

Environmental Monitoring Report

PUBLIC

#1 Semiannual Report (December 2022 to June 2023)
January 2024

Nepal: Nuts and Fruits in Hilly Areas Project

Prepared by Ministry of Agriculture and Livestock Development for the Asian Development Bank (ADB).

CURRENCY EQUIVALENTS

(as of 22 December 2023)

Currency unit	–	Nepalese Rupees (NRs)
NRs1.00	=	\$ 0.0075
\$1.00	=	NRs133.24

ABBREVIATIONS

ADB	–	Asian Development Bank
CGFMC	–	Credit Guarantee Fund Management Committee
CGMC	–	Competitive Grant Management Committee
CPMU	–	Central Project Management Unit
DG	–	Director General
DMF	–	Design and Monitoring Framework
DoA	–	Department of Agriculture
DoAD	–	Directorate of Agriculture Development
EMP	–	Environmental Management Plan
EMR	–	Environmental Monitoring Report
GAFSP	–	Global Agriculture and Food Security Program
GESI	–	Gender Equality and Social Inclusion
GESI-AP	–	Gender and Social Inclusion Action Plan
ha	–	hectare
IA	–	Implementing Agency
LLCC	–	Local Level Coordination Committee
MoALD	–	Ministry of Agriculture and Livestock Development
MoLMAC	–	Ministry of Land Management, Agriculture and Cooperatives
NAFHA	–	Nuts and Fruit in Hilly Areas Project
NARC	–	Nepal Agricultural Research Council
NCFD	–	National Center for Fruit Development
PFI	–	Partner Financial Institutions
PIUs	–	Project Implementation Units
PoP	–	Package of Practices
PPSC	–	Provincial Project Steering Committee
PSC	–	Project Steering Committee
SMC	–	Subsidy Management Committee
SMEs	–	Small and Micro Enterprises
SMR	–	Social Monitoring Report
SPS	–	ADB Safeguard Policy Statement (2009)
TA	–	Technical Assistance
TASF	–	Technical Assistance Special Fund
ToR	–	Terms of References

{WEIGHTS AND MEASURES}

ha (Hectare)	–	1 hectare is equivalent to 10,000 m ² area
--------------	---	---

NOTES

- (i) The fiscal year (FY) of the Government of Nepal and its agencies ends on 15 July. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY 2023 ends on 15 July 2023.
- (ii) In this report, "\$" refers to US dollars.

This environmental monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or Staff, and may be preliminary in nature. Your attention is directed to the "[terms of use](#)" section of ADB's website.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, ADB does not intend to make any judgments as to the legal or other status of any territory or area.

CONTENTS

1. Introduction	1
1.1 Project Description and Components	1
1.2 Discussion on the Location of the Project Components.....	3
1.3 Purpose of the Environmental Monitoring Report (EMR)	6
2. Institutional Arrangement	7
2.1 Description of the Institutional Arrangement/structure	7
2.2 Staff Concerned With Environmental Safeguard	10
3. Sub-Project/Package Descriptions	11
3.1 Upgrading of Horticulture Centers (under Output 1)	12
3.2 Private Nursery Participation in Nursery Quality Initiative (Under Output 1)	14
3.3 Enhancing Access to Rural Finance (under Output 2).....	14
3.4 Establishing Improved Orchards (under Output 2).....	14
3.5 Assessing and Verifying Carbon Sequestration (under Output 2).....	18
3.6 Developing Drip Irrigation Systems (under Output 2)	19
3.7 Matching Grant Component (under Output 3)	20
4. Statutory Environmental Requirements	24
5. Environmental Management Plan	25
6. Information Disclosure and Consultations	25
7. Grievance Redress Mechanism	25
8. Appendixes	32
1. EMP Adopted in bidding document of CW01 A Package	33

ATTACHMENTS

- (a) Attachment 1: EMP Adopted in bidding document of CW01 A Package

1. INTRODUCTION

1.1 Project Description and Components

The government of Nepal is implementing the Nuts and Fruits in Hilly Areas (NAFHA) Project with assistance of a US\$60 million loan and US\$10 million grant from the Asian Development Bank (ADB) and US\$9 million grant from the Global Agriculture and Food Security Program (GAFSP). The project will increase agricultural income of approximately 40,000 beneficiary farm households in 100 municipalities in hilly areas of five provinces – Koshi, Bagmati, Gandaki, Karnali and Sudurpashchim. This will be achieved through (i) the development of approximately 10,000 hectares (ha) of fruit and nut orchard, value-addition to nuts and fruits produced by 30,000 households, and institutional capacity building for nursery and horticulture sector management; and (ii) vegetable and other nutritious crop production in 1,000 ha and its marketing by 10,000 smallholder households who are not capable of investing in fruit and nut orchard development in the project provinces.

The project is aligned with the following impacts: (i) livelihoods of rural households improved; and (ii) resilience of farmers to climate change improved. The project will have the following outcome: beneficiary farmers' agricultural income from climate resilient horticulture farming increased. This will be achieved through improved nursery management, enhanced production and productivity in orchards, enhanced value addition and commercialization of fruits and nuts. The project will also support smallholders in the same project areas, who would not have been able to invest in commercial fruit and nut farming, to generate income through vegetable and other crop farming.

The project will have the following outputs¹:

Output 1: Institutional capacity for nursery and horticulture sector management improved. This output will ensure a sufficient supply of quality planting materials of fruit and nut crops in Nepal. At the national level, the project will (i) prepare nursery standards, regulations and an inspection system; (ii) upgrade horticulture station and/or center facilities for testing, cleaning and maintenance of planting materials, and nursery quality control; (iii) train horticulture station/center staff, and organize knowledge exchange programs and workshops to meet internationally accepted sanitary and phytosanitary standards; (iv) upgrade private nurseries to ensure healthy and quality material production, and transfer genetic technologies to private

¹Under the NAFHA project, there are six schemes that will require a review and approval of applications by appropriate committees (see Table 3 Project implementation related committees) of which operational procedures are set by the project. These six schemes are: (i) Scheme 1: credit guarantee fund scheme; (ii) Scheme 2: partial subsidies (grants) for farmers and cooperatives; (iii) Scheme 3: matching grants for cooperatives; (iv) Scheme 4: matching grants for agro-enterprises; and (v) Scheme 5: matching grants for local-level value chain infrastructure; and (vi) Scheme 6: matching grants for private nursery upgrading.

nurseries (scheme 6);² (v) commission research on more climate resilient and adaptable varieties of fruits and nuts; (vi) develop a nursery certification scheme and roll it out with volunteer private nurseries; and (vii) train and certify cooperatives and private input suppliers which service project clusters. At the provincial level, the project will support: (i) development of interactive crop suitability maps at crop variety level through integration of climate, soil, and landscape information; and (ii) land classification and zoning for orchard development. Output 1 will be implemented by Nepal Agricultural Research Council (NARC), National Center for Fruit Development (NCFD) and provincial Directorate of Agriculture Development (DoAD) in each of five provincial agricultural ministries.

Output 2: Production and productivity of project farmers increased. This output will develop approximately 10,000 ha of new orchards for almond, apple, avocado, citrus (lime, mandarin and sweet orange), kiwi, macadamia, pecan and walnut production, and enhance productivity through (i) preparation of the packages of practice incorporating climate analysis, soil management, variety recommendation and crop husbandry, drip irrigation and management, and overall orchard management including Good Agricultural Practices, integrated pest management, harvest techniques and storage;³ (ii) training all the beneficiary farmers in the packages of practice through (a) implementing agencies and farmer group facilitators, (b) private technical service and input providers, (c) farmer-to-farmer extension program, identifying lead farmers and training them to demonstrate climate change adaptation and best practices, and (d) digital technology based farm advisory system development and promotion.

The project will also provide financial support through (i) partial grants for the development of approximately 10,000 ha of new orchards and drip irrigation system (scheme 2);⁴ (ii) providing grant incentives to farmers based on plant survival rate; (iii) assessing and verifying carbon sequestration benefits from orchards, and exploring carbon financing options; and (iv) supporting beneficiary farmers' loan access by establishing and operationalizing a guarantee fund scheme (scheme 1) for smallholder horticulture farmers and rural agribusinesses, leveraging: (a) the full up-front investment loans, including working capital, from participating banks and

² Under the NAFHA project, there are six schemes that will require a review and approval of applications by appropriate committees (see Table 3 Project implementation related committees) of which operational procedures are set by the project. These six schemes are: (i) Scheme 1: credit guarantee fund scheme; (ii) Scheme 2: partial subsidies (grants) for farmers and cooperatives; (iii) Scheme 3: matching grants for cooperatives; (iv) Scheme 4: matching grants for agro-enterprises; and (v) Scheme 5: matching grants for local-level value chain infrastructure; and (vi) Scheme 6: matching grants for private nursery upgrading.

³ Good Agricultural Practices (GAP) are a set of standards of practices that address environmental, economic and social sustainability for on-farm processes, and result in safe and quality food and non-food agricultural products. Compliance with GAP is verified through a certification process carried out by the governmental sector or by private agencies.

