

# Environmental Monitoring Report

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**PUBLIC**

#2 Semiannual Report (July 2023 to December 2023)  
April 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 10 April 2024)

|               |   |                       |
|---------------|---|-----------------------|
| Currency unit | – | Nepalese Rupees (NRs) |
| NRs1.00       | = | \$ 0.0075             |
| \$1.00        | = | NRs133.3              |

## ABBREVIATIONS

|         |   |  |
|---------|---|--|
| ADB     | – | Asian Development Bank   |
| CGFMC   | – | Credit Guarantee Fund Management Committee                             |
| CGMC    | – | Competitive Grant Management Committee                                 |
| CPMU    | – | Central Project Management Unit  |
| DCGF    | – | Deposit Credit Guarantee Fund  |
| 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  |
| GAFSF   | – | 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                                     |
| MoLMAC  | – | Ministry of Land Management, Agriculture and Cooperatives (Provincial) |
| MoALD   | – | Ministry of Agriculture and Livestock Development (Federal)            |
| MoALD   | – | Ministry of Agriculture and Livestock Development (Provincial)         |
| MoALM   | – | Ministry of Agriculture and Land Management                            |
| MoIACS  | – | Ministry of Industry, 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   |
| PIU     | – | Project Implementation Unit  |
| PoP     | – | Package of Practices   |
| PPSC    | – | Provincial Project Steering Committee                                  |
| PSC     | – | Project Steering Committee   |
| SMC     | – | Subsidy Management Committee   |
| SME     | – | Small and Micro Enterprise   |
| 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 10000 m<sup>2</sup> area  
One hectare = 19.65 ropani

### 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.

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## 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 outputs<sup>1</sup>:

**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

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<sup>1</sup>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.

nurseries (scheme 6);<sup>2</sup> (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;<sup>3</sup> (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);<sup>4</sup> (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

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<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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



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 <sup>4</sup>  |
|---------------|--|--|
| Koshi         | Apple 50ha Orange 900 ha<br>Lime 500 ha Avocado 300ha<br>Kiwi 400ha<br>Walnut 50ha                 | MoLMAC, Phaplu Solukhumbu and<br>NARC, Paripatle Dhankuta  |
| Bagmati       | Orange 300ha Lime 300ha  | MoLMAC, Trishuli Bagmati and<br>NCFD Kirtipur  |
|               | Avocado 150ha<br>Macadamia 300ha Walnut<br>100ha   |  |
| Gandaki       | Apple 100ha Orange 800ha<br>Lime 750ha Avocado 150ha<br>Kiwi 150ha Walnut 250ha<br>Macadamia 250ha | NCFD Marpha Mustang<br>NARC Directorate of agri research,<br>Lumle; NARC Malepatan Pokhara;<br>MOLMAC Pokhara;<br>NCFD Palpa station |
| Karnali       | Apple 1,450ha Orange 350ha<br>Walnut 600ha Pecan 100ha<br>Almond 100ha                             | NARC research station Rajikot<br>Jumla and<br>NARC Dailekh Orange  |
| Sudurpashchim | Apple 400ha Orange 250ha<br>Lime 100ha Walnut 600ha<br>Pecan 100ha<br>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, for the establishment of project website and management information system (MIS) with sapling tracking system, CPMU has submitted the terms of reference (ToR) and cost estimate along with request for quotation (RFQ) document for ADB review. ADB review suggested to use non consulting package procurement document instead of RFQ for goods document. Therefore, preparation of the document for non-consulting procurement is ongoing and procurement will be done by Q2 2024. Project website development is integrated with the package of Project MIS and Sapling Tracking system as Package G01 L in procurement plan.

So that project website development can not be proceed separately. Due to this reason Project Website development was delayed in implementation and not in operation during reporting period. Besides that, the Implementation Review Mission (from 31<sup>st</sup> October to 10<sup>th</sup> November 2023) agreed to reschedule the time of implementation and change the package under non consulting service. So the project is waiting for revision in Procurement Plan along with aide memoir. In the meantime, the project documents (PAM, financial agreements and other relevant documents) have been uploaded to NCFD's website (<https://ncfd.gov.np/>) with "NAFHA" sub-heading for public access.

