmers' fields. Cluster of about 500 farmers was developed and oriented for cultivation, consumption and commercial business of these selected mountain crops. Efforts were made to link clusters developed by the Govt of H.P. under Natural Farming to generate volume for sustaining the business model. The model is expected to provide premium return to the farmers in addition to household consumption of these crops for improving nutritional level as these crops are rich in macro & micronutrients. Over 30,000 farmer families are benefiting from the whole gamut of activities from production to processing and sale at different sites (Rana et al., 2022). Community seed banks were also linked with custom hiring installation of threshing/processing machines, such as mini dal mill-cum-graders, oil extractors, mini rice mills, and millet dehullers. Women self-help groups are striding ahead with their success, linking up with companies and Govt. offices for promoting Jeera Phool in CT region. Community seed banks have been linked with custom hiring installation of threshing/ processing machines such as Mini Dal Mill cum grader, Oil Expeller, Mini Rice Mill, Millet Dehuller.
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Output 1.6 Identification of local, regional and national markets and market chains development for 20 crops to provide improved benefits to farmers and communities in all project sites for sustainably produced agricultural biodiversity products	Complete	In total 120 varieties and 282 products have been identified for value chain while value chain has been established for 68 varieties. Native varieties and products are marked with different brand names such as Native Basket, Dhartee Naturals, Sahalee. According to the strategy the brand "NATIVE BASKET- Your Ethnic Taste (A Trademark Registered Brand of Organically Produced Nutrient Rich Heirloom Crops Varieties of Northeast India) has been created and promoted by Foundation for Development Integration (FDI) with its logo having Northeast registration, the products having FSSAI license. FDI has entered into a collaborative agreement with the firms: M/s RED RIVER (as Primary Stuckist, Distributor & Marketing Firm), M/s NILACHAL AGROTECH (as Supporting Marketing Firm) and M/s BANSAR (as Online Marketing Firm). Armed with a such brand name such as Native basket, their everyday rice variety, which sells higher quantities, their aromatic rice brought in up to 20 -25 percent higher. Over 30,000 farmer families are being benefiting the whole gamut of activities from production to processing and sale at different sites ensuring farmers' livelihoods and resilience to climate change. Similarly, Mountain Grain was launched by Junee Mountain Farmers Producer Company Limited for Red Rice, Kidney Beans, Amaranth, Buckwheat and Rice Beans. Govt of HP Department of Agriculture is also interested to link their clusters in adjoin areas for bulk supply and sale of their produce under brand name Mountain Grains of the Farmer Producer Company. Local farmers supplied 100 Kg Red Rice with direct return of Rs. 15000/-. Also, 30-35% higher price was assured to farmers for their native grains over improved one. Under Gramin Haat brand, LCM earned a profit of 35.00 Lakh over 2-3 years and growing further with more value-added products identified from the project. Some of the varieties like Jeera phool, Nagri Dubraj, Vishnu bhog aromatic rice of Chhattisgarh. Jeera phool alone is being cultivated over 2,000 hectare and being sold ~ Rs 100-150 / kg at local and e-markets and also by new start up Krishi Yug. The selling price of native varieties after GI has increased significantly. Also, under Sahli brand MVDA has earned >6.00 lakh INR form value chains. Besides, the inputs requirement is also low as all native varieties are grown under organic environment while improved need heavy doses of fertilizers and extensive use of pesticides to get higher yield. Thus, these low input practices help in improving the over agriculture production ecosystem.
Component 2. Strategies and policies for sustainable conservation and use of crop diversity including access and benefit sharing		

Output 2.1 Establish national and regional policy platforms including involvement of ministries, local communities, indigenous organizations, farmers, private sector to promote leadership and mainstreaming of agricultural biodiversity conservation, use and benefit sharing	Complete	To review the various legislation related to ABS in India a National Webinar on “Implementation of Access to Plant Genetic Resources and Benefit Sharing (ABS)” was organized. The document prepared provides briefly the deliberations held during the meeting and the major recommendations which emerged on fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge and climate change. It summarises that India’s ABS system under BDA and BS system under PPV&FR Act needs to be addressed within the provisions under the national legislations (BDA and PPV&FR Act) keeping in view the compliance requirements to the international treaties (ITPGRFA and NP). This requires harmonization of regulatory systems concerning conservation and use of biodiversity resources, sustainable development, climate change and environmental protection. There is an urgent need for greater convergence and coordination among NBA, PPV&FRA, MoA&FW and MoEF&CC, besides the five National Bureaux on Plants, Animals, Fish, Microorganisms and Insects under ICAR. For this, a high-powered Inter- Ministerial Coordination Committee may be constituted to facilitate effective implementation of ABS provisions in India. The proposed committee could monitor BS under various instruments of access (BDA, PPV&FR Act, ITPGRFA and NP) to oversee that benefits reach bioresource(s) providers (farmer, researcher, breeder, community, village, district, state or country) when To visualize institutional and effective promotion of dynamic in situ on farm conservation management for food and nutrition security (FSN) and to establish suitable policy framework a Strategic Policy Dialogue on stepping forward for in situ on farm conservation promotion for food security and nutrition in South Asia region” was organized. We also participated and presented our value chains in Ninth Session of the Governing Body (GB9) of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) concluded in New Delhi in September 2022. Also, 28 trainings workshop on PPV&FRA and 53 meetings on access and benefit sharing were organized wherein 614 men and 652 women farmers and other officials participated. So far, 359 farmers’ varieties have been submitted for registration. Most importantly, 03 native varieties viz Jeera Phool, Vishnubhog and Nagri Dhubraj have been granted Geographical Indications. As a result, farming communities are benefiting as GI tag has enhanced their value and demand. For the management of biological resources at community level, 49 Biodiversity Management Committees have been formed and made aware of the provisions of the BDA while accessing the biological resources, which falls within their jurisdiction by an outside individual or organization