⁴ The draft Business Promotion Act which was being reviewed by MOALD in August 2021 indicates that the maximum ceiling of subsidies for horticultural orchard development is 50%. The project aligns the subsidy level to this draft Act as requested by MOALD and sets the subsidy ceiling at 50% for farmers, farmer groups and cooperatives, and 40% for agro-entrepreneurs. Some provincial governments have a scheme with a higher subsidy level than 50% and if MOLMACs decide to follow their higher subsidy scheme, the difference will be financed by the provincial government.

financial institutions to farmers, farmer groups, cooperatives and agro-enterprises up to 1 year; and (b) the remaining loan of farmers, farmer groups and cooperatives up to 5 years.

Smallholders farmers with less than 4 ropani (0.2 ha) who are unable to invest in commercial fruit and nut orchard development under the project will be supported for irrigated off-season vegetables and wet season nutritious food crop production. Approximately 10,000 farm households will be eligible for this category. The GAFSP approved grants to finance the following activities: (i) vegetable grower identification and their capacity building through farmer group formation; (ii) extension of drip irrigation and rural financing support for vegetable and other crop production in 1,000 ha (part of scheme 2); and (iii) partial grants for the establishment of vegetable value-addition equipment and infrastructure at three different levels – cooperative (scheme 3), agribusiness through public-private partnership (scheme 4) and local levels (scheme 5). The World Food Programme will provide parallel financing of grants from GAFSP for establishing and operating farmer nutrition schools to access and utilize food for improved dietary diversity. Output 2 will be implemented by NCFD and provincial DOAD in each of five provincial agricultural ministries.

Output 3. Value addition to hilly area horticulture produce enhanced. The output will (i) promote agriculture/horticulture cooperatives to aggregate fruits, nuts and other crop produce, better manage quality of horticultural products and improve profits of smallholder farmers; (ii) strengthen those associations and cooperatives that are willing to invest in value addition activities through developing training programs and conducting training of cooperatives in post-harvest management, food safety control system such as Hazard Analysis Critical Control Point, financial management, business, marketing and entrepreneurship, while promoting female leadership; (iii) provide matching grants to support cooperatives' investment in value addition equipment for crop washing, sorting, grading, cooling, processing, packaging, and quality control (scheme 3); (iv) incentivize agribusinesses and service providers that collaborate with project beneficiaries by providing matching grants for improving, *inter alia*, traceability systems, certification systems, internet-based marketing, organic production and cold chain linkage (scheme 4); and (v) develop value-addition infrastructure such as commodity storage, collection center and orchard fencing that provide public good benefits by co-financing investments from provincial governments and local-level (scheme 5). Output 3 will be implemented by NCFD and provincial DOAD in each of five provincial agricultural ministries.

1.2 Discussion on the Location of the Project Components

The NAFHA project will finance the upgrading of 12 public horticulture stations/centers under NARC, Provincial governments as well as NCFD as shown in Figure 1. The main objective of this activity is to ensure that verified quality planting materials are provided to project farmers. The project is expected to contribute in long-term capacity building of these horticulture stations/centers that can serve

broader areas beyond the project’s targeted crops.

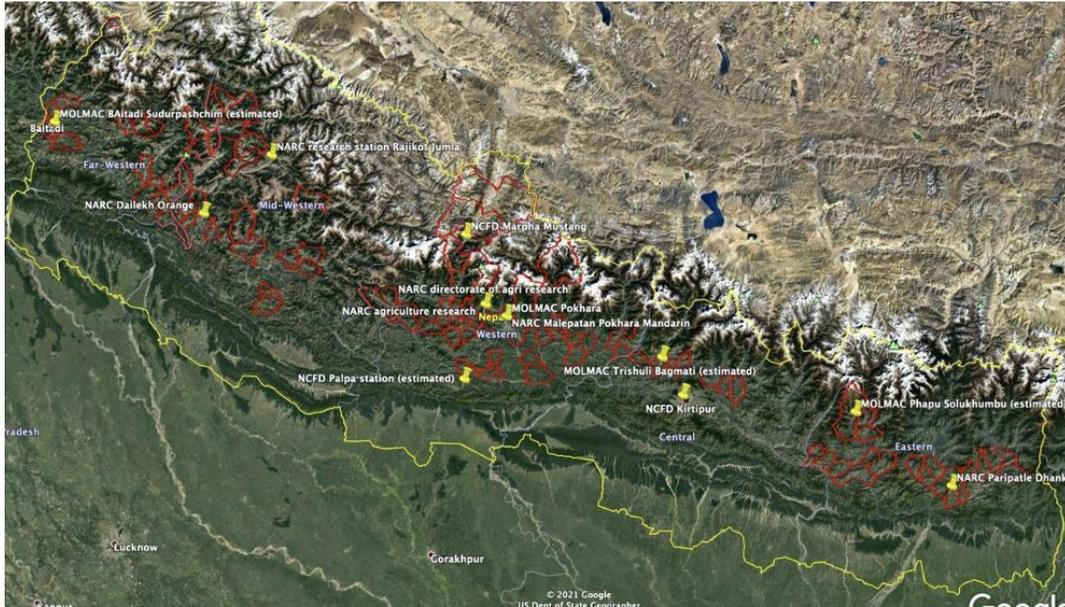


Figure 1: Map of Nepal with horticulture centers/stations planned to be upgraded under NAFHA Project

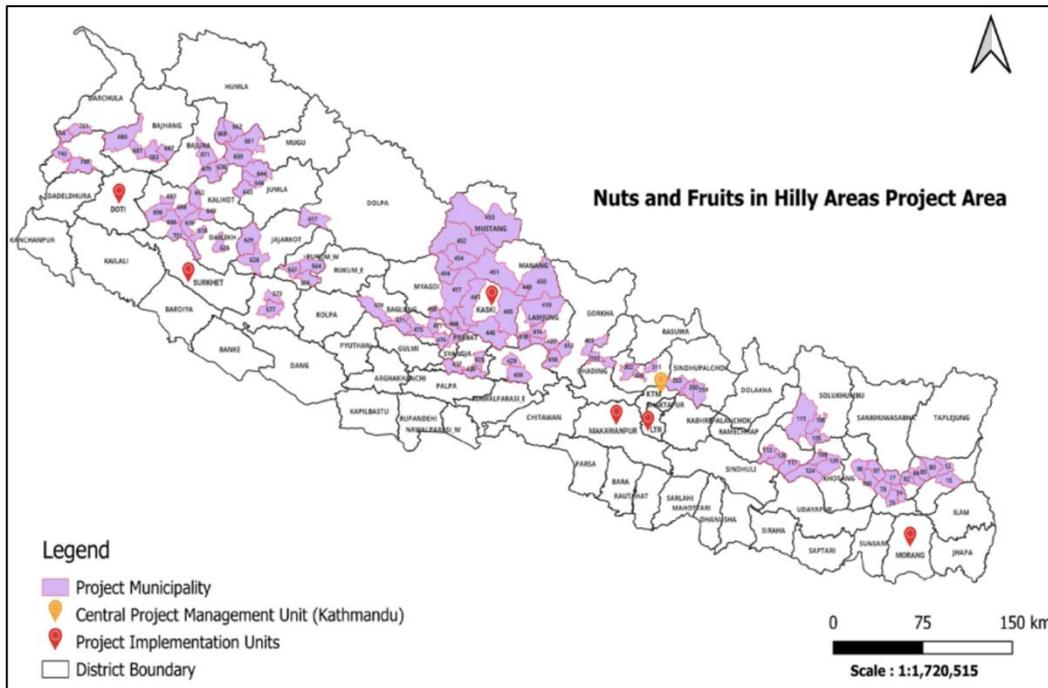


Figure 2: Map showing the target locations of orchards

The project supports production of the following key crops and horticulture station/center located in each target province as specified in Table 1:

Table 1: Province wise project targeted fruit crops, its area and station/center to be supported by the project

Province	Estimated project-supported orchards	Horticulture station/center to be supported by the project ⁴
Koshi	Apple 50ha Orange 900 ha Lime 500 ha Avocado 300ha Kiwi 400ha Walnut 50ha	MOLMAC, Phaplu Solukhumbu NARC, Paripatle Dhankuta
Bagmati	Orange 300ha Lime 300ha	MOLMAC, Trishuli Bagmati NCFD Kirtipur
	Avocado 150ha Macadamia 300ha Walnut 100ha	
Gandaki	Apple 100ha Orange 800ha Lime 750ha Avocado 150ha Kiwi 150ha Walnut 250ha Macadamia 250ha	NCFD Marpha Mustang NARC Directorate of agri research NARC Malepatan Pokhara MOLMAC Pokhara NCFD Palpa station
Karnali	Apple 1,450ha Orange 350ha Walnut 600ha Pecan 100ha Almond 100ha	NARC research station Rajikot Jumla NARC Dailekh Orange
Sudurpashchim	Apple 400ha Orange 250ha Lime 100ha Walnut 600ha Pecan 100ha Almond 100ha	MOLMAC Baitadi

The project will support the development of up to 10,000 ha of orchards across 5 provinces (Koshi, Bagmati, Gandaki, Karnali and Sudurpashchim) and in 100 municipalities within those provinces. Orchard crops that will be eligible for support include almond, apple, avocado, citrus (lime, mandarin and sweet orange), kiwi, macadamia, pecan and walnut. Farmers in project municipality will be able to choose amongst the 4 most suitable of these crops for their municipality. The list of participating municipalities and the eligible crops within the municipality will be publicly disclosed on the project website and project communication material.