### **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.<sup>5</sup> 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

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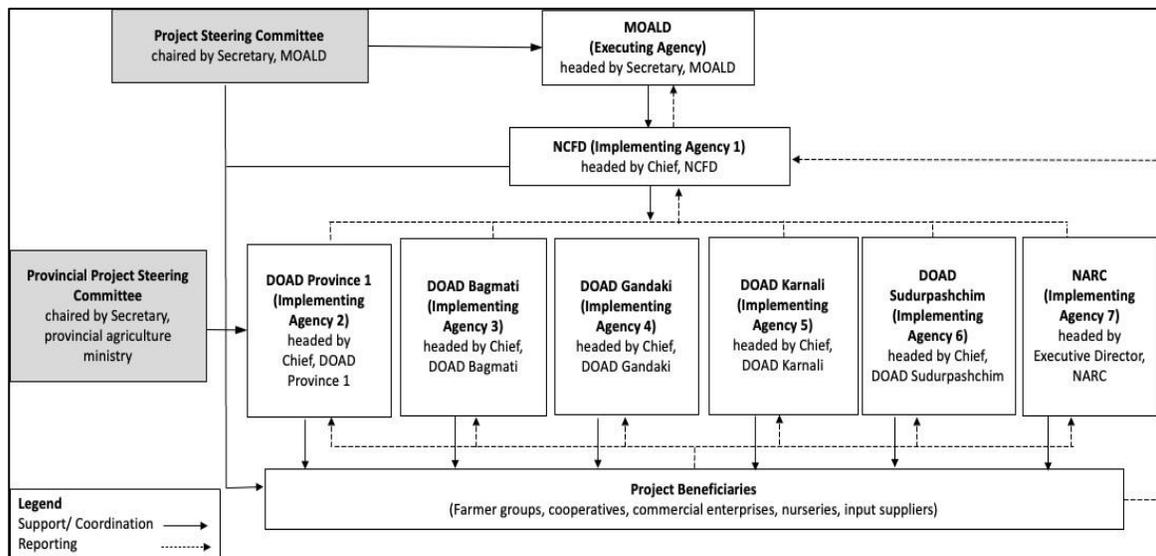
<sup>5</sup> <https://www.adb.org/projects/documents/nep-48218-006-iee>

- 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

## 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).

First PSC meeting was held on 29<sup>th</sup> March 2023 and MoALD working group committee (Chair, DG, DoA) has been established and endorsed. MoALD working committee's first meeting was held on 5<sup>th</sup> July, 2023 and 2<sup>nd</sup> meeting was held on 24<sup>th</sup> November, 2023.

First PPSC meeting was held in Koshi, Gandaki, and Karnali Provinces only till last reporting period. Whereas two PPSC meeting (one each) was held in Karnali and Gandaki provinces during this reporting period. In Bagmati and Sudurpaschim provinces, PPSC meeting was not held till the reporting period.

Once the operational guidelines for Scheme 1, 2 3, 4, 5, and 6 will be approved, then the rest of the committees (CGFMC, CGMC, SMC, LLCC) will be established and meetings will be conducted accordingly. Draft operational guidelines for Scheme 2 and Scheme 6 are in the approval process. So, CGMC, SMC and LLCC will be established within Q2 of 2024.

## 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.**

| <b>Name</b>     | <b>Designation/ Office</b> | <b>Environmental Safeguards Role/s</b>  | <b>Contact Number/ email address</b>                                 |
|-----------------|----------------------------|---|--|
| Ganesh Kumar KC | Agriculture officer, CPMU  | <ul style="list-style-type: none"> <li>Helps to monitor the utilization of recommendations in the IEE and measures in the EMP for environmental safeguard activities</li> <li>Coordinate to report environment safeguards activities</li> </ul> | 9858052370<br><a href="mailto:gkc175@gmail.com">gkc175@gmail.com</a> |
| <b>PIUs</b>     |                            |   |  |
| Suprabha Pandey | Technical Officer, NARC    | In coordination with CPMU and Project   | 9841018322   |

