



# Report and Recommendation of the President to the Board of Directors

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## INTERNAL

Project Number: 48218-006  
August 2022

## Proposed Loan, Grant, and Administration of Grant Nepal: Nuts and Fruits in Hilly Areas Project

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Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 11 August 2022)

Currency unit	–	Nepalese rupee/s (NRe/NRs)
NRe1.00	=	\$0.0079
\$1.00	=	NRs127.230

## ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
CGF	–	credit guarantee fund
COVID-19	–	coronavirus disease
CPMU	–	central project management unit
GAFFSP	–	Global Agriculture and Food Security Program
GAP	–	good agricultural practices
GESI	–	gender equality and social inclusion
ha	–	hectare
HACCP	–	Hazard Analysis and Critical Control Points
m	–	meter
MOALD	–	Ministry of Agriculture and Livestock Development
NCFD	–	National Center for Fruit Development
O&M	–	operation and maintenance
PAM	–	project administration manual
PIU	–	project implementation unit
tCO <sub>2</sub> e	–	tons of carbon dioxide equivalent

## 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., FY2022 ends on 15 July 2022.
- (ii) In this report, “\$” refers to United States dollars.

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## PROJECT AT A GLANCE

<b>1. Basic Data</b>		<b>Project Number:</b> 48218-006	
<b>Project Name</b>	Nuts and Fruits in Hilly Areas Project	<b>Department/Division</b>	SARD/SAER
<b>Country</b>	Nepal	<b>Executing Agency</b>	Ministry of Agriculture and Livestock Development
<b>Borrower</b>	Nepal		
<b>Country Economic Indicators</b>	<a href="https://www.adb.org/Documents/LinkedDocs/?id=48218-006-CEI">https://www.adb.org/Documents/LinkedDocs/?id=48218-006-CEI</a>		
<b>Portfolio at a Glance</b>	<a href="https://www.adb.org/Documents/LinkedDocs/?id=48218-006-PortAtaGlance">https://www.adb.org/Documents/LinkedDocs/?id=48218-006-PortAtaGlance</a>		
<b>2. Sector</b>		<b>ADB Financing (\$ million)</b>	
✓ <b>Agriculture, natural resources and rural development</b>	Agricultural policy, institutional and capacity development		16.000
	Agricultural production		30.000
	Agro-industry, marketing, and trade		24.000
		<b>Total</b>	<b>70.000</b>
<b>3. Operational Priorities</b>		<b>Climate Change Information</b>	
✓ OP1: Addressing remaining poverty and reducing inequalities		GHG reductions (tons per annum)	48,400
✓ OP2: Accelerating progress in gender equality		Climate Change impact on the Project	High
✓ OP3: Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability			
✓ OP5: Promoting rural development and food security		<b>ADB Financing</b>	
✓ OP6: Strengthening governance and institutional capacity		Adaptation (\$ million)	35.090
✓ OP7: Fostering regional cooperation and integration		Mitigation (\$ million)	21.010
		<b>Cofinancing</b>	
		Adaptation (\$ million)	5.190
		Mitigation (\$ million)	0.480
<b>Sustainable Development Goals</b>		<b>Gender Equity and Mainstreaming</b>	
SDG 1.5		Effective gender mainstreaming (EGM)	✓
SDG 2.3, 2.4, 2.5			
SDG 5.5		<b>Poverty Targeting</b>	
SDG 8.2		Geographic Targeting	✓
SDG 10.1			
SDG 13.a			
<b>4. Risk Categorization:</b> Complex			
<b>5. Safeguard Categorization</b>		Environment: B Involuntary Resettlement: C Indigenous Peoples: B	
<b>6. Financing</b>			
<b>Modality and Sources</b>		<b>Amount (\$ million)</b>	
<b>ADB</b>		<b>70.000</b>	
Sovereign Project grant: Asian Development Fund		10.000	
Sovereign Project (Concessional Loan): Ordinary capital resources		60.000	
<b>Cofinancing</b>		<b>9.000</b>	
Global Agriculture and Food Security Program - Project grant (Full ADB Administration)		9.000	
<b>Counterpart</b>		<b>14.450</b>	
Government		14.450	
<b>Total</b>		<b>93.450</b>	
<b>Note:</b> World Food Programme will administer a parallel cofinancing of \$3 million on a grant basis financed by GAFSP.			
<b>Currency of ADB Financing:</b> US Dollar			