During the reporting period CPMU is working on terms of reference (ToR) and cost estimate along with request for quotation (RFQ) document for the Project website and MIS with sapling tracking system. Project website development is integrated with the package of Project MIS and Sapling Tracking system as Package G01 L in procurement plan, Due to this reason Project Website development was delayed in implementation and not in operation during reporting period. The project documents have been inbuilt under NCFD's website with "NAFHA" sub-heading.

1.3 Purpose of the Environmental Monitoring Report (EMR)

The project is *categorized as B* for environment based on the due diligence and environmental assessment. The project has prepared an Initial Environmental Examination (IEE) for the project-financed components such as (i) orchard and vegetable areas development, (ii) drip irrigation development, (iii) improvement of horticulture center facilities and (iv) private nursery upgrading and interventions under the matching grant. Environmental management plan (EMP) for each component are prepared in the IEE.⁵ These EMPs outline measures to mitigate all anticipated environmental impacts during pre-construction, construction, and operation stages such as localized soil disturbance and moderate workers' health and safety risks. The EMP will be included in bidding documents and contract agreements of contractors, and guide beneficiaries for orchard development and nursery improvements. With support from consultants, PIUs at the provincial level will monitor and document the EMP implementation and report to ADB on semi-annual basis. During project implementation, beneficial environmental impacts are expected at the target orchard areas such as improvement of land-cover, creation of carbon sinks and soil-water conservation.

The project aims to support existing horticulture research centers/stations by upgrading or developing facilities to produce quality fruit and nut planting materials to (i) align with the international standards, (ii) commission research on climate resilient fruits and nuts varieties, and (iii) improve genetic technologies. There are potential minor occupational health and safety risks due to the small works under Output 1. Adequate environment safeguard measures will be included in the tender documents, which the contractor will comply with to mitigate potential environmental health and safety risks and impacts.

The EMRs, covering a 6-month period, have to be prepared and submitted semi-annually to ADB. The purpose of EMR is to:

- document the progress on the EMP implementation for each of the project components during both construction and operation stages;
- report environment safeguards activities starting from loan effectiveness until the end of the project;
- ensure that project investments comply with applicable national laws and regulations;
- monitor the recommendations in the IEE and measures in the EMP for environmental safeguard activities;
- document any grievances from affected people and resolutions thereof;
- document any public consultations during reporting period; and
- monitor environmental management activities in implementation

⁵ <https://www.adb.org/projects/documents/nep-48218-006-iee>

2. INSTITUTIONAL ARRANGEMENT

2.1 Description of the Institutional Arrangement/structure

The Ministry of Agriculture and Livestock Development (MOALD), Central Project Management Unit (CPMU) under national Centre for Fruit Development (NCFD), Nepal Agricultural Research Council (NARC), Directorate of Agriculture Development (DOAD) of provincial agriculture ministries in Koshi, Bagmati, Gandaki, Karnali, and Sudurpashchim Province are implementing the Nuts and Fruits in Hilly Areas Project (NAFHA) as agreed jointly between the Government of Nepal and ADB, and in accordance with the policies and procedures of the government and ADB. The overall project implementation arrangement is shown in the Figure 3.

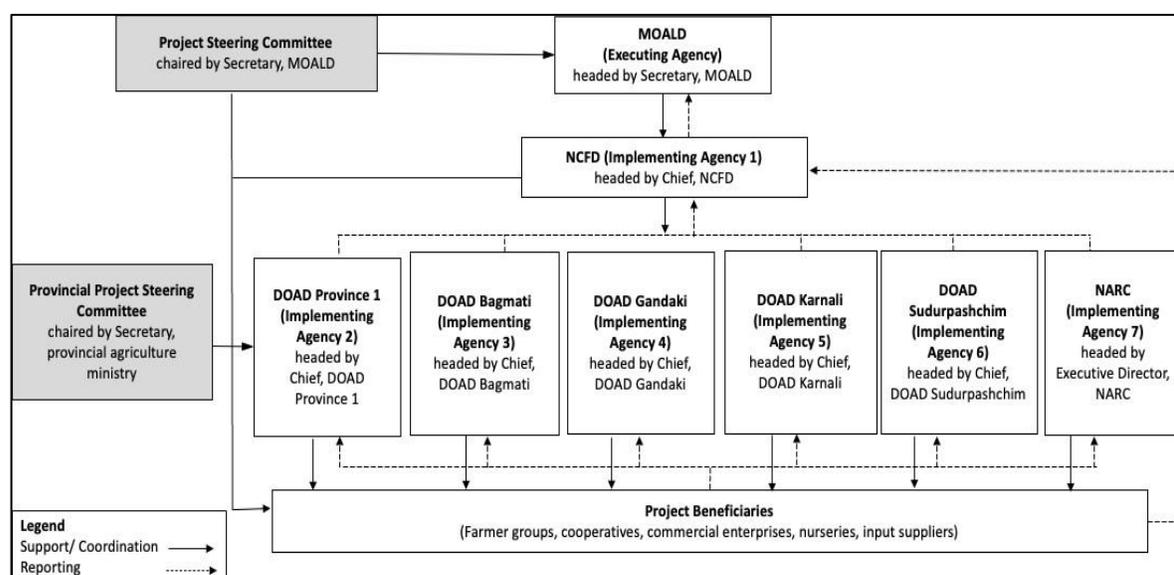


Figure 3. Project Implementation Structure

CPMU = Central Project Management Unit; DOAD = (provincial) Directorate of Agriculture Development; MOALD = Ministry of Agriculture and Livestock Development; MOF = Ministry of Finance; NARC = Nepal Agricultural Research Council; NCFD = National Center for Fruit Development; PIU = Project Implementation Unit

Source: Asian Development Bank.

Responsibility Project Steering Committee (PSC):

- Establish MOALD working group committee
- Ensure collaboration among federal, provincial, and local levels for the effective implementation of the project and address any implementation issues

- Ensure timely and effective implementation of project activities and achievement of project outcome, rectifying any problems that arise during implementation
- Promote policy, administrative and legislative reforms to achieve project's goals
- Review and endorse the annual project work program and budget, including conditional grants to the PIUs
- Review quarterly financial management reports, and semi-annual environment and social safeguards monitoring reports
- Review semiannual and annual project implementation progress reports
- Review internal and external audit observations and recommendations and monitor seven IAs' implementation of these recommendations in a timely fashion
- Monitor the use of credit guarantee fund and provide recommendations based on biannual review of the fund

Responsibility of PPSC:

- Review and approve the annual provincial-level work program and budget, coordinating with existing or new provincial programs and activities to maximize development impact of the project
- Ensure timely and effective implementation of project activities and achievement of project outcome, rectifying any problems that arise during implementation
- Coordinate with respective provincial agriculture ministry and NCFD in relation to effective project implementation, budget provision, and dispute resolution
- Coordinate among different participating local governments, AKCs and other relevant stakeholders to ensure effective project implementation
- Review internal and external audit observations and recommendations and monitor IA's implementation of these recommendations in a timely fashion
- Review quarterly progress report including financial management report and environment and social safeguards reports
- Review annual project implementation progress reports
- Discuss and select crop varieties for any of the project local level, if necessary, and select technically suitable ones among project-supported crops proposed with prior approval from CPMU

Executing agency (EA): MoALD has responsibility for overall coordination, implementation, and monitoring of the project. A working committee of the MoALD shall be established to discuss project matters within the EA.

Implementing agency 1: NCFD Supported by CPMU has responsibility to work as the secretariat to the MoALD/EA and as the overall project's focal point to ADB,

supported by the CPMU. In addition, the IA-1 will lead project implementation at the central level. Chief, NCFD will head CPMU as Project Director and serve as the focal contact with ADB.

Implementing agency 2 (PIU Koshi Province), Implementing agency 3 (PIU Bagmati), Implementing agency 4 (PIU, Gandaki), Implementing agency 5 (PIU, Karnali) and Implementing agency 6 (PIU, Sudurpaschim) established within DOAD of each province. PIU support each provincial IA (i.e. IA 2-6) for implementing provincial level activities. The PIU will be led by Chief of DOAD as Project Manager who will serve as the provincial-level focal.

Responsibility of implementing agency 7 (NARC) supported by project implementation unit 7 is responsible for

- Prepare an annual work plan and budget of project-supported NARC stations
- Monitor and ensure compliance with loan and grant covenants, and environmental and social safeguards, and facilitate the implementation of safeguard plans
- Ensure that the project-supported NARC stations' compliance with ADB's procurement regulations and upgrade horticulture station facilities for testing and cleaning mother plants, and generation-1 germplasm maintenance, utilizing budget in a timely manner
- Ensure implementation of the GESI/AP
- Coordinate project review missions and prepare progress reports
- Maintain separate book of accounts for the project, maintain separate control registers in an agreed format and prepare project financial reports and statements as required
- Support the project audit and address audit observations in a timely manner
- Submit claims and supporting documentation or copies of such documentation to the CPMU
- Support the CPMU to carry out baseline, midterm, and outcome surveys
- Contribute to the implementation of nursery standards, regulations, and inspection system
- Address grievances related to the project following the grievance redress mechanisms established

The Central Project Management Unit (CPMU), Provincial Project Implementation Units (PIUs) and NARC-PIU have been formally established and operational during this reporting period.