| Name               | Designation/ Office  | Environmental Safeguards Role/s  | Contact Number/ email address         |
|--------------------|--|--|---------------------------------------|
|                    |  | Director, ensure implementation and monitoring of the EMP, and prepare EMR of the project in coordination with CPMU. | suprabhapandey52@gmail.com            |
| Ganesh Kumar Rai   | Agriculture Officer, PIU Koshi   |  | 9842070614<br>raiganesh2076@gmail.com |
| Modanath Timsina   | Sub-Engineer, PIU Bagmati  |  | 9852041572<br>modanath2043@gmail.com  |
| Binod Sharma       | Agriculture Officer, PIU Gandaki   |  | 9856088253                            |
| Ramesh Khadka      | Agriculture Officer, PIU Karnali   |  | 9857623693<br>Khadkar198@gmail.com    |
| Janak Bohara       | Agriculture Officer, PIU Sudurpaschim  |  | 9868461922<br>boharajanak50@gmail.com |
| <b>Consultants</b> | Not assigned yet. The consultant hiring process under CS06 package which includes Environmental Safeguard Specialist is ongoing (RFP issued on 29 <sup>th</sup> December 2023) 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.<sup>6</sup> 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**

|                  |   |
|------------------|---|
| <b>Districts</b> | <ol style="list-style-type: none"> <li>1. <i>Koshi</i>: Panchthar, Terhathum, Dhankuta, Bhojpur, Khotang, Okhaldhunga and Solukhumbu</li> <li>2. <i>Bagmati</i>: Sindhupalchok, Nuwakot and Dhading</li> <li>3. <i>Gandaki</i>: Gorkha, Lamjung, Syangja, Tanahu, Kaski, Syangja, Parbat, Mustang, Myagdi and Baglung</li> <li>4. <i>Karnali</i>: Rukum West, Salyan, Jajarkot, Dailekh, Kalikot, Jumla, Mugu, Humla and Dolpa</li> </ol> |
|------------------|---|

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

|   |  |               |                   |
|---|--|---------------|-------------------|
|   | 5. <i>Sudurpaschim</i> : Accham, Bajura, Baitadi, Bajhang and Darchula |               |                   |
| <b>Targeted Numbers of Municipalities per Provinces</b> | 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 |
| <b>Targeted Area</b>                                    | 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               |
| <b>Species wise proposed area in (Ha)</b>               | Apple  |               | 2,050             |
|   | Orange   |               | 2,600             |
|   | Lime   |               | 1,650             |
|   | Avocado  |               | 600               |
|   | Kiwi   |               | 550               |
|   | Walnut   |               | 1,600             |
|   | Macadamia  |               | 550               |
|   | Pecan  |               | 200               |
|   | Almond   |               | 200               |
|   | Vegetables and crops   |               | 1,000             |
| <b>Total</b>  |  | <b>11,000</b> |                   |
| <b>No of Research Centers to be Upgraded</b>            | 12   |               |                   |
| <b>Total Orchard Development Area</b>                   | 10,000 ha  |               |                   |
| <b>Total beneficial Households</b>                      | 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 these activities, discussion with concerned 12 horticulture centers/research stations was completed. Previously as per the understanding with

ADB, these activities were held to implement till preparation of standard specification for which ADB has agreed to provide technical supports to design and cost estimates of the high-tech structures. Later on during IRM (held on 31 October to 10<sup>th</sup> November 2023), it was agreed to prepare design and cost estimates by concerned PIUs & CPMU, and if necessary ADB will review the design and cost estimates. Besides that, during IRM it was also agreed to reschedule the time of implementation of these activities in procurement plan. Therefore, the project is waiting to receive the aide memoire along with revised procurement plan. CPMU & PIUs are preparing the design and cost estimates and planning to approve by the end of Q1 2024. Project ensure that EMP for the horticulture centers will be incorporated into the bidding documents as envisaged in Initial Environmental Examination (IEE) report of the project.