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Output 2.2 Analyse public policies, relevant instruments and regulations for identifying gaps and proposing incentives for sustainable use and conservation of crop diversity	Complete	To analyse public policies, relevant instruments and regulations a Strategic Policy Dialogue on Stepping forward for in situ on-farm conservation and promotion of food security and nutrition in South Asia was organised involving multiple stakeholders. The deliberations covered the following: • Identify and assess niche-specific agrobiodiversity rich areas and pockets. • Develop useful identifiers and indicators of agrobiodiversity richness and viability at local levels. • Investigate innovative actions and management practices aimed at identifying best practices for on-farm sustainable diversity management. • Discuss niche enhancement with improved varieties by using farmers' participatory decision-making approach. • Investigate practices to enhance farmers' economic empowerment through synergies between farmers and the food and nutrition value/supply chains • Policy status of worldwide genetic resource conservation, access, and benefit sharing for interdependent use • Agroecosystem management policy and priority setting for further research • Genetic resources emerge as a distinct discipline, and booster to achieve the global sustainable development goals (SDGs) by involving farmers and innovation • In situ on farm conservation to promote continued nature-farmer engagement • Aim at stimulating sustainable push of dynamic, climate-smart bioresources of agricultural importance for future market pull of food system ingredients • Farmers' welfare and empowerment: an effective tool for benefit sharing
Output 2.3 Develop and propose model agreements that regulate access and benefit sharing with farmers' communities and recognise the core principles of Access and Benefit Sharing (ABS)	Complete	India provided a benefit sharing (BS) model on commercial use of PGR 20 years before NP on ABS came into existence. Indigenous traditional knowledge of Kani tribals on a stamina builder herb Arogyapacha was used in developing a commercial herbal product Jeevani by Arya Vaidya Pharmacy and Tropical Botanical Garden and Research Institute (TBGRI), Palode, Kerala, and its commercial benefits were shared with the Kani tribe. Farmers, tribal and indigenous communities in India have been playing a critical role as conservers of bioresources and related traditional knowledge and they should be rewarded with monetary and/or non-monetary benefits. The purpose of ABS framework is to ensure that biological resources are accessed and used with Prior Informed Consent (PIC) from the providers and on Mutually Agreed Terms (MAT) between the providers and users. When commercial benefits are accrued, consequent to access and use of bioresources, the user needs to share them fairly and equitably with the provider. The Access and Benefit Sharing (ABS) guidelines under BDA, 2002 have come into force with effect from 21 November 2014 and consist of: (i) procedures for access to biological resources and/

		or associated traditional knowledge for research or bio survey and bio utilization for research and commercial utilization for foreign entities; (ii) mode of BS for commercial utilization (1 to 3% for the trader and 3 to 5% for the manufacturer); (iii) option of BS on sale price of the biological resources (from 0.1% to 0.5% based on annual gross ex-factory sale of product); (iv) procedure and mode of BS for transfer of results of research; procedure and mode of BS in intellectual property rights (IPR) cases (directly by applicant 0.2 to 1.0% through licensing 3 to 5%); (v) procedure and mode of BS for third party transfers (2 to 5%); (vi) determination of BS and sharing of benefits; (vii) processing of applications received by NBA and details of exemptions to access for prior approval of NBA or SBB. Scope of implementation of these guidelines is very vast in India. However, their implementation is limited to a few cases only, both in public and private sectors, and has sometimes led to legal conflicts with the private sector. Some challenges faced for operationalizing ABS in India include: (i) appropriate valuation of bioresources; (ii) correct interpretation of provisions and exemptions; (iii) harmonization across multiple implementing institutions and jurisdictions; and (iv) simplification of legal jargons and enhancing procedural transparency. Most critical challenge in implementing ABS under the NP mainly dealing with bilateral exchanges, is to assess the actual as well as potential economic value of resources before arriving at appropriate terms of BS. This is accentuated in cases where the assessment is done a priori. Absence of clarity on market value, its appreciation and temporal/spatial variations as well as industry demand and market reach can put the fairness and equity elements of ABS at risk. Often such situations lead to reluctance on part of users and disillusionment in providers. In view of above, a 'National Webinar on Implementation of Access to Plant Genetic Resources and Benefit Sharing' was organised to have in-depth deliberations involving all stakeholders from different sectors conserving and using biological resources. The objective was to understand the existing inconsistencies in the ABS system and suggest measures for improvements including policy reorientation. To suggest effective models of ABS to benefit both public and private organizations. Participants included users and providers of genetic resources such as communities, national and international gene banks, crop-based institutes, universities, and private sector companies with experience in both commercialization and regulatory systems involved for use of biological resources.