As per the PAM seven committees are to be established to manage various aspects of the project. These committees are: Project Steering Committee (PSC), Project Provincial Steering Committee (PPSC), MoALD working group committee, Competitive Grants Management Committee (CGMC), Local Level Coordination

Committees (LLCC), Subsidy Management Committees (SMC), Credit Guarantee Fund Management Committee (CGFMC).

1st PSC meeting was held on 29th March 2023 and MoALD working group committee (Chair, DG, DoA) has been established and endorsed. Project Provincial Steering Committee (PPSC) 1st meeting was held in Koshi, Gandaki, and Karnali Provinces only. Once the operational manuals are approved, then the rest of the committees (CGFMC, CGMC, SMC, LLCC) will be established.

2.2 Staff Concerned With Environmental Safeguard

Staff designated as environmental safeguard focal person by CPMU, provincial PIUs and NARC PIU is as shown in Table 2.

Table 2: Staff concerned with environmental safeguards.

Name	Designation/ Office	Environmental Safeguards Role/s	Contact Number/ email address
Madhu Sudan Ghimire	Agriculture officer, CPMU	<ul style="list-style-type: none"> Helps to monitor the utilization of recommendations in the IEE and measures in the EMP for environmental safeguard activities Coordinate to report environment safeguards activities 	9851348011/ madhusudhang48@gmail.com
PIUs			
Suprabha Pandey	Technical Officer, NARC	In coordination with CPMU and Project Director, ensure implementation and monitoring of the EMP, and prepare EMR of the project in coordination with CPMU.	9841018322 suprabhapandey52@gmail.com
Ganesh Kumar Rai	Agriculture Officer, PIU Koshi		9842070614 raiganesh2076@gmail.com
Modanath Timsina	Sub- Engineer, PIU Bagmati		9852041572 modanath2043@gmail.com
Binod Sharma	Agriculture Officer, PIU Gandaki		9856088253
Ramesh Khadka	Agriculture Officer, PIU Karnali		9857623693 Khadkar198@gmail.com
Janak Bohara	Agriculture Officer, PIU		9868461922

Name	Designation/ Office	Environmental Safeguards Role/s	Contact Number/ email address
	Sudurpaschi m		boharajanak50@gmail.c om
Consultants	Not assigned yet. The consultant hiring process under CS05 and CS06 packages are ongoing as of the reporting period.		

3. SUB-PROJECT/PACKAGE DESCRIPTIONS

The project is aligned with the following impacts: (i) livelihoods of rural households improved; and (ii) resilience of farmers to climate change improved.⁶ The project will have the following outcome: beneficiary farmers' agricultural income from climate resilience farming of fruits and nuts increased. This will be achieved through improved nursery management, enhanced production and productivity in orchards, and enhanced value addition in fruits and nuts.

Table 3: Salient features of NAFHA Project

Districts	1. <i>Koshi</i> : Panchthar, Terhathum , Dhankuta , Bhojpur, Khotang , Okhaldhunga and Solukhumbu 2. <i>Bagmati</i> : Sindhupalchok, Nuwakot and Dhading 3. <i>Gandaki</i> : Gorkha, Lamjung , Syangja, Tanahu, Kaski, Syangja, Parbat, Mustang, Myagdi and Baglung 4. <i>Karnali</i> : Rukum West, Salyan, Jajarkot, Dailekh, Kalikot, Jumla, Mugu, Humla and Dolpa 5. <i>Sudurpaschim</i> : Accham, Bajura, Baitadi, Bajhang and Darchula		
Targeted Numbers of Municipalities per Provinces	Koshi	7 districts	22 municipalities
	Bagmati	3 districts	8 municipalities
	Gandaki	10 districts	34 municipalities
	Karnali	9 districts	20 municipalities
	Sudurpaschim	5 districts	16 municipalities
Targeted Area	Total target area (ha)		10,000 and 1,000
	Average area per municipality (ha)		100
	Average area per municipality (ropani)		2,000
	Average households per municipality		300
	Average area per household (ropani)		6.7
Species proposed in (Ha) wise area	Apple		2,050
	Orange		2,600
	Lime		1,650
	Avocado		600
	Kiwi		550
	Walnut		1,600
	Macadamia		550
Pecan		200	

⁶ Government of Nepal. Ministry of Agricultural Development. 2016. [Agricultural Development Strategy 2015 to 2035](#). Kathmandu.

	Almond	200
	Vegetables and crops	1,000
	Total	11,000
No of Research Centers to be Upgraded	12	
Total Orchard Development Area	10,000 ha	
Total beneficial Households	30,000	

3.1 Upgrading of Horticulture Centers (under Output 1)

NAFHA Project will finance the upgrading of 12 public horticulture stations or centers of NCFD, Provinces and Nepal Agricultural Research Council NARC. The main objective of upgrading the horticulture centers is to ensure the verified planting materials are provided to project farmers. The project is expected to contribute to long-term capacity building of these horticulture stations/centers that can serve broader areas beyond the project's target orchards. During project implementation, upgrading of horticulture centers should comply with ADB Safeguard Policy Statement (SPS) 2009 requirements and relevant government policies.

For the execution of this activities discussion with concerned 12 horticulture centers/research stations was completed. During this reporting period, as per the understanding with ADB, holds these activities to implement till preparation of standard specification of high-tech structure as per the understanding with ADB to provide technical supports from ADM to design and cost estimates of the high-tech structures.

The project supports production of the following key crops and horticulture station/center located in each target province. Summarized as the following in Table 4.

Table 4. Salient features of the horticultural centers for upgrading under the proposed NEP: NAFHA Project.

Province	Estimated project-supported orchards	Horticulture station/center to be supported by the project⁷
Koshi	Apple 50ha Orange 900 ha Lime 500 ha Avocado 300ha Kiwi 400ha	MOLMAC Phaplu Solukhumbu NARC Paripatle Dhankuta

⁷ Temperate fruit and nut stations for almond, apple, kiwi, pecan, walnut; and Tropical and subtropical fruit and nut crop centers for avocado, citrus, macadamia

Province	Estimated project-supported orchards	Horticulture station/center to be supported by the project ⁷
	Walnut 50ha	
Bagmati	Orange 300ha Lime 300ha Avocado 150ha Macadamia 300ha Walnut 100ha	MOLMAC Trishuli Bagmati NCFD Kirtipur
Gandaki	Apple 100ha Orange 800ha Lime 750ha Avocado 150ha Kiwi 150ha Walnut 250ha Macadamia 250ha	NCFD Marpha Mustang NARC Directorate of Agriculture Research NARC Malepatan Pokhara MOLMAC Pokhara NCFD Palpa Station
Karnali	Apple 1,450ha Orange 350ha Walnut 600ha Pecan 100ha Almond 100ha	NARC research station Rajikot Jumla NARC Dailekh Orange
Sudurpashchim	Apple 400ha Orange 250ha Lime 100ha Walnut 600ha Pecan 100ha Almond 100ha	MOLMAC Baitadi

The type of horticulture station/center upgrade to be considered by the project will be limited to the following scope:

- High tech nursery/screen house;
- Shade house;
- Seed germination/soil sterilization chamber;
- Tissue culture facilities;
- Irrigation/rainwater harvesting/drainage;
- Staff residential building;
- Laboratory including pathogen testing, tissue culture;
- Office, training place and security guard house;
- Polymerase Chain Reaction analysis machine;
- Labour cost for terracing, separate mother plant block establishment, etc.;
- Vehicle (after completing cost comparison to rental);
- Nut cracking machinery for research; and
- NCFD office expansion

3.2 Private Nursery Participation in Nursery Quality Initiative (Under Output 1)

NCFD will prepare and advertise a call for proposals for private nurseries that are willing to participate in a volunteer private nursery quality control scheme. The scheme will be operational twice during the project implementation. The first batch will be 15 nurseries in 2024 and 25 nurseries will be supported in 2025. A total of 40 nurseries will be supported at the maximum value of \$25,000 for nursery facility expansion, enhancement and quality control system installation as matching grant.

The competitively selected private nurseries will be eligible for the project, through matching grant, for investments that upgrade the quality and quantity of seedling production. The project could finance, *inter alia*, the purchase of mother plants and disease-free rootstock, the installation of insect proof shade houses, drip irrigation systems, the expansion and upgrading of seedling growth areas, etc. The project's financing of up to 50% of the investment cost would not exceed \$25,000 per nursery. For these activities, the project is drafting the Scheme 6 Operational Guidelines during the reporting period.

3.3 Enhancing Access to Rural Finance (under Output 2)

On the average, the estimate of establishing a 1-hectare orchard under the project will require a \$4,000 investment, and approximately 10% of that amount for annual operating expenses. Although there is a project subsidy of 50% of the investment cost, orchard beneficiaries will still require loans for the full investment for at least 6 months to 1 year.

The project will support the design of an agri-financing mechanism that will ensure flow of both medium to long term capital for investment purposes as well as working capital financing for smallholder farmers, SMEs and other actors involved in the key agricultural value chains. The design will acknowledge the potential roles for commercial banks as well as smaller microfinance institutions such as local cooperatives and wholesale lenders. The project will set-up a compensating balance fund to cover qualified loans that financial institutions will disburse to project beneficiary farmer groups/cooperatives/agro-enterprises. The subsidy will cover establishing improved orchards and developing drip and non-drip irrigation systems.