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

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

| <b>Province</b> | <b>Estimated project-supported orchards</b>   | <b>Horticulture station/center to be supported by the project<sup>7</sup></b>  |
|-----------------|---|--|
| Koshi           | Apple 50ha<br>Orange 900 ha<br>Lime 500 ha<br>Avocado 300ha<br>Kiwi 400ha<br>Walnut 50ha                    | <b>MoIACS, Koshi, Phaplu, Solukhumbu</b><br><br>NARC Paripatle Dhankuta  |
| Bagmati         | Orange 300ha<br>Lime 300ha<br>Avocado 150ha<br>Macadamia 300ha<br>Walnut 100ha                              | MoALD*, Bagmati Trishuli Bagmati<br>NCFD Kirtipur  |
| Gandaki         | Apple 100ha<br>Orange 800ha<br>Lime 750ha<br>Avocado 150ha<br>Kiwi 150ha<br>Walnut 250ha<br>Macadamia 250ha | NCFD Marpha Mustang<br>NARC Directorate of Agriculture Research<br>NARC Malepatan Pokhara<br>MoALM, Gandaki, Pokhara<br>NCFD Palpa Station |
| Karnali         | Apple 1,450ha<br>Orange 350ha<br>Walnut 600ha<br>Pecan 100ha<br>Almond 100ha                                | NARC research station Rajikot Jumla<br>NARC Dailekh Orange   |
| Sudurpashchim   | Apple 400ha<br>Orange 250ha   | MoLMAC Baitadi   |

<sup>7</sup> 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 <sup>7</sup> |
|----------|---|---|
|          | Lime 100ha<br>Walnut 600ha<br>Pecan 100ha<br>Almond 100ha |   |

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

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

During the reporting period project has drafted the Scheme 6 Operational Guidelines (Private Nursery Upgrading Guideline, 2024) which was discussed and agreed during IRM. The draft operational guideline for Scheme 6 has been submitted to DoA for approval from MoALD with concurrence from MoF.

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.

### 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 (Scheme 1), as agreed during IRM (held on 31<sup>st</sup> October to 10<sup>th</sup> November 2023) as discussed with MoF, ADB consultant is working on operational modality and draft MoU as per the project requirement to implement in coordination with Deposit Credit Guarantee Fund (DCGF). After finalization of the draft, meeting will be arranged to discuss with DCGF on the project requirement, operational modality and draft MoU.

### 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 ropani<sup>8</sup> or greater than 500 ropani or the maximum subsidy payment of \$250,000, whichever is lower.

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                    |
| <b>Total</b> | <b>34</b> | <b>100</b>     | <b>100%</b>      | <b>10,000</b>            |

**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

<sup>8</sup> One hectare = 19.65 ropani

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 establishment of fruits orchards and production of vegetables and other crops, project has submitted the draft of Scheme 2 operational guidelines for approval to MoALD through DoA. After approval of the operational guidelines from MoALD with concurrence from MoF, project is planning to start these activities by Q1 of 2024 in Batch 1 local level (Table 8) for summer plantation of citrus fruits. The targeted area for Batch 1 plantation was discussed and finalized during IRM and agreed to implement with citrus crop as scheduled in Table 9. As this Scheme will be implemented through call for Expression of Interest from the farmers group, cooperatives and private entrepreneurs and will be selected based on the proposal as per the provision in guidelines for grant disbursement. Which don't require bid document.

**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      |
|------------------------------|--------------------|------------------|-----------|------------|--------------|
| <b>Koshi</b>                 |                    |                  |           |            |              |
| 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         | -            |
| <b>Sub-total for Koshi</b>   |                    | <b>2,200</b>     | <b>25</b> | <b>900</b> | <b>1,275</b> |
| <b>Bagmati</b>               |                    |                  |           |            |              |
| 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         | -            |
| <b>Sub-total for Bagmati</b> |                    | <b>1,150</b>     | <b>25</b> | <b>425</b> | <b>700</b>   |
| <b>Gandaki</b>               |                    |                  |           |            |              |
| 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          |
| Apple                        | 2,919              | 150              | -         | 100        | 50           |
| Avocado                      | 39,572             | 150              | -         | 50         | 100          |
| Kiwi                         | 7,016              | 150              | -         | 50         | 100          |
| <b>Sub-total for Gandaki</b> |                    | <b>2,500</b>     | <b>50</b> | <b>850</b> | <b>1,600</b> |
| <b>Karnali</b>               |                    |                  |           |            |              |
| Apple                        | <b>20,047</b>      | <b>1,450</b>     | 50        | 500        | 900          |
| Orange                       | <b>19,821</b>      | <b>350</b>       | -         | 150        | 200          |