## I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan and a proposed grant, both to Nepal for the Nuts and Fruits in Hilly Areas Project. The report also describes the proposed administration of a grant to be provided by the Global Agriculture and Food Security Program (GAFSP) for the project, and if the Board approves the proposed loan and grant, I, acting under the authority delegated to me by the Board, approve the administration of the grant.<sup>1</sup>

2. The project will increase the agricultural income of beneficiary farmers in 100 municipalities in hilly areas of five out of seven provinces: Province 1, Bagmati, Gandaki, Karnali, and Sudurpaschchim.<sup>2</sup> This will be mainly achieved by developing about 10,000 hectares (ha) of climate-resilient fruit and nut orchards providing value addition to the nuts and fruits produced by about 30,000 farm households. The project will also improve the institutional capacity for managing the nursery and horticulture sector. The project will assist about 10,000 smallholder households, which are not capable of investing in commercial fruit and nut orchard development in the project provinces, to improve their vegetable and other nutritious crop production and related marketing.

## II. THE PROJECT

### A. Rationale

3. Nepal is experiencing a rapid change in its farming systems, particularly in hilly areas that are from 500 meters (m) to 3,000 m above sea level.<sup>3</sup> In these areas, almost 70% of the population is employed in agriculture.<sup>4</sup> Still, the share of agriculture in the gross domestic product (GDP) was merely 27% in 2018–2019.<sup>5</sup> People are shifting to other sectors and relying on remittances to ensure a sufficient livelihood. For example, remittances from abroad increased by three times in the last decade and the share of remittances to GDP reached 23% in 2019–2020.<sup>6</sup> As outmigration from these areas continuously rises, about 30% of cultivated land has now been abandoned from farming. In addition, climate change is shifting crop cultivation altitude, and increasing diseases, insect pests, and wet days.<sup>7</sup> The climate vulnerability index is highest in the west, northwest, and northeast with mountain regions in the northwest having the lowest adaptive capacity.<sup>8</sup> Climate vulnerability is particularly high in lower hills and mid mountains

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<sup>1</sup> The GAFSP is a multilateral financing instrument dedicated to fighting hunger, malnutrition, and poverty in the world's poorest countries. It was established by the International Bank for Reconstruction and Development as trustee. The GAFSP allocates funds for public investment based on competitive, open calls for proposals. The proposal for the Nuts and Fruits in Hilly Areas Project's cofinancing was selected under the sixth call for proposals by the GAFSP Steering Committee in December 2021.

<sup>2</sup> Province 1 is a temporary name being used as of August 2022 until the official name is selected by the provincial assembly.

<sup>3</sup> The project generally targets the areas between 1,000 m and 3,000 m that are known as the lower hills and middle mountains areas.

<sup>4</sup> UNICEF. 2019. [Nepal Country Report: Developing skills in Youth to Succeed in the Evolving South Asian Economy](#). Bangkok.

<sup>5</sup> Government of Nepal, Ministry of Finance. 2019. [Economic Survey 2018-2019](#). Kathmandu.

<sup>6</sup> Nepal Rastra Bank. 2021. [Impact of Remittances on Rural Poverty in Nepal: Evidence from Cross-Section Data](#). Kathmandu

<sup>7</sup> Government of Nepal, Ministry of Forests and Environment. 2019. [Climate Change Scenarios for Nepal](#). National Adaptation Plan. Kathmandu.

<sup>8</sup> Climate Change Assessment (accessible from the list of linked documents in Appendix 2).

areas.<sup>9</sup> These land abandonment, outmigration, and climate vulnerability result in less livelihood options, further accelerating youth outmigration to urban areas and abroad.