Output 2.4 National and regional strategies and plans on integrated sustainable agricultural improvement, use and benefit sharing of agricultural biodiversity developed and supported by implementation	Complete	Alliance of Bioversity International and CIAT under UN Environment implemented GEF project in collaboration with Indian Society of Plant Genetic Resources, Indian Council of Agricultural Research (ICAR), and Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA), organised National Conference on Plant Genetic Resources Management during November 22-24, 2022. The objective was to provide an opportunity to agriculture biodiversity (ABD) researchers, academicians, policy makers, students and farmers to present their research results, views and suggestions relating to current developments in agriculture biodiversity management and develop the roadmap for future and to contribute to making national strategy to sustainably conserve

programmes of work		and use agrobiodiversity to improve food and nutritional security. The key recommendations were: • There is need to develop and implement a comprehensive national policy on agrobiodiversity management that addresses issues related to conservation, sustainable use, access, and benefit-sharing. For this, National Advisory Board on Genetic Resources may be revived by ICAR as a single point advisory body on matters related to agrobiodiversity. • Encourage public-private partnerships and collaborations among stakeholders to promote innovation and investments. The challenges associated with PPP in genetic resources management, including issues related to intellectual property rights, equity, trust and access to ABD. • The governments should invest in strengthening the existing infrastructure for ABD management, such as gene banks and plant breeding institutes. This would enable efficient management and safe conservation and effective use of genetic resources for future generations. • Develop and implement a national database on PGR that can facilitate access to information and collaboration among stakeholders. • In-situ conservation involves conserving ABD resources in natural habitats, and this can be an effective way to conserve endangered species and local varieties. India needs to promote in-situ conservation and empower local communities to take charge of the conservation process. • Sustainable use of ABD involves ensuring that their use is not detrimental to the environment or to the communities that rely on them, thus promote sustainable use of genetic resources through community-based conservation, participatory plant breeding, and other approaches. • Encouraging research and development on ABD, especially on underutilized and neglected species. This can help identify new uses and applications for these genetic resources and enhance their value. Future programs should also focus on promoting areas such as gene mapping, molecular characterization, and identification of useful traits. • Capacity building and awareness creation can help create a cadre of experts and stakeholders who can contribute to ABD conservation and use. India needs to invest in capacity building and awareness creation to promote knowledge sharing and skill development for farmers, researchers, and other stakeholders on the importance of ABD. • Farmers are the primary custodians of ABD, and their participation is crucial for sustainable management. Future programs should focus on involving farmers in the collection, conservation, and utilization of genetic
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		resources. Strengthening the Biological Diversity Act would ensure that the access to and benefit-sharing of PGR are effectively addressed, and traditional knowledge associated with PGR is adequately protected. Future programs should focus on increasing public awareness through educational programs, outreach activities, and media campaigns
Component 3. Improved agricultural support systems, institutional frameworks and partnerships that support crop diversity on farm		
Output 3.1 Organise one national and eight regional level awareness raising campaigns on the value of agricultural biodiversity; its maintenance and use for resilient agriculture for different stakeholder groups including farmers, government ministries and agencies, policy makers, researchers, extension workers, teachers and consumers	Complete	We have many seminars and meeting and awareness raising campaigns on the value of agricultural biodiversity; its maintenance and use for resilient agriculture for different stakeholder groups including farmers, government ministries and agencies, policy makers, researchers, extension workers, teachers and consumers. Some of the important events have been listed below. • 13th International Conference on Dryland Development: Converting Dryland Areas from Grey to Green, 11-14 February 2019 • National Seminar on "Strengthening of Seed Systems in the Northeastern and Unreached Regions - Problems, Prospects and Policies", 3-5 February 2019 • National Consultation on 'Plant-based Local Food Systems for Health and Nutrition', 22 October 2021 • Indian Horticulture Summit-2020, 14-16 February 2020 • Tending Mendel's Garden for a Perpetual and Bountiful Harvest- A Symposium