| Target Crop                        | Suitable Area (ha) | Target Area (ha) | Batch 1   | Batch 2    | Batch 3      |
|------------------------------------|--------------------|------------------|-----------|------------|--------------|
| Walnut                             | 31,924             | 600              | -         | 200        | 400          |
| Pecan                              | 42,097             | 100              | -         | 50         | 50           |
| Almond                             | 52,416             | 100              | -         | 50         | 50           |
| <b>Sub-total for Karnali</b>       |                    | <b>2,600</b>     | <b>50</b> | <b>950</b> | <b>1,600</b> |
| <b>Sudurpashchim</b>               |                    |                  |           |            |              |
| 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           |
| <b>Sub-total for Sudurpashchim</b> |                    | <b>1,550</b>     | <b>50</b> | <b>470</b> | <b>1,030</b> |

**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         |
|              | <b>34</b> | <b>100</b>     | <b>6</b> | <b>48</b> | <b>47</b> | <b>101</b> |

**Table 9. Batch-1 summer plantation (June/July 2024) schedule for citrus fruit orchard establishment (area in ha)**

| Targeted Crop | Batch-1 Area for Citrus | 1 <sup>st</sup> call (June/July 2024) | No of saplings | 2 <sup>nd</sup> call (June/July 2025) | No of saplings | 3 <sup>rd</sup> call (June/July 2026) | No of saplings |
|---------------|-------------------------|---------------------------------------|----------------|---------------------------------------|----------------|---------------------------------------|----------------|
| Lime          | 70                      | 30                                    | 18750          | 20                                    | 12500          | 20                                    | 12500          |
| Orange        | 160                     | 70                                    | 28000          | 50                                    | 20000          | 40                                    | 16000          |

### 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.

Till the reporting period of this EMR, the system of assessing and verifying carbon sequestration benefits from orchards is not yet established. It will be started after the fruit orchard establishment during implementation of Scheme 2.

### **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 established 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. Demonstration activities will be initiated by Q3 2024.

Implementation of these activities have not started yet. This activity is planned under Scheme 2 and addressed in draft operational guideline of the scheme. Project has submitted the draft of Scheme 2 operational guidelines for approval to MoALD through DoA for approval. After approval of the operational guidelines from MoALD with concurrence from MoF, project is planning to start these activities in Batch 1 summer plantation in 2024. There is a provisioning of Environmental Screening checklist (Appendix 1) in the draft guidelines and based on this environmental mitigation plan and activities will be developed and included in the sub-project.

### **3.7 Matching Grant Component (under Output 3)**

To execute this component, the project has prepared and submitted the draft operational guidelines on private nursery upgrading (Scheme 6) to DoA for approval and planning to execute in 2024. For remaining Schemes *i.e.* Improved cooperative value addition (Scheme 3), Public-private infrastructure (Scheme 4) and Strengthened local level infrastructure (Scheme 5) preparation of operational guidelines are ongoing with the target of implementation onward 2025. Project components that entails civil works are stated in Table 10 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. Summary of the project components that will entail civil works with progress status are stated in Table 10.

***Private nursery upgrading (Output 1):*** There will be up to 40 selected private nurseries (5 provincial level nurseries and 35 medium nurseries including laboratory facilities) 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. To execute this component, the project has prepared and submitted the draft operational guidelines on private nursery upgrading (Scheme 6) to DoA for approval. The first batch will be 15 nurseries in 2024 and 25 nurseries will be supported in 2025.

**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 working on the draft of the operational guidelines for the execution of this activity and planning to execute onward 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. The project is working on the draft of the operational guidelines for the execution of this activity and planning to execute onward 2025.