4. The effective exploration of Nepal's horticulture potential has been constrained by a wide range of factors, including (i) lack of business and marketing channels; (ii) high post-harvest losses—up to 40% of production—because of poor quality planting materials, poor post-harvest management techniques, and inadequate equipment and infrastructure for grading, packaging, and climate-controlled storage; (iii) limited access to loans, particularly medium-term loans required for horticulture production, because of complex loan acquisition and collateral valuation processes; and (iv) shortage and high cost of seasonal labor.<sup>10</sup>

5. Nepal's horticulture subsector also struggles with declining productivity. The declining fruit and nut crop productivity has led to Nepal's orchard productivity falling below the world average in 2017 (footnote 10). This is a result of (i) poor quality planting materials in the absence of nursery regulations; (ii) old and senile orchards which require replanting and disease management; (iii) small landholding farms, characterized by land fragmentation, with an average size of 0.6 ha; (iv) limited water storage in hilly areas preventing year-round farming; and (v) lack of resilient varieties to climate change-induced diseases. In addition, female farmers in hilly areas are more likely to face a lack of equitable access to productive resources such as land, credit, and technology.<sup>11</sup>

6. Yet, new opportunities are emerging for farmers in hilly areas. Nepal's diverse agro-climatic conditions and geophysical locations provide a wide range of opportunities for tropical, subtropical, and temperate fruit and nut production. From 2008 to 2018, both the total area and the volume of fruit production increased by more than 70% (footnote 5). Still, domestic fruit and nut supply does not meet the fast-growing demand. Fruit and nut demand in Nepal is increasing because of urbanization, rising national wealth, improved knowledge of nutrition, and increased tourist flow (footnote 10).

7. Higher profits from commercial fruit and nut farming could help retain the younger population in the agriculture sector. Commercial fruit and nut farming also offers income-generating opportunities for women who are heading households after male outmigration and are disadvantaged in finding off-farm employment. The engagement of women and excluded and vulnerable groups in less labor-intensive horticulture production, marketing, and processing could help them be economically empowered and socially recognized in the household decision-making process. By supporting fruit and nut farmers, the project will help the country meet horticulture demand, and increase hilly area farmers' income, job opportunities, and climate resilience.

8. Coronavirus disease (COVID-19) has taken a heavy toll on Nepal's economy through a decline in tourism, domestic activity, and remittances.<sup>12</sup> The gross domestic product contracted by 2.1% in FY2020 and severe food insecurity almost doubled from 19% to 35% of households during the second wave of infections, from April to July 2021.<sup>13</sup> Households are experiencing an ongoing shock to income and social assistance programs, which may cause a setback to poverty

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<sup>9</sup> Ministry of Forests and Environment, Government of Nepal. 2021. [Vulnerability and Risk Assessment and Identifying Adaptation Options: Sector Report, Agriculture and Food Security](#). Kathmandu.

<sup>10</sup> Government of Nepal, Fruit Development Directorate. 2017. [Nepal: Fruit Development Project 2017](#). Kathmandu. Productivity is measured as crop weight per unit area.

<sup>11</sup> Food and Agriculture Organization of the United Nations. 2019. [Country Gender Assessment of Agriculture and the Rural Sector in Nepal](#). Kathmandu.

<sup>12</sup> Government of Nepal, Ministry of Finance. 2021. [Economic Survey 2020–2021](#). Kathmandu.

<sup>13</sup> World Vision. 2021. [Multi-sectoral impact of the COVID-19 second wave in Nepal 2021: Key findings from a rapid assessment/household survey](#). Lalitpur.

alleviation gains in recent years. The project's support to farmers to switch from subsistence farming to commercial farming and diversifying hilly area residents' income sources will enhance the resilience of vulnerable people's livelihoods.

9. **Policy framework and institutional capacity.** The Fifteenth Plan, FY2020–FY2024 aims to increase the production and productivity of the agriculture sector, and to enhance the sector's commercialization and competitiveness.<sup>14</sup> The Agriculture Development Strategy 2015–2035 highlights governance, productivity, commercialization, and competitiveness as four pillars of agricultural development.<sup>15</sup> In addition, the government declared 2016–2026 the “Fruit Decade” to revive hill agriculture and fill the gap between domestic fruit and nut demand and supply (footnote 10). Under this initiative, the National Centre for Fruit Development (NCFD) established a target to increase fruit production in Nepal by 300% over a 20-year timeframe. Since Nepal restructured into a federal republic in 2015, the division of roles across central, provincial, and local levels for horticulture development is yet to be defined. Staff shortages and insufficient capacity are common challenges, and there is room to improve the coordination among the federal, provincial, and local governments.