Commemorating Birth Bicentenary of Gregor Johann Mendel at New Delhi, India, 19-21 July 2022 • National Symposium on Food, Nutrition and Environmental Security: Towards Achieving SDGs at New Delhi, 29-30 August 2022 • 11th National Seed Congress- "Recent advances in research on Quality seeds for Self Sufficiency in Oilseeds and Pluses" at RVSKVV, Gwalior, 21-23 August 2022 • 1st National Conference on Plant Genetic Resource Management (NCPGRM 2022) at NASC Complex in New Delhi, 22-24 November 2022 • International Conference on "Reimagining Rainfed Agroecosystems – Challenges & Opportunities" at ICAR-CRIDA, Hyderabad, 22–24 December 2022 • International Conference on Food and Nutritional Security (iFANS-2023) at the National Agri-Food Biotechnology Institute, Mohali, Punjab, 6-9 January 2023 • International Conference on "Pluses: Smart Crops for Agricultural Sustainability and Nutritional Security (ICPulses2023)" at NASC Complex, Pusa Campus, New Delhi, 10-12 February 2023 • International Conference on "Innovations to Transform Drylands" at the International Crops Research Institute for the Semi-Arid Tropics (ICR International Conference on Development and Promotion of Millets and Seeds Spices for Livelihood Security" at the Agriculture University in Jodhpur, Rajasthan, 21-23 February 2023 • Regional Agricultural Fair "Parvatiya Krishak Maha Sangam Palampur-2023 at CSKHPKV, Palampur, 17-19 April 2023

		• International conference on biodiversity, food security, and sustainability & climate change" at Assam Agricultural University (AAU), Jorhat, Assam, 25-28 April 2023 • One-day workshop to release products developed under the project entitled "Mainstreaming agricultural biodiversity conservation and utilization in agricultural sectors to ensure services and reduce vulnerability" at Agriculture University, Jodhpur, Rajasthan, 19 May 2023 • G20 symposium on "Digital Agriculture" with Graphic Era Deemed to be University Dehradun, 28-29 August 2023 • International Seminar on "Exotic and Underutilized Horticultural Crops: Priorities & Emerging Trends" at ICAR-IIHR, Bengaluru, 17-19 October 2023 • International Conference on Biochemical and Biotechnological Approaches for Crop Improvement (IBBACI 2023) at the NASC, New Delhi, 30 October- 01 November 2023 • 10th Indian Horticulture Congress held at Assam Agricultural University, Khanapara Veterinary College Campus, Guwahati on the theme "Unleashing Horticulture Potential for Self-reliant India", Hyderabad, Telangana, 6-9 November 2023
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Output 3.2 Enhance capacities of researchers, extension and outreach staff, farming communities and local institutions in selecting and deploying adapted crop diversity through participatory approaches	Complete	In order to enhance capacities of researchers, extension and outreach staff, farming communities and local institutions in selecting and deploying adapted crop diversity through participatory approaches we conducted 342 trainings, 308 awareness workshops, 269 field days, 377 framers' interaction meetings and 78 cross learning exposure visits wherein 16838 framers comprising 9857 men, and 6981 women participated. Also, special capacity building programmes for extension scientists of farm science centres (called Krishi Vigyan Kendras (KVKs) and other line departments of states were organised at state level through regional seminars and workshops. We organised several capacity building programmes of project partners and other scientists and extension workers through various trainings and workshop. • Baseline survey workshop and field training rural household multiple indicator survey (RHoMIS) and use of format for nutrition survey for 24 hrs dietary recall survey • Training Workshop on Participatory approaches for mainstreaming crop diversity on farm and policies issues for PGR conservation and use • Workshop on Value Chain Development for Heirloom Crop and Varieties • Training Workshop on Role of GIS tools and techniques in plant genetic resources – mapping diversity and conservation • Training Session on Clim-Mob Software Version 3 • Training on Community Seedbank Management • Training workshop for the NARS scientists on Crop simulation modelling for managing agriculture under changing climates Improved agriculture support systems as created with a network involving 4 ICAR institutes, 5 State Agriculture Universities, 7 NGOs, 8 KVKs, 49 Biodiversity Management Committees, 197 Self Help Groups (SHGs) with member ship of 2588 of which 1980 women and 608 men farmers are closely working with 25 Farmers' Producer Groups and 23 private companies / startups on value addition and product development for improved adaptation and livelihoods. Farmers' Field Schools and Village Climate Risk Management Committees to promote use of crop diversity and resilience agriculture have been formed in core villages with 10-15 members (Mixed with Champion Farmers, Custodian Farmers and SHG Members) in each committee at various sites. In total, 75,119 farmers comprising 28392 men, and 46727 women farmers are using crop diversity 246 varieties for improved adaptation and livelihoods. Presently, the area under potential varieties is around >90,000 ha by involving ~75,000 farmers.