**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 working on the draft of the operational guidelines for the execution of this activity and planning to execute onward 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 10. Summary of the Project components that will entail civil works.**

| Project component                  | Output | Remarks   | With civil works? (yes or no) | Progress status  | With EMP? (yes or no)  |
|------------------------------------|--------|---|-------------------------------|--|--|
| Upgrading of Horticulture Centers  | 1      | Improvement of operation and production of high-quality planting materials.   | Yes                           | Request letter sent to ADB for repackaging of CW01A<br><br>During IRM it was agreed to prepare design and cost estimates by concerned PIUs and CPMU and If necessary ADB will review the design and cost estimates.<br><br>Agreed to reschedule the time of implementation in PP during IRM. | Yes  |
| Developing Drip Irrigation Systems | 2      | Water will be supplied to orchard and vegetable areas through drip irrigation | Yes                           | Component of developing drip irrigation systems was inbuilt in Scheme 2 operational guidelines, draft of the guideline has been submitted to MoALD through DoA for approval with concurrence from MoF.   | Yes<br><br>Beneficiaries of Scheme 2 will be implement this activity and executed as per provisioning in Operaional guideline of Scheme 2. |
| Matching Grant Component           | 3      | Project will support cooperatives, agri-enterprises and private nurseries     | Yes                           | Matching grant component was inbuilt in Scheme 3, 4, 5,  | Yes  |

| Project component | Output | Remarks | With civil works? (yes or no) | Progress status   | With EMP? (yes or no)   |
|-------------------|--------|---------|-------------------------------|---|---|
|                   |        |         |                               | and 6 of the project. Draft of Scheme 6 (Private nursery upgrading) guidelines discussed in IRM and submitted to DoA for approval. For remaining Scheme 3, 4, and 5 project is working on draft guidelines. | But inclusion of EMP in bidding document will be ensure during implementation of this activity. |

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 11). 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 11. Summary of project packages**

| Package Number/Name                         | Construction Locations | Target Date of Contract Awarding | Target Date of the Start of the Works | Progress Status Up to December 2023   |
|---|------------------------|----------------------------------|---------------------------------------|---|
| CW01-A/ Horticulture center/station upgrade | THDC, Marpha Mustang   | 24 May 2024                      | 10 June 2024                          | Bid issued, Two bids received, Both non-compliant Agreed to repackage as Horticulture Center Upgrade (THDC, Marpha) during IRM. Reviewing the past design and |

| Package Number/Name  | Construction Locations   | Target Date of Contract Awarding | Target Date of the Start of the Works | Progress Status Up to December 2023  |
|--|--|----------------------------------|---------------------------------------|--|
|  |  |                                  |                                       | cost estimates provided by the ADB's consultant ongoing.   |
| CW01-B/ NCFD high-tech nurseries   | THDC, Marpha; CFDC Palpa and WTHDC Kirtipur  | 24 July 2024                     | 10 August 2024                        | <p>Reviewing the past design and cost estimates provided by the ADB's consultant for NCFD farms ongoing.</p> <p>During IRM it is agreed that If necessary ADB will review it .</p> <p>Recommended to rescheduled the time of implementation during IRM</p> |
| 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                          | <p>Designing and cost estimates preparation by NARC PIU ongoing as agreed during IRM that If necessary ADB will review it .</p> <p>Recommended to rescheduled the time of implementation during IRM.</p>   |

| <b>Package Number/Name</b>  | <b>Construction Locations</b>  | <b>Target Date of Contract Awarding</b> | <b>Target Date of the Start of the Works</b> | <b>Progress Status Up to December 2023</b>  |
|---|--|---|--|---|
| 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                                 | Designing and cost estimates preparation by NARC PIU ongoing as agreed during IRM.<br>Recommended to rescheduled the time of implementation during IRM. |
| 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                                 | Designing and cost estimates preparation by NARC PIU ongoing as agreed during IRM.<br>Recommended to rescheduled the time of implementation during IRM. |
| CW05/ Horticulture center/station upgrade–Dry Fruit Development Center, Baitadi, Sudurpashchim  | Dry Fruit Development Center, Baitadi, Sudurpashchim   | 24 Jul 2024                             | 10 August 2024                               | Designing and cost estimates ongoing as agreed during IRM<br><br>Recommended to rescheduled the time of implementation during IRM                       |
| CW06/ Horticulture center/station upgrade–Horticulture  | Horticulture Center, Phaplu,   | 24 Jul 2024                             | 10 August 2024                               | Designing and cost estimates ongoing as   |