For the implementation of the credit guarantee fund, ADB consultant is preparing the draft of the operational guidelines for implementation.

3.4 Establishing Improved Orchards (under Output 2)

The proposed project will support the development of up to 10,000 ha of orchards, and vegetable and other nutritious crop production in 1,000 ha across 100 municipalities within 5 provinces (Koshi, Bagmati, Gandaki, Karnali and Sudurpaschim). Orchard crops that will be eligible for support include almond, apple,

avocado, citrus (lime, mandarin and sweet orange), kiwi, macadamia, pecan and walnut. Farmers in any municipality will be able to choose amongst the 4 most suitable of these crops for their municipality.



(a) Almond



(b) Apple



(c) Avocado



(d) Kiwi



(e) Lime



(f) Macadamia



(g) Orange



(h) Pecan



(i) Walnut

Figure 4. Target horticultural crops under the NEP: NAFHA Project

Photographs sources:

- (a) <https://www.netafim.com/en/crop-knowledge/almonds/>
- (b) <https://www.insidehimalayas.com/where-find-freshest-apples-in-nepal-jumla/>
- (c) <https://www.agrifarming.in/avocado-fruit-farming>
- (d) <https://kathmandupost.com/money/2020/10/14/kiwi-farmers-in-eastern-nepal-told-not-to-harvest-immature-fruits>
- (e) <https://plantsnepal.com/lime-tree/>
- (f) <https://startupbizglobal.com/starting-macadamia-nuts-farming-business-plan-pdf/>
- (g) <https://kathmandupost.com/money/2016/01/14/junar-price-shoots-up-in-top-producer-sindhuli>
- (h) <https://www.agrifarming.in/pecan-seed-germination-time-temperature-process>
- (i) <https://www.efarm.live/products/walnut-plant-%E0%A4%93%E0%A4%96%E0%A4%B0>

All farm households in the selected 100 municipalities will be eligible to apply for a 50% subsidy support for orchard establishment. Small and medium enterprises will be eligible for 40% subsidy support. Selected beneficiaries will be required to establish the agreed orchard type and area before being eligible for the subsidy payment. Orchard areas developed by farmer groups will not be less than 20 ropani⁸ or greater than 500 ropani or the maximum subsidy payment of \$250,000, whichever is lower. Annex 2 shows the municipalities and corresponding potential crops.

The project will assist eligible beneficiaries to apply to banks for orchard development financing repayable over a five-year period, which, if negotiated with Class A banks, will be available at the prevailing government interest rate subsidy. The loan will cover up to 80% of the orchard establishment cost, with beneficiaries contributing at least 20% in cash. The subsidy, upon release, will be used to repay an equivalent proportion of the loan.

Table 5: Indicative target area (ha) per province

Province	Districts	Municipalities	% share of total	Target Area per province
Koshi	7	22	22%	2,200
Bagmati	3	8	12%	1,150
Gandaki	10	34	25%	2,500
Karnali	9	20	26%	2,600
Sudurpaschim	5	16	16%	1,550
Total	34	100	100%	10,000

⁸ One hectare = 19.65 ropani

Table 6: Indicative priority commodity per province.

Province	Apple	Orange	Lime	Kiwi	Avocado	Walnut	Macadamia	Pecan	Almond
Koshi									
Bagmati									
Gandaki									
Karnali									
Sudurpaschim									

Given the period to produce 2-year-old disease-free saplings and allow farmers to plan, the orchard plantations are scheduled for 3 batches. The batch-1 areas will be the pilot municipalities, and the learning from it will be used to make necessary adjustments for batch-2 and batch-3 plantations. Batches 2 and 3 will be implemented in the following years during the summer and winter seasons. Table 7 shows the target hectares per batch for every province based on the target crops.

For the execution of this output, project is preparing the Scheme 2 operational guidelines for the establishment of fruits orchard, after approval of the operational guidelines from MoALD with concurrence from MoF, project is planning to start these activities by 1st quarter of 2024 in Batch 1 local level (Table 8) for summer plantation of citrus.

Table 7: Target crops and area (ha) per province in different batches

Target Crop	Suitable Area (ha)	Target Area (ha)	Batch 1	Batch 2	Batch 3
Koshi					
Apple	100	50	-	50	-
Orange	1,691	900	-	400	500
Lime	12,035	500	-	200	300
Avocado	74,133	300	-	100	200
Kiwi	3,799	400	25	100	275
Walnut	631	50	-	50	-
Sub-total for Koshi		2,200	25	900	1,275
Bagmati					
Orange	20,240	300	-	100	200
Lime	9,472	300	-	100	200
Macadamia	15,292	300	-	100	200
Avocado	16,224	150	-	50	100
Walnut	200	100	25	75	-
Sub-total for Bagmati		1,150	25	425	700
Gandaki					
Orange	57,070	800	40	260	500
Lime	16,261	750	10	240	500
Walnut	2,461	250	-	100	150
Macadamia	69,701	250	-	50	200

Target Crop	Suitable Area (ha)	Target Area (ha)	Batch 1	Batch 2	Batch 3
Apple	2,919	150	-	100	50
Avocado	39,572	150	-	50	100
Kiwi	7,016	150	-	50	100
Sub-total for Gandaki		2,500	50	850	1,600
Karnali					
Apple	20,047	1,450	50	500	900
Orange	19,821	350	-	150	200
Walnut	31,924	600	-	200	400
Pecan	42,097	100	-	50	50
Almond	52,416	100	-	50	50
Sub-total for Karnali		2,600	50	950	1,600
Sudurpashchim					
Walnut	30,894	600	50	100	450
Apple	4,062	400	-	120	280
Orange	17,218	250	-	100	150
Lime	1,534	100	-	50	50
Pecan	41,576	100	-	50	50
Almond	38,382	100		50	50
Sub-total for Sudurpashchim		1,550	50	470	1,030

Table 8. Batch-wise project local level for fruit orchard establishment

Province	Districts	Municipalities	Batch 1	Batch 2	Batch 3	Total
Province-1	7	22	1	12	10	23
Bagmati	3	8	1	7	0	8
Gandaki	10	34	2	13	19	34
Karnali	9	20	1	9	10	20
Sudurpaschim	5	16	1	7	8	16
	34	100	6	48	47	101

3.5 Assessing and Verifying Carbon Sequestration (under Output 2)

The project will apply technical assistance resources to explore the development of a system for securing carbon credits from sustainable smallholder orchard production in Nepal. This work will include:

- studies on methodologies of carbon sequestration benefit measurement of project-supported fruit and nut trees;
- development of a measurement, reporting and verification (MRV) manual and the systematic application of those MRVs on pilot orchards;
- identification of private companies willing to investing in carbon neutrality and development of a model agreement; and

- preparation of the manual on the carbon credit utilization for participating farmer communities.

During the preparations of this EMR, the system of assessing and verifying carbon sequestration benefits from orchards is not yet established.

3.6 Developing Drip Irrigation Systems (under Output 2)

To support crop establishment and to sustain production, NEP:NAFHA Project will support the development of drip irrigation systems on target orchards. The rationale for drip irrigation is based on efficiency of water use, suitability for the topography, accuracy of application and ease of operation.

The drip system comprises five main elements:

- drippers and laterals
- submain
- main
- headworks
- header tank

For cropped areas of 5 ropani or less the drips and lateral will be replaced by hoses, as the irrigated area can readily be managed by manual watering. Both the submain and main are installed below ground level for system resilience, and the lateral with drips above ground along the tree rows. About 25% of participating farmers are expected to plant 4 ropani orchards without drip irrigation.

The drippers will be progressively installed commensurate with tree growth, initially two per tree and additional drippers installed (up to 1 per metre) in subsequent seasons with canopy growth. Drippers could be standardized and pressure compensating but also equipped with small connection pipes for maximum flexibility. The pipes should have minimum hydraulic resistance, maximum flexibility, and easy leak-free connectivity between pipes. The lateral pipe should be flexible and allow for dripper insertion, mains and submains should be high impact resistant and cost-efficient. Cost-efficient with regards to the installation in the short term and for operational and maintenance costs (pumping- and repair/replacement) in the long term. The headworks include a screen filter (120 mesh) for removal of organic matter. Depending on the water quality more filters might be needed.

The system components will be specified in terms of materials and performance to ensure system reliability and sustainability. The supply and installation of the system will be supported technically through the provision of technical service providers, who will work in collaboration with the Municipality and grower/community association.

Pilot plots will be established in the initial project year for the purposes of demonstrating the installation and operation and maintenance of the drip systems.

These plots will serve as sites for capacity building of farmers prior to the roll out of the orchard development.

Implementation of this activities is not started yet and plan to execute in 2024 and 2025. Project will prepare and approve the operational guidelines by 2024 from MoALD after receiving concurrence from MoF.

3.7 Matching Grant Component (under Output 3)

The project is preparing the operational guidelines for the execution of this activity and planning to execute in 2025. Project components that will entail civil works are stated in Table 9 with progress status till the reporting period.

The project will establish four competitive matching grant programs: (i) private nursery upgrading; (ii) improved cooperative value addition grant; (iii) public-private infrastructure grant; and (iv) strengthened local level infrastructure grant.