10. Development partners in the agriculture sector hold food security group meetings regularly to discuss collaboration in the upcoming projects in Nepal and share project implementation experience. An agriculture development strategy joint sector review group was also formed in 2020 to support the implementation of the government's long-term agricultural strategy. Through this collaboration, parallel cofinancing from the World Food Programme, financed by the GAFSP, to the project was identified. It was also discussed that the ongoing agriculture projects financed by the International Fund for Agricultural Development will provide credit lines to smallholder farmers and ADB will explore the operation of a credit guarantee fund to expand smallholder farmers' access to finance.<sup>16</sup>

11. **Lessons.** The project complements the sector support of the Asian Development Bank (ADB) demonstrated by previous projects such as the High Mountain Agribusiness and Livelihood Improvement Project from 2011 to 2018 and the Raising Incomes of Small and Medium Farmers Project from 2011 to 2019.<sup>17</sup> The key lessons applied to the project's design include (i) the importance of providing matching grants to boost investors' confidence in agribusiness investment and supporting their access to financing, (ii) the need to address the quality and quantity of agricultural inputs, and (iii) the importance of cluster-based production to overcome land fragmentation and meet economies of scale. The project also builds on ADB's ongoing policy-based loan for the Food Safety and Agriculture Commercialization Program, which strengthened the monitoring of pesticide residue in fruits and vegetables and prepared a strategic investment plan for apples in Gandaki Province that can be implemented through the project.<sup>18</sup>

12. **Alignment with Strategy 2030.** The project is aligned with ADB's Strategy 2030 through its focus on (i) operational priority (OP) 1 (addressing remaining poverty and reducing inequalities) by increasing investment in agricultural research, extension services, and technology

<sup>14</sup> Government of Nepal, National Planning Commission. 2020. [The Fifteenth Plan: Fiscal Year 2019/20–2023/24](#). Kathmandu.

<sup>15</sup> Government of Nepal, Ministry of Agriculture Development. 2016. [Agricultural Development Strategy 2015 to 2035](#). Kathmandu.

<sup>16</sup> Sector Assessment (Summary): Agriculture, Natural Resources, and Rural Development (accessible from the list of linked documents in Appendix 2).

<sup>17</sup> ADB. 2020. [Completion Report: High Mountain Agribusiness and Livelihood Improvement Project in Nepal](#). Manila; and ADB. 2021. [Completion Report: Raising Incomes of Small and Medium Farmers Project in Nepal](#). Manila.

<sup>18</sup> ADB. 2019. [Report and Recommendation of the President to the Board of Directors: Proposed Policy-Based Loan and Technical Assistance Grant to Nepal for the Food Safety and Agriculture Commercialization Program](#). Manila.



development; (ii) OP 2 (accelerating progress in gender equality) through training of women leadership and promoting women's participation in farmer cooperatives; (iii) OP 3 (tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability) through climate research, farmer training in adaptation, and enhanced value chain facilities against increased climate risks; (iv) OP 5 (promoting rural development and food security) by increasing the agricultural productivity and income of small-scale food producers; (v) OP 6 (strengthening governance and institutional capacity) by establishing horticulture experts' network and developing a nursery certification system; and (vi) OP 7 (fostering regional cooperation and integration) by investing in trade facilitation equipment and facilities, and training producers, buyers and traders in internationally accepted sanitary and phytosanitary standards.<sup>19</sup>

## B. Project Description

13. The project is aligned with the following impacts: (i) livelihoods of rural households improved, and (ii) resilience of farmers to climate change improved (footnote 15). The project will have the following outcome: beneficiary farmers' agricultural income from climate-resilient horticulture farming increased.<sup>20</sup>

14. **Output 1: Institutional capacity for nursery and horticulture sector management improved.** To ensure a sufficient supply of quality planting materials for fruit and nut crops, the project will support the establishment of partnership with at least 40 nurseries. Also, at least 10 private nurseries will be equipped to manage disease-free planting materials. At the national level, the project will (i) prepare nursery standards and 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 and/or 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 nurseries; (v) commission research on more climate-resilient and adaptable varieties of fruits and nuts; (vi) develop a nursery certification scheme and roll out with volunteer private nurseries; and (vii) train and certify cooperatives and private input suppliers that service project clusters. At the provincial level, the project will support (i) the development of interactive crop suitability maps at a crop variety level through the integration of climate, soil and landscape information; and (ii) land classification and zoning for orchard development.