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Output 3.3 Strengthen research programmes that support mainstreaming of agricultural biodiversity and its improved use for ecosystem function, resilience and adaptability activities	Complete	Research programmes of the local organisations that support mainstreaming of agricultural biodiversity and its improved use for ecosystem function, resilience and adaptability activities were strengthened and scaled. The scientists of project partners organizations were also participated in various international conference and enhance their professional skills so that their research programmes can be strengthened. The conference attended include – • 21st Crucifer Genetics Conference (Brassica 2018) being organized at Saint-Malo, France from 01–04 July 2018 • 3rd International Tropical Agriculture conference (TropAg2019) held on 11-13 November 2019 at Brisbane, Australia • 15th International Symposium on Buckwheat - Buckwheat for health held at Institute of Soil Science and Plant Cultivation- State Research Institute, Pulawy, Poland • Delivering for Nutrition in South Asia: Equity and Inclusion D4N2023 held at Kathmandu, Nepal from November 1-2, 2023. • Competing pathways for equitable food system transformation: trade-offs and synergies.” at Humboldt-Universität Zu Berlin, Germany from the 20- 22, September 2023 In these conference scientists presented research findings of the project focusing on Mainstreaming Native Crops and Varieties for enhancing Nutrition, livelihood security and climate resilience. The have been using the experience and skill up-gradation acquired through participation for strengthening of on-going and initiation of new projects. To scale the project success, new projects have been initiated with national partners including new partners so that project results can be replicated. Few of the are "Empowering smallholder farmers by mainstreaming farmer varieties and their seed systems in the context of climate change, malnutrition and substantiable livelihoods in West Bengal" “Conservation and revival of agro biodiversity resources through Community Supported Agriculture for improved livelihoods, risk mitigation, seed sovereignty and nutrition security for rural communities” "Strengthening cultivar diversity of rapeseed mustard to manage climate related risks and foster productivity in stress prone areas of Central and Western India” "Pre breeding for genetic enhancement of chilli, beans and peas using crop wild relatives" "Farmers’ participatory approach for the conservation of Agro biodiversity through Mainstreaming of Native Crops varieties of North-Western Himalayan region" Also, under the Consumption of Resilient Orphan Crop Products for Healthier Diets (CROPS4HD) being implemented by the consortium of SWISSAID, Research Institute of Organic Agriculture, Alliance for Food Sovereignty in Africa and funded by Swiss Agency for Development and Cooperation (SDC) until 31.05.2031. Business model of the UNEP-GEF funded project and citizen science approach is being replicated under this project in India. In the 2nd phase project intends to work in East Africa (Tanzania), Central Africa (Chad), and West Africa (Niger) also. The proposed setup provides opportunities for different models to cross-fertilize each other and offers options for South-South knowledge transfer, thus increasing the chance of success
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Component 4: Project monitoring, evaluation and knowledge management		
Output 4.1 Finalise and disseminate project Monitoring and Evaluation Framework	Complete	The project's Monitoring and Evaluation (M&E) plan was aligned with UNEP's standard monitoring, reporting, and evaluation processes. Bioversity International, serving as the Executing Agency alongside the ICAR, ensured the timely submission of bi-annual and quarterly reports. A costed M&E plan integrated all associated expenses into the project budget. The National Project Steering Committee (NPSC) oversaw the implementation and provided strategic guidance. The plan adhered to the GEF Monitoring and Evaluation policy and included SMART indicators for effective tracking of project outcomes and impacts. Regular revisions and updates to the M&E framework were managed by the NPSC and UNEP to maintain the project's alignment with strategic goals and operational standards. Additionally, a Mid-Term Evaluation was conducted to assess project performance and implement necessary adjustments to achieve the intended outcomes efficiently and sustainably.
Output 4.2 Implement participatory Monitoring and Evaluation plan, tools, and methods with targeted communities, including necessary training	Complete	The participatory Monitoring and Evaluation (M&E) plan, tools, and methods were successfully implemented with targeted communities. This involved detailed training sessions to empower community members on how to effectively use these tools and methods. The participatory approach fostered community engagement and ownership of the project, enhancing the relevance and accuracy of data collected. This initiative not only improved project monitoring and evaluation at the community level but also ensured that the insights gained were rooted in local experiences and needs.
Output 4.3 Establish reporting plan and requirements	Complete	The reporting plan and requirements were successfully established, outlining clear guidelines and timelines for all project stakeholders. This structured approach ensured timely and consistent reporting, facilitating effective project management and oversight. The plan was integral in maintaining accountability and enabling precise tracking of project progress against established benchmarks.

Output 4.4 Organise and implement project Mid-Term Evaluation	Complete	The Mid-Term Evaluation (MTR) was successfully conducted to assess the project's progress and performance. The evaluation focused on several key areas: • Effectiveness and Efficiency: The review assessed the management and supervision of project activities, evaluating the effectiveness and efficiency of these processes. • Output Production: The MTR examined the quantity, quality, usefulness, and timeliness of planned outputs and milestones. • Performance: It evaluated project performance in achieving objectives and outcomes, including progress against quantified criteria and budget utilization (GEF & co-finance). • Sustainability and Replicability: The evaluation considered the sustainability and potential for replicability of project achievements. • Compliance: It reviewed compliance with environmental, social, and economic safeguards, including gender considerations. Based on these findings, the consultant and their team made recommendations for improving project implementation in the second half of the project. These included: • Adjustments to workplans and program activities • Confirmation or modification of key outputs, deliverables, and activity benchmarks • Need based revisions to the log frame, including indicators and targets • Recommendations on institutional arrangements and stakeholder engagement approaches • Suggestions for better achieving project objectives and outcomes These recommendations were aimed at optimizing project implementation and enhancing overall effectiveness.