| Package Number/Name  | Construction Locations   | Target Date of Contract Awarding | Target Date of the Start of the Works | Progress Status Up to December 2023   |
|--|--|----------------------------------|---------------------------------------|---|
| Center, Phaplu, Solukhumbu, Koshi  | Solukhumbu, Koshi  |                                  |                                       | agreed during IRM<br><br>Recommended to rescheduled the time of implementation during IRM   |
| 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                        | Designing and cost estimates ongoing as agreed during IRM<br><br>Recommended to rescheduled the time of implementation during IRM |
| CW08/ Horticulture center/station upgrade–Horticulture Development Resource Center, Pokhara, Gandaki             | Horticulture Development Resource Center, Pokhara, Gandaki             | 24 May 2024                      | 10 June 2024                          | Designing and cost estimates ongoing as agreed during IRM<br><br>Recommended to rescheduled the time of implementation during IRM |

#### 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 which requires importation of germplasm from outside the country, registration of fruit varieties 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. Project has submitted the draft of Scheme 2 and Scheme 6 operational guidelines for approval to MoALD through DoA which requires concurrence from MoF.

Environmental screening checklist (developed in consultation with the ADB team) prepared for the screening of the applicants (Farmers, Farmers' group, Cooperatives, Private Nurseries) under guidelines of the Scheme 2 and Scheme 6 operation as stated in Appendix 1 . 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 12).

**Table 12. National/local environmental statutory environmental requirements**

| <b>Statutory Environmental Requirements<sup>9</sup></b> | <b>Title of National/Local Policy</b> | <b>Issuing Office</b> | <b>Responsible Agency</b> |
|---|---------------------------------------|-----------------------|---------------------------|
| 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. So far till the reporting period (July 2023 to December 2023), CPMU have not issued any bidding document on CW packages which included the EMP. CPMU will ensure to use applicable EMP based on the packages as categorized in the IEE document of the project.

## **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. Project orientation workshops in 5 provinces (one in each) and one at national level was completed. Whereas, project orientation at project local level are ongoing.

## **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,

<sup>9</sup> 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.<sup>40</sup> 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

### Appendix 1. Environmental Screening Checklist for Identification of Impact on Environment

| S.N. | Environmental aspect  | Environmental impact  | Remarks |
|------|---|-----------------------|---------|
|      |   | Yes / No / Don't Know |         |
| 1    | Is there any soil erosion due to the program?   |                       |         |
| 2    | Is there will be a situation of decline in arable land due to the program?  |                       |         |
| 3    | Is the site selected for the proposed program on very steep terrain or does it requires heavy soil excavation work?   |                       |         |
| 4    | Is there any risk that the implementation of the proposed program will directly affect nearby forest and wildlife areas?  |                       |         |
| 5    | From the implementation of the proposed program, are there any risks for the areas where the forest and wild animals enter other than the mentioned areas, such as national parks, wildlife reserves, etc.? |                       |         |
| 6    | Is there any possibility to affect the quality of the surrounding water due to the program?   |                       |         |
| 7    | Is there a possibility that water sources used by the community will dry up or downstream areas will be affected or endangered due to the proposed programs? Is it possible to fall or risk?                |                       |         |
| 8    | Does the proposed program activities are detrimental to human health?   |                       |         |
| 9    | Does the proposed program activities supports adaptation to climate-related risks?  |                       |         |
| 10   | Does the proposed program activities creates any biological hazards?  |                       |         |
| 11   | Does the proposed program endangered the ecologically important local plant species?  |                       |         |

| S.N. | Environmental aspect   | Environmental impact  | Remarks |
|------|--|-----------------------|---------|
|      |  | Yes / No / Don't Know |         |
| 12   | Exotic species will be brought during establishment of the proposed fruit orchard?   |                       |         |
| 13   | Pesticides will be used in the establishment of the proposed fruit orchard?  |                       |         |
| 14   | If there is a possibility of any negative impact on the environment other than the above-mentioned objects/topics from the activities of the proposed program, mention it clearly. |                       |         |
| 14.1 |  |                       |         |
| 14.2 |  |                       |         |
| 14.3 |  |                       |         |