Private nursery upgrading (Output 1): There will be up to 40 selected private nurseries eligible for matching grants for investments to upgrade the quality and quantity of seedling production. The matching grant will finance, *inter alia*, the purchase of mother plants and disease-free rootstock, the installation of insect proof shade houses, drip irrigation systems, the expansion and upgrading of seedling growth areas, etc. Matching grant financing of up to 50% of the investment cost would not exceed \$50,000 per nursery. The project is preparing the operational guidelines for the execution of this activity and planning to execute in 2024.

Improved cooperative value addition: Cooperatives who will participate in the project-implemented cooperative development and capacity building program and have the interest to invest in nut and fruit marketing/value addition (e.g., harvesting handling equipment, primary washing, sorting, grading machinery, packaging equipment, short-term storage, marketing) could be eligible to compete for financing, which will finance up to 50% of approved investment cost. The project is preparing the operational guidelines for the execution of this activity and planning to execute in 2025.

Public-private infrastructure: Agribusinesses and service providers interested in collaborating with cooperatives in nut and fruit value addition and market development will be eligible to compete for financing for the matching grant. Investments can include "hardware" such as infrastructure and equipment as well as "software" such as traceability and certification systems, internet-based marketing, organic production, and other services. Areas of investment could include, *inter alia*: (i) innovative business, market and service linkages and market promotions activities; (ii) joint investments in and management of facilities and associated innovative contract or pricing mechanisms; (iii) technology for climate adapted productivity enhancement and value addition in the area of production, post-harvest handling, processing, packaging, transportation and marketing; (iv) aggregator models linking

rural cooperatives to higher value urban markets including supermarkets; (v) joint investments in distribution and sales networks; or (vi) certification systems – organic certification, geographic indication, farm to fork traceability, etc.

Strengthened local level infrastructure: The project will support local-level applications for grants for market-linked infrastructure investments that provide public good benefits essential to targeted nut and fruit value chain engagement and/or climate change adaptation at the local level. Public good infrastructure investment sub-projects would be identified and prioritized through: (i) municipality infrastructure plans; (ii) municipal-based cooperative and farmer group development needs; and (iii) local and regional agribusiness development requirements. Investments could include, *inter alia*, public utility connection for project supported investments, commodity storage, market/collection centers, farmer group orchard fencing or collective irrigation water access investments. The project is preparing the operational guidelines for the execution of this activity and planning to execute in 2025.

The matching grant components will follow the recommendations in the IEE and EMP. Proposals under the matching grant having potential adverse environmental impacts will not be financed by the project's matching grant. The matching grant and subsidized orchard development components will:

- (ii) ensure that sub-project investments comply with the requirements of ADB SPS 2009 and applicable national laws and regulations;
- (iii) apply the prohibited investment activities list of ADB SPS 2009 to sub-projects financed by ADB;
- (iv) not finance sub-projects that are categorized as A for environment;
- (v) utilize recommendations in the IEE and measures in the EMP for environmental safeguard activities; and
- (vi) monitor environmental management activities during implementation.

Table 9. Summary of the Project components that will entail civil works.

Project component	Output	Remarks	With civil works? (yes or no)	Progress status
Upgrading of Horticulture Centers	1	Improvement of operation and production of high-quality planting materials.	Yes	Not started yet
Private nursery participation in nursery quality initiative	1	Improvement of operation and production of high-quality planting materials.	Yes	Not started yet
Enhancing Access to Rural Finance	2	Design an agri-financing mechanism to ensure flow of	No	ADB consultant is preparing

Project component	Output	Remarks	With civil works? (yes or no)	Progress status
		capital for investment and working capital in the agricultural value chains.		the operational modality and related documents
Establishing Improved Orchards	2	Development of orchards (10,000 has) and vegetable areas (1,000 has) across 100 municipalities within 5 provinces	Yes	Preparation of operational guidelines for Scheme 2 is ongoing
Assessing and Verifying Carbon Sequestration	2	Development of a system for securing carbon credits from sustainable smallholder orchard production in Nepal.	No	Not started yet
Developing Drip Irrigation Systems	2	Water will be supplied to orchard and vegetable areas through drip irrigation	Yes	Not started yet
Matching Grant Component	3	Project will support cooperatives, agri-enterprises and private nurseries	Yes	Not started yet

Construction Packages are concerned with the upgradation of horticulture station and/or center facilities for testing, cleaning and maintenance of planting materials, and nursery quality control (Table 10). For the execution of this packages discussion with concerned horticulture centers/research stations was completed. Holds these activities to implement till preparation of standard specification of high-tech structure as per the understanding with ADB.

Table 10. Summary of project packages

Package Number/Name	Construction Locations	Target date of Contract Awarding	Target date of the start of the works	Progress status
CW01-A/ Horticulture center/station upgrade	THDC, Marpha Mustang	24 May 2024	10 June 2024	Bid issued, 2 bid received, technical bid non compliant,

Package Number/Name	Construction Locations	Target date of Contract Awarding	Target date of the start of the works	Progress status
CW01-B/ NCFD high-tech nurseries	THDC, Marpha; CFDC Palpa and WTHDC Kirtipur	24 July 2022	10 August 2024	Not started yet
CW02/Horticulture center/station upgrade– NARC Horticulture Research Station, Malepatan; and Directorate of Agriculture Research, Lumle, Gandaki	NARC Horticulture Research Station, Malepatan; and Directorate of Agriculture Research, Lumle, Gandaki	24 May 2024	10 June 2024	Not started yet
CW03/Horticulture center/station upgrade - NARC Horticulture Research Station, Dailekh; and Horticulture Research Station, Rajikot, Karnali	NARC Horticulture Research Station, Dailekh; and Horticulture Research Station, Rajikot, Karnali	24 May 2024	10 June 2024	Not started yet
CW04/Horticulture center/station upgrade–NARC National Citrus Research Program, Paripatle, Dhankuta (Koshi)	NARC National Citrus Research Program, Paripatle, Dhankuta, Koshi	24 May 2024	10 June 2024	Not started yet
CW05/ Horticulture center/station upgrade–Dry Fruit Development Center, Baitadi, Sudurpashchim	Dry Fruit Development Center, Baitadi, Sudurpashchim	24 Jul 2024	10 August 2024	Not started yet
CW06/ Horticulture center/station upgrade– Horticulture	Horticulture Center, Phaplu, Solukhumbu, Koshi	24 Jul 2024	10 August 2024	Not started yet

Package Number/Name	Construction Locations	Target date of Contract Awarding	Target date of the start of the works	Progress status
Center, Phaplu, Solukhumbu, Koshi				
CW07/ Horticulture center/station upgrade– Subtropical Horticulture Development Center, Trisuli, Nuwakot, Bagmati	Subtropical Horticulture Development Center, Trisuli, Nuwakot, Bagmati	24 Jul 2024	10 August 2024	Not started yet
CW08/ Horticulture center/station upgrade– Horticulture Development Resource Center, Pokhara, Gandaki	Horticulture Development Resource Center, Pokhara, Gandaki	24 May 2024	10 June 2024	Not started yet

4. STATUTORY ENVIRONMENTAL REQUIREMENTS

The project is set to implement six different schemes (Scheme 1, 2, 3, 4, 5 and, 6) which has some uniqueness in its nature like importation of germplasm from outside the country, registration of fruit cultivars in national seed system, quarantine regulations for distribution of imported saplings to beneficiary farmers etc.

Besides that the project has to approve the operational guidelines to implement the project schemes unique to the project objectives and requirements.

Environmental screening checklist (developed in consultation with the ADB team) is prepared for the screening of the applicants (Farmers, Farmers' group, Cooperatives, Private Nurseries) under guidelines of the Scheme 2 and Scheme 6 operation. LLCC, SMC and CGMC will be responsible for the screening of the checklist as per the provisioning in Operational Guidelines of Scheme 2 and 6. Project is preparing the draft of the operational guidelines for Scheme 2 and Scheme 6. There is no national/local environmental statutory environmental requirements for the project implementation till the reporting period (Table 11)

Table 11. National/local environmental statutory environmental requirements

Statutory Environmental Requirements⁹	Title of National/Local Policy	Issuing Office	Responsible Agency
Not any	NA	NA	NA

5. ENVIRONMENTAL MANAGEMENT PLAN

The Project has adopted the environmental management plan as provisioned in the IEE of NAFHA Project. PMU will use applicable EMP based on the packages as categorized in the IEE.

So far till the reporting period (December 2022 to June 2023), CPMU have prepared only one bidding document on CW01 A package which included the EMP (Table 12) as attached in Attachment 1. During the reporting period, bid was issued for the CW01 package and received 2 bids, both of them were non-compliant. Based on the consultation with MoALD, NCFD and National Center for Potato, Vegetables and Spice Crops Development (NCPVSCD) project has decided to utilize eight rooms at the ground floor of NCFD office complex previously used by NCFD and NCPVSCD for CPMU office use. So, project recommended to drop the activity of NCFD office expansion and repackage the CW01 A to include horticulture center upgrade at Marpha, Mustang only with letter of request dated on 18th June 2023 about CWo1 A repackaging.