Output 4.5 Organise and implement project Final Evaluation	Completed	Final report is under preparation
Output 4.6 Submit project technical and financial reports to GEF		The project management unit successfully submitted both technical and financial reports to the UNEP task manager as scheduled. These submissions detailed the project's progress, outlined the utilization of resources, and demonstrated adherence to planned milestones and budget allocations. The reports ensured compliance with GEF's monitoring standards and facilitated ongoing support and oversight.

Output 4.7 Establish and update project website to share experiences and information dissemination	Complete	The project website (https://alliance.indiaagrobdunepproject.cgiar.org/) was effectively launched and consistently maintained, providing a key resource for communication and information dissemination. It featured comprehensive updates on project milestones, significant achievements, and the latest research findings, ensuring all stakeholders and the public stayed informed. The site included dedicated sections for project components, target regions, budget details, events, publications, and a media gallery, enhancing transparency and stakeholder engagement. This central platform was pivotal in sharing experiences and supporting the project's extensive outreach and communication strategies.
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Output 4.8 Publish project related best-practices and lesson learned and develop plan for up-scaling and out-scaling of project outcomes	The project results were published in several form publication such blogs, popular articles, research papers, technical bulletins and proceedings etc. Use of social media was also made. More than 10 research papers were published. Also to scale the project success, new projects have been initiated with national partners including new partners so that project results can be replicated. Few of them are - "Empowering smallholder farmers by mainstreaming farmer varieties and their seed systems in the context of climate change, malnutrition and substantiable livelihoods in West Bengal" "Conservation and revival of agro biodiversity resources through Community Supported Agriculture for improved livelihoods, risk mitigation, seed sovereignty and nutrition security for rural communities" "Strengthening cultivar diversity of rapeseed mustard to manage climate related risks and foster productivity in stress prone areas of Central and Western India" "Pre breeding for genetic enhancement of chilli, beans and peas using crop wild relatives" "Farmers' participatory approach for the conservation of Agro biodiversity through Mainstreaming of Native Crops varieties of North-Western Himalayan region" Also, under the Consumption of Resilient Orphan Crop Products for Healthier Diets (CROPS4HD) being implemented by the consortium of SWISSAID, Research Institute of Organic Agriculture, Alliance for Food Sovereignty in Africa and funded by Swiss Agency for Development and Cooperation (SDC) until 31.05.2031. Business model of the UNEP-GEF funded project and citizen science approach is being replicated under this project in India. In the 2nd phase project intends to work in East Africa (Tanzania), Central Africa (Chad), and West Africa (Niger) also. The proposed setup provides opportunities for different models to cross-fertilize each other and offers options for South-South knowledge transfer, thus increasing the chance of success. Project tricot approach and business model of community seed banks is being replicated in the CGIAR Initiative on "Nature-positive Solutions for Shifting Agrifood Systems to More Resilient and Sustainable Pathways (Nature +)" in India, Kenya, Vietnam, Peru and Colombia. To scale the project results and success stories, three project proposals were also submitted to Government of India and state government. • Empowering smallholder farmers by mainstreaming farmer varieties and their seed systems in the context of climate change, malnutrition and substantiable livelihoods. • "Mainstreaming Native Varieties of Agricultural Crops especially Rice of Assam for enhancing climate resilience, nutrition, livelihoods and ecosystems services" for 05 years from 2024-2029. • "Mainstreaming Native Varieties of Agricultural Crops especially Rice of Assam for enhancing climate resilience, nutrition, livelihoods and ecosystems services" for 05 years from 2024-2029
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Component 5: Project Management		
Output 5.1 Establish arrangements for overall national project administration and implementation infrastructure including national coordination unit		The Project Management Unit (PMU) was established at the Bioversity International India Office to drive the effective execution of project activities. The unit consisted of a National Project Coordinator and a National Programme Assistant, forming the core team. To complement their efforts, thematic consultants were brought on board as needed, ensuring specialized expertise was available at crucial stages. The Project Management Unit (PMU) served as the central hub, effectively linking project sites with a diverse range of stakeholders and groups involved in the project. It played a key role in ensuring the timely achievement of project milestones, streamlining communication, and enhancing the project's visibility. The PMU's coordinated efforts were crucial to the overall success and impact of the initiative. Additionally, a Project Unit (PU) was established at ICAR-NBPGR in New Delhi to ensure seamless coordination with the national partner, led by the Project Coordinator from the NBPGR team.