Table 12. Summary of EMP in the bidding documents prepared during December 2022 to June 2023

Package Number/Name	EMP in the bidding documents?		CPMU/PIU Remarks (especially if EMP not included in bidding documents)
	Y	N	
CW01 A	Yes	-	-

6. INFORMATION DISCLOSURE AND CONSULTATIONS

The Project is at an early stage of implementation so no such disclosures have been made regarding the environmental safeguards. However, CPMU has made consultations with stakeholders at various levels starting from at local levels to national levels.

7. GRIEVANCE REDRESS MECHANISM

The project will establish and maintain a grievance redress mechanism (GRM) to support the social and environmental safeguards of the project. The GRM will receive,

⁹ Specify statutory requirements: environmental clearance, Permit/consent to establish, Forest clearance, Workers/Labor permit, etc.

evaluate, and facilitate the resolution of impacted people's feedback, including concerns, complaints, and grievances about the social and environmental performance at the level of the Project. The GRM aims to provide a time-bound and transparent mechanism to voice suggestions and appreciations and to resolve social and environmental concerns linked to the project. The project specific GRM is not intended to bypass the government's own redress process, rather it is intended to address stakeholders' concerns and complaints promptly, making it readily accessible to all segments of the community, and is scaled to the risks and impacts of the project. Complainants may access the formal legal system at any time. A dedicated multi-tier GRM will be established to receive, evaluate, and facilitate the concerns and complaints of the affected people if any about the social and environmental performance at the project level. The GRM will aim to provide a time bound and transparent mechanism to voice and resolve social and environmental concerns linked with the project. The GRM shall aim to ensure:

- i. The basic rights and interests of every person affected by poor environmental or social performance of the project are protected;
- ii. Concerns arising from the poor environmental or social performance of the project during the conduct of pre-construction, construction and operation activities are effectively and timely addressed; and
- iii. There is zero tolerance on Sexual Harassment, exploitation, and abuse (SHEA) during all stage of the project.

Drafting of GRM guidelines is ongoing. Till the reporting period the GRC was not formally established. It will be effective only after the approval of GRM guideline.

As per the PAM, GRM will be established with the formation of Grievance Redress Committees (GRC) at three levels: i.e., ward/municipality level, province level and CPMU level.

The ward/municipality(community) level GRC will comprise of the:

- Coordinator- Mayor/chairperson of local level
- Member- Chief Administrative Officer
- Member - Representatives of women and disadvantaged groups,
- Member - A selected representative from the affected community (if applicable);
- Member - A representative from local CBO/NGO or civil society
- Member- PIU Grievance handling focal person
- Member Secretary- Grievance handling focal person (local level)

The Province level GRC will comprise of the:

- Coordinator- Secretary of provincial agriculture ministry
- Member - Representative of Ministry of Social Development
- Member – Representative provincial agriculture ministry
- Member - PIU Gender equality and social inclusion (GESI) Specialist
- Member- A selected representative from the affected community (if applicable).
- Member Secretary- Grievance Handling Focal Person (PIU)

The CPMU level GRC will comprise of the:

- Coordinator-Joint Secretary, MOALD;
- Member- Project Director
- Member – Under-secretary (law), MoALD
- Member - Under-secretary (good governance), MoALD
- Member – Representative (under-secretary) of DoA
- Member – GESI focal person, CPMU
- Member – Social safeguard focal person (CPMU)
- Member Secretary – Grievance handling focal person (CPMU) .

All persons involved in project implementation will be trained on how to receive and handle feedback, and how to keep it confidential.

The grievance handling process will involve five steps: (1) intake; (2) sorting; (3) verification; (4) action; and (5) follow-up and monitoring.

Step 1: Intake. A grievance can be filed by anyone, and through different means:

- Verbal communication to a ward/municipality feedback focal point, and/or designated and trained block or district DOH and DIPH feedback handling officers
- Using a feedback envelope and the suggestion box placed at each ward/municipality meeting place/office. The elected ward/municipality feedback handling focal person opens the feedback box at least every week and sends the report to the GESI focal person. Each box is equipped with two locks, with one key each held by the ward/municipality
- Feedback handling officers and with GESI specialist/focal person respectively. Feedback/grievance envelopes from the box must be opened in front of at least two people – e.g., ward/municipality grievance redress officers and Secretaries/ PIU GESI specialists/ FP
- Letters to the MOALD at federal and agriculture ministry at province level, ward and municipality offices, and the CPMU at province level
- At meetings and monitoring visits
- E-mails to dedicated e-mail addresses of the MOALD, provincial ministries and the CPMU and PIUs;
- A dedicated phone line for CPMU and PIUs

On each province and municipality government website they must conduct "social accountability "that enables a citizen to lodge a complaint through the feedback form under the contact section. A dedicated section for grievance handling on the project website, also linked to MOALD, provincial ministry/DOAD and ADB sites. Feedback or complaints can be sent at any time to any level (e.g., a grievance can be directed to the ward/municipality, province and central level). If a grievance is related to a community, the complaint is encouraged to report to the province level. If a grievance is related to the province, it is suggested to report to the CPMU level.

At the community level, the elected ward/municipality feedback handling focal persons are the regular primary contact for anyone who wishes to file a feedback/grievance. If an individual prefers, feedback or grievances can be sent to GESI staff involved in the project implementation, such as PIU GESI focal person/ specialists or CPMU social safeguard/ GESI specialist.

Any staff receiving grievances must complete the project grievance form and submit it without delay to the assigned province feedback handling focal point.

At the federal level MOALD, MOF or CPMU staff receiving grievances must complete the project grievance form and submit it without delay to the grievance-handling officer of the PMU.

Step 2: Sorting. The CPMU Monitoring and Evaluation (M&E) officer will maintain a feedback recording system in the project Management Information System (MIS). Feedback will be divided into eight categories:

Category 1: General inquiries

Category 2: Feedback regarding violations of policies, guidelines and procedures

Category 3: Feedback regarding contract violations/breach of contract

Category 4: Feedback regarding the misuse of project funds

Category 5: Feedback regarding abuse of power/intervention

Category 6: complaints against Sexual harassment, exploitation and abuse

Category 7: Reports of force majeure

Category 8: Suggestion

Category 9: Appreciation

The CPMU Social Safeguards specialist will be responsible for categorizing feedback received at the federal level and entering it into the project MIS. Till the reporting period project is working on draft bid document for establishment of Project MIS. MIS is not established yet and so not in operation !The municipality level feedback focal points will categorize feedback received at the ward/municipality level and any feedback referred upwards by ward/municipality chairpersons and enter it into the project MIS. Feedback received at ward/municipality level that can be managed locally will be maintained in ward/municipality records and periodically entered into the MIS by the PMU M&E team.

Once a grievance has been received, the relevant feedback handling focal points decide how to handle it, including the time frame within which the case should be resolved, with a time frame not exceeding 60 days. Feedback relating to:

- a community issue will be handled by the ward/municipality chairpersons. To the extent possible, community feedback/complaints should be addressed at the ward/municipality GRC level, however, the community FHC chairpersons can refer grievances upward to the province GRC;

- a block issue will be handled by the district feedback focal points;
- a province issue will be handled by PIU feedback focal point; and
- Grievances that are of a serious nature (e.g., all allegations of fraud or corruption, and potentially any grievance in categories 2 through 5), the province feedback focal point consult with the CPMU feedback focal point for advice on the appropriate action.

If the person filing the grievance is known, the relevant feedback focal point communicates the time frame and course of action to the complainant within one week of receipt of the grievance.

Step 3: Verification. The responsible feedback focal point(s) handling the grievance gather facts and clarify information to generate a clear picture of the circumstances surrounding the grievance. At community level, ward/municipality chairpersons, deputy chairpersons or secretaries will assist their respective focal points to verify grievances. Verification normally includes site visits, a review of documents, a meeting with the complainant (if known and willing to engage), ward/municipality Committee members, and meetings with those who could resolve the issue (including formal and informal community leaders). Feedback related to the misuse of funds may also require meetings with suppliers and contractors and will need to be posted in municipality sites as part of their social accountability process and public hearing/audit.

For serious grievances received at the federal level by phone or letter, the CPMU GRC decides whether (i) to launch its own investigation; or (ii) instruct the province and municipal/ward feedback focal points to conduct an initial investigation at the location where the grievance/problem occurred. If the district-level feedback focal points cannot resolve the grievance, it will, within 15 days, be reported back to the CPMU GRC for further action.

Within the allotted period, the results of the verification are presented by the respective feedback focal points to the respective GRCs (dependent on the nature of the complaint) for action.

At federal and provincial level, the respective grievance handler fills in the grievance form and submits it to the CPMU M&E officer who enters it into the project MIS.

Step 4: Action. Feedback from the community level should be handled and recorded in the wards, if possible. For issues that cannot be resolved within 21 days at the community level, the municipality GRC's review these grievances and the results of the verification and determine the action to be taken. If referred to province level, once the needed action(s) are carried out, the province grievance handler fills in a grievance report and enters it into the MIS.

If the actions cannot be carried out, or the grievance cannot be satisfactorily resolved

in a reasonable period of time (less than 30 days), the province GRC refers the matter back to the CPMU feedback focal point (Social Safeguards specialist) to review the case and determine the action to be taken.