Output 5.2 Establish project National Steering Committee and conduct regular meetings		A National Project Steering Committee was formed consisting of representatives of partner institutions (including UEP and Bioversity) and was chaired by Director General of Indian Council of Agricultural Research (ICAR). The NPSC meetings were held once every year to evaluate the overall progress of the project relative to the outputs and milestones expected; to provide strategic direction for implementation; and to ensure the necessary inter-institutional coordination. The NPSC constituted of: 1. Secretary, DARE & DG, ICAR Chairman 2. GEF Regional Programme Coordinator (CGIAR/FAO), UN Environment, Rome Co-Chair 3. Additional Secretary DARE and Secretary ICAR Member 4. Vice Chancellor, PAU, Ludhiana Technical Advisor 5. Joint Secretary (Seeds), Department of Agriculture & Cooperation, Mo&AFW, Govt. of India Member 6. Chairperson, PPV&FRA or representative of PPV&FRA not below the rank of Joint Secretary Member 7. Chairperson NBA or representative of NBA not below the rank of Joint Secretary Member 8. GEF Focal Person in MoEF&CC, Govt. of India Member 9. Deputy Director General (Extension) Member 10. Principal Secretary (Agriculture) or representative not below the rank of Joint Secretary/ Director of Agriculture (3 member states each time on rotation basis) 11. Vice Chancellor (partner Agriculture University (3 members each time on rotation basis) Member 12. NGOs representative (2 members each time on rotation basis) Member 13. Director of partner ICAR Institutes (one ICAR Institutes each time on rotation basis) Member 14. Director, ICAR-NBPGR, New Delhi Member 15. Regional Representative, Bioversity International, India Office Member 16. National Project Coordinator, UN Environment GEF, Bioversity International, India Office Member Secretary
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Output 5.3 Establish other relevant committees, including Site Committees and working groups and conduct regular meetings		A Technical Advisory Committee was formed to oversee the technical direction of the project. This committee comprised scientific experts and representatives from private sector. The TAC met once a year and provided technical direction to the project. Site Coordination Units were also set up for each project site to ensure effective implementation of project. The NPSC committee also include technical committee members while project sites committees were formed by the project partners.
Output 5.4 Establish and operate project budgeting and accounting system		The Project Financial Analysis & Support team (PLANS), and specifically a qualified PLANS Officer was in charge for the financial monitoring of the project. The tasks captured the monitoring of budget execution, liaison and advising the project technical team about financial aspects, review and clearance of sub-grantees financial reports, review and preparation of the quarterly financial reports and review and consolidation of annual co-financing and inventory reports to UNEP.
Output 5.5 Plan and organise project inception meeting to address capacity building related to relevant project methodologies, approaches and general technical guidance as well as project management and administration needs		From July 18 to 20, 2017, the Project Launch and Inception Meeting was held in New Delhi. The meeting was attended by all National Project Partners, representatives from UNEP-GEF, resource persons, and staff from Bioversity International headquarters and its India office. The primary purpose was to orient the national project partners and finalize the technical program, with a focus on implementation arrangements, reporting systems, management procedures, and the plan of action. Marieta Sakalian, Senior Programme Management Officer at the United Nations Environment Programme, shared the monitoring, evaluation, and reporting requirements. Additionally, focused group discussions were held on activity mechanisms, the work plan, and the roles and responsibilities of each partner.
Output 5.6 Finalise and disseminate project Communication strategy		The project communication strategy was fully implemented, successfully enhancing visibility, stakeholder engagement, and knowledge sharing. A dedicated project website (https://alliance.indiaagrobduneproject.cgiar.org/) was developed and regularly updated with key milestones, ensuring timely dissemination of information. Project results were presented at various national and international conferences, further expanding the reach and impact of the initiative. Research publications were a key component, with findings shared in peer-reviewed journals to ensure scientific credibility and broader dissemination within the academic community. Key project activities were also highlighted in the media, boosting public visibility. Additionally, blogs and success stories were published on both the UNEP and Alliance websites, showcasing project achievements. This comprehensive approach significantly raised the project's profile and achieved its communication objectives. Link to few blogs: https://www.unep.org/news-and-stories/story/indian-farming-biodiversity-success-story https://news.un.org/hi/story/2020/03/1022971 https://www.ipsnews.net/2021/06/with-a-little-help-local-communities-rack-up-record-success-with-heritage-rice-grains/

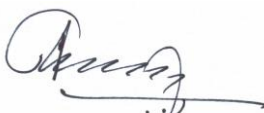
Output 5.7 Review and refine annual work plan with national project coordinator and national partners based on better understanding of local context in pilot sites and in-depth baseline		The annual work plan was thoroughly reviewed and refined in collaboration with the national project coordinator and national partners. This review was based on a better understanding of the local context in pilot sites and insights gained from an in-depth baseline assessment. The refined work plan was successfully implemented, addressing local needs and conditions more effectively. Adjustments made during this process helped to bridge gaps and leverage opportunities, significantly enhancing the plan's relevance and impact. This comprehensive revision contributed to the overall success of the project by ensuring that the work plan was well-aligned with the evolving project environment.
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2.2	List lessons learned and best practices We learnt that for successful implementation of any project some of the important steps include • Baseline survey questionnaire designed to understand the status and inter-linkages between agricultural biodiversity, farm livelihoods, household nutrition, climate change impacts and related eco-system services • To work on mainstreaming native crops and varieties with farmers is a big challenge especially to grow landraces because farmers will not be convinced unless they are assured of better incomes of their crops and varieties. • Triadic comparison of technology options (tricot) that we used in this project proved to be great success compared to Farm Level Demonstration (FLDs) generally used by the research institutes such as ICAR. Triadic is a research methodology that helps farmers to identify the most suitable technologies for the local conditions of their farm. Tricot (read: 'try-cot') engages farmers as 'farmer researchers' in the testing or validation of new crop varieties and other promising technologies. Tricot is supported by the ClimMob digital platform (https://climmob.net). This guide provides an introduction to tricot and each of the steps in the experimental cycle. • In India, the seeds of farmers' varieties and landraces are not part of the formal seed system but remain largely farmer-managed. Crop diversity plays a key role in small and marginal farmers' livelihoods, and it is a key source of food and nutrition, a buffer against environmental disturbances, and a cultural/spiritual treasure. By and large, community seed banks are small-scale local organizations that store farmer-managed seeds on a short-term basis and serve the needs of individual communities or several communities in a district. Such local efforts can have a multiplier effect if the community seed banks cultivate partnerships and engage in networking with multiple actors and share information and seeds with others in the informal and formal seed systems. • Under this project, the Alliance and partners established 32 new community seed banks in 17 sites, conserving a total of more than 3,000 farmers' varieties of >25 crops. For adopting best conservation practices at community level, 600 farmers were trained and designated as Champion farmers to manage community seed banks. • We tested more than 5,000 native varieties of 20 crops following a crowdsourcing approach developed by the Seeds4Needs program across four agroecological regions of India. This resulted in nearly 300 native varieties that are potentially suitable for addressing diverse needs, and which can be cultivated at scale within a nature-based production environment. To add value, nutrition profiling of selected landraces of target crops was undertaken. Apart from this, other activities such as branding, trademarking, tag-lining, packaging, labelling, food safety licensing and use of media platforms were organized. As a result, varieties and products marked with different brand names such as Dhartee Naturals, Gramouday, Hill Hatt, Native Basket, Natural Basket, Sahalee, and Mountain Grains, at different sites were developed by community seed banks. Community seed banks armed with such brand names sell native rice varieties at 30-35 per cent higher market rates compared with improved/commercial varieties. Over 30,000 farmer families are benefiting from the whole gamut of activities from production to processing and sale at different sites, thus ensuring post project sustainability • The most difficult part was to establish access and benefit sharing model / mechanism as per the guidelines laid by the National Biodiversity Authority of India.
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2.3	State how the project has nurtured sustainability. Is the project or project methodology replicable in other countries or regions? If yes, are there any concrete examples or requests? To ensure the functionality and post-project sustainability and for adopting best practices at community level, farmers were trained and a network of Self-Help Groups (SHGs), Farmers' Producer Organizations, private companies and local startups was established on value addition and product development for improved adaptation and livelihoods. To add value, nutrition profiling of selected landraces of target crops was undertaken. Apart from this, other activities such as branding, trademarking, tag-lining, packaging, labelling, food safety licensing and use of media platforms were organized. As a result, varieties and products marked with different brand names such as Dhartee Naturals, Gramouday, Hill Hatt, Native Basket, Natural Basket, Sahalee, and Mountain Grains, at different sites were developed by community seed banks. Community seed banks armed with such brand names sell native rice varieties at 30-35 per cent higher market rates compared with improved/commercial varieties. Over 30,000 farmer families are benefiting from the whole gamut of activities from production to processing and sale at different sites, thus ensuring post project sustainability Also, a meeting was held between CGIAR and Ministry of Agriculture and Farmers Welfare, Govt of India in 2023. The project technologies and results presented and as a follow up we were asked to submit a project proposal to replicate project success pan India. We have submitted a project "Empowering smallholder farmers by mainstreaming traditional varieties and their seed systems in the context of climate change, malnutrition and substantiable livelihoods". Also to scale the project results and success stories, two project proposals on "Mainstreaming Native Varieties of Agricultural Crops especially Rice of Assam and Chhattisgarh for enhancing climate resilience, nutrition, livelihoods and ecosystems services" for 05 years from 2024-2029 were also submitted.
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3. List of attached documents

(For example: publications, reports of meetings/training seminars/workshops, lists of participants, etc.) https://cgia-my.sharepoint.com/:f:/g/personal/gaurav_cgia_org/EoK7-I6fP4pKn_-o-Ry819sBtJ1_G01uWAp0BWawYfvMxQ?e=GeK4zB

Name of Division Director: Stephan Weise		Name of Project Manager: Jai C Rana	
Signature: 	Date: 11.12.2024	Signature: 	Date: 10.12.2024