If the complainant is known, the feedback focal point with whom the grievance was filed communicates the action to the complainant. The feedback focal point must seek feedback from the complainant as to whether the action(s) are deemed to be satisfactory. If the action is considered unsatisfactory, the complainant may file a new grievance. A new grievance on an existing case is handled at the next higher level from the initial case. The ward/municipality GRC communicates the action taken as a result of a grievance, to community people at the next ward/municipality meeting.

Step 5: Follow-up and Monitoring. In its regular supervision visits, the CPMU assesses the functioning of the province and ward/municipality GRMs and undertakes spot checks. The CPMU uses the MIS to provide a monthly snapshot of the GRM (number and category of comments received, and grievances/suggestions resolved), including any suggestions received and acted on.

The CPMU uses the MIS to report on grievances and FHM feedback in its quarterly implementation progress reports, safeguard monitoring reports, and its annual reports. Reports include information on grievance resolution and trends (number of grievances received, cause of grievance, number resolved, average time taken to resolve a grievance, percentage of individuals having filed a grievance who are satisfied with the action taken, number of grievances resolved at the lowest applicable level, etc.).

The CPMU and the ADB review grievance monitoring data as part of regular implementation support missions. A review of the grievance handling system (including the grievance of those who have used it) is undertaken during every second year to assess the efficacy of the mechanism and introduce improvements.⁴⁰ The decision of the GRCs is binding, unless vacated by the court of law. The affected person, however, is free to access the country's legal system at any time and stage although the project GRM is the preferred route. The GRC will continue to function, for the benefit of the stakeholders, during the entire life of the project. The affected people can also register their grievances on the Government website (province and municipality) under the social accountability section that enables a citizen to lodge a complaint. The project GRM would be supported through this existing government feedback mechanism. However, since these are general feedback sites, the feedback received for this project should be extracted and forwarded to the province GESI specialist for its update into the GRM MIS.

People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as

report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.

8. Appendixes

- (b) Attachment 1: EMP Adopted in bidding document of CW01 A Package

Attachment 1

1. EMP ADOPTED IN BIDDING DOCUMENT OF CW01 A PACKAGE

ENVIRONMENTAL MANAGEMENT PLAN

A. Environmental Management Plan Overview

This is the chapter for the Environmental Management Plan (EMP) prepared for the different components of NEP: NAFHA Project, which exhibits the mitigation measures against potential environmental impacts. The EMP is a management tool and seeks to manage and keep to a minimum the negative impacts of the orchard development, nursery enhancement, upgrading of horticultures centers and other infrastructure development under the project and at the same time, enhance the positive and beneficial impacts of NEP: NAFHA Project. The EMP has been developed as part of the IEE report to avoid, minimize, and mitigate potential negative impacts of the project.

The purpose of the EMP is to guide the selection of sites for development, project implementation, and operation and maintenance in accordance with Nepali environmental, health and safety and ADB Safeguard Policy Statement (2009) requirements. To ensure the mitigation measures are implemented, the CPMU and PIU, supported by PISC, will undertake a program of environmental supervision and monitoring during project implementation.

The objectives of the EMP are to:

- a. Display range of measures to mitigate potential impacts to minimal or insignificant levels;
- b. Identify measures that could optimize beneficial impacts;
- c. Establish a method of monitoring environmental management practices during all phases of development;
- d. Ensure project implementation and operational phases are within the principles of ADB SPS 2009 and national environmental policies;
- e. Ensure that the health and safety recommendations are complied with;
- f. Propose mechanisms for monitoring compliance with the EMP and reporting thereon; and
- g. Specify time periods within which the measures contemplated in the final environmental management plan must be implemented, where appropriate.

B. Institutional Setting to Implement the Environmental Safeguards

The CPMU is responsible for the full compliance of the project with the loan agreement, ADB's SPS, and all applicable laws and regulations of the government. The CPMU will be supported by PIUs to ensure compliance with environmental safeguards stated in this PAM and the IEE report. The CPMU will:

- a. Comply with Government of Nepal's environment protection act 2076 and regulation 2077, and other environment-related statutory requirements of the project in a timely manner;
- b. ensure environment safeguards sections and EMP are included in bidding documents and contracts;
- c. review and approve the construction EMPs prepared by the Contractor/s, when applicable, with the support of PIUs and consultants;
- d. ensure the preparation, review, and submission of semi-annual (or as stated on the loan agreement) environmental monitoring reports for disclosure on the ADB's websites;
- e. implement effective environmental monitoring during pre-construction, construction, and operation phases;
- f. review and approve, for submission to ADB, periodic environmental monitoring reports;
- g. inform ADB on any unanticipated environmental impact/s occurred during project implementation phase;
- h. participate and/or lead public consultations; and
- i. ensure grievance redress mechanism, as envisaged in the IEE and in this PAM, is in place and fully operational from the onset of project implementation. Facilitate the resolution of safeguard related grievances from affected people and other stakeholders.

The PIUs (1-6) will:

- a. Ensure that the project, and all Contractors, nursery operators, research centers, and matching grant's beneficiaries to obtain permits, licenses, etc. from the government for construction and operational activities;
- b. Carry out regular field verification and review environmental compliances by Contractors, nursery operators, research centers, and matching grant's beneficiaries during project implementation, in coordination with the PIU consultants and the focal environmental staff;
- c. With the support from the PIU consultants, provide and record environmental observations during any site-visits that may include, but not limited to, excessive dust, loud noises, improper disposal of wastes, chemical/oil spills, camp hygiene, and health and safety;
- d. guide beneficiaries on environment safeguards activities, plans and monitoring;
- e. With the support from consultants, conduct training and workshops on environmental management, and site induction of all staff and workers¹⁰ involved in the project implementation;
- f. Participate and/or lead public consultations and grievance redress mechanism processes; and
- g. If there are any unanticipated environmental impacts during project implementation, the CPMU, with support from the PISC, will update IEE and

¹⁰ The staff and workers will include all engineers, and staff and laborers of contractors.

EMP, or prepare environmental due diligence reports.

Contractor. The Contractor is the principal agent to implement the EMP and environmental quality monitoring during the pre- and construction stages. Specifically, the Contractor will:

- a. Appoint the contractor's environment, health and safety focal person;
- b. Obtain necessary environmental license(s), permits etc. from relevant agencies prior to commencement of works;
- c. Implement, document and report to PIUs all mitigation measures in the EMP and environmental quality monitoring plan;
- d. Ensure that workers and site supervisors participate in all environmental safeguard related training events by the PMU and PIUs;
- e. Ensure compliance with environmental statutory requirements and contractual obligations;
- f. Participate in resolving issues and complaints from affected people; and
- g. Implement environmental corrective actions or additional environmental mitigation measures as necessary.

ADB is responsible for the following:

- a. Review environmental monitoring reports, and disclose the final reports on ADB's website;
- b. Explain policy requirements and safeguard covenants in the loan and project agreements to CPMU and PIUs;
- c. Monitor implementation of the EMP through due diligence missions;
- d. Assist CPMU, if required, in carrying out its responsibilities and in building capacity for safeguard compliance;
- e. Monitor overall compliance of the projects to this PAM; and
- f. If necessary, provide further guidance to CPMU on the format, content, and scope of the periodic monitoring reports for submission to ADB.

Table below presents the recommended environmental monitoring measures for the nursery expansion and horticulture centers enhancement, which includes relevant environmental parameters, with a description of the sampling stations, frequency of monitoring, applicable standards, and responsible agencies. This will be updated during detailed design to ensure EMP and monitoring program is commensurate to the impacts of the contract packages.

Table 1. Environmental Monitoring Plan for the horticulture center upgrading, nursery expansion and proposed civil works under matching grants.

S. N	Field	Stage	Parameters	Location	Frequency	Standards	Responsibility
1	Air quality	Prior to construction to establish baseline	PM _{2.5} PM ₁₀ SO ₂ NO _x	Work sites	Once in pre-construction Once in a season	National Ambient Air Quality Standards, 2003 and	Contractor

S. N	Field	Stage	Parameters	Location	Frequency	Standards	Responsibility
		Construction phase			(except monsoons) for the construction period	WHO standards	
2	Noise levels	Prior to construction to establish baseline Construction phase	Equivalent day and night time noise levels	Work sites	Once in pre-construction Once in a season (except monsoon) for the construction period	National Noise Standard Guidelines, 2012 and WHO standards	Contractor
3	Water quality	Prior to construction to establish baseline Construction phase	TDS, TSS, pH, Hardness, BOD, total coliform, E-coli, total nitrogen, total phosphorus, heavy metals, temperature, DO, hydrocarbons, mineral oils, phenols, cyanide, temperature	Only applicable for construction sites that are nearby water body	Twice a year (pre monsoon and post-monsoon) for the entire construction period	National Drinking Water Quality Standards, 2005	Contractor
4	Community and occupational health and safety	Construction phase	Incidence and types of health and safety issues	Work sites	Monthly	Injuries, loss time incidents and fatalities	Contractor

BOD = Biochemical Oxygen Demand, DO = Dissolved Oxygen, km = kilometer, NO_x = nitrogen oxides, PM₁₀ = particles equal to or smaller than 10 microns, PTWs = permit to work, pH = potential of hydrogen, SO₂ = Sulphur Dioxide, TDS = total dissolved solids, TSS = total suspended solids.

^a Depending on what parameters laboratories in Nepal can test or analyze.