15. **Output 2: Production and productivity of project farmers increased.** This output will develop about 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) the 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 (GAP), integrated pest management, harvest techniques and storage, and beekeeping;<sup>21</sup> and (ii) training about 30,000 fruit and nut farmer households in the packages of practice through (a) farmer group facilitators ensuring the inclusion of women (at least 30%) and disadvantaged groups (at least 20%) among project beneficiaries, and strengthening farmer group formation; (b) private technical service and input providers; (c) farmer-to-farmer extension programs, identifying lead farmers and training them to demonstrate

<sup>19</sup> ADB. 2018. [Strategy 2030: Achieving Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific](#). Manila.

<sup>20</sup> The design and monitoring framework is in Appendix 1.

<sup>21</sup> GAP are 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 government sector or private agencies.

climate change adaptation and best practices;<sup>22</sup> and (d) developing and promoting a digital technology-based farm advisory system.

16. In line with government regulations, the project will provide financial support through partial grants for farmers and cooperatives.<sup>23</sup> The project will provide (i) 50% of investment costs for farmers, farmer groups, and cooperatives; and (ii) 40% for agri-enterprises for the development of new orchards and drip irrigation systems on a reimbursement basis.<sup>24</sup> The project will also provide a grant to farmers based on the plant survival rate.<sup>25</sup> This plant survival grant is an incentive to encourage farmers to implement better farm management resulting in a higher plant survival rate.

17. The project will establish a credit guarantee fund (CGF) for smallholder horticulture farmers who face challenges in accessing formal rural finance. The project will make time deposits of \$6 million to up to three partner financial institutions, to be released in line with the CGF agreement to be signed between partner financial institutions and the project and on the approval of the CGF management committee.<sup>26</sup> This scheme aims to unlock about \$70 million of investment from beneficiaries by guaranteeing a portion of the credit risk of the project beneficiaries on a first loss basis.

18. The project will also explore the potential of carbon credit gain from horticulture farming in abandoned agricultural land as an additional income source. The project will conduct a study on the feasibility of accessing carbon finance from the voluntary market and the benefit-sharing mechanism and identify carbon financing from verified carbon sequestration benefits from orchards. Once the government endorses the benefit-sharing mechanism, the project will address policy gaps in voluntary carbon market access, monitor and report the verified carbon units, and develop payment indicators.<sup>27</sup>

19. In addition to 30,000 fruit and nut farmer households, the project will support about 10,000 smallholder farmers with less than 0.2 ha (4 *ropani*), who are unable to invest in commercial fruit and nut orchard development, in producing irrigated off-season vegetables and wet season nutritious food crops.<sup>28</sup> The GAFSP has 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 on

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<sup>22</sup> Out of 34 project districts, 9 districts ranked *very high* in the climate vulnerability ranking, 7 districts *high*, and 16 districts *moderate*.

<sup>23</sup> The draft business promotion act, which the Ministry of Agriculture and Livestock Development (MOALD) was reviewing in August 2021, indicates that the maximum ceiling of subsidies for horticultural orchard development is 50%, with a subsidy ceiling of 50% for farmers, farmer groups, and cooperatives; and 40% for agri-enterprises.

<sup>24</sup> The responsibilities at the local, provincial, and central levels and the beneficiary selection criteria and scope of eligible investments are detailed in the Project Administration Manual, Attachment D: Partial Subsidies for Farmers and Agri-enterprises (accessible from the list of linked documents in Appendix 2).

<sup>25</sup> A plant survival monitoring system will be established as part of the project monitoring and evaluation scheme and the land database system establishment (output 1). The project assumes 80% survival and allocates \$0.5 of grant incentives per surviving plant. This incentive will be provided for the first 2 years of orchard establishment.

<sup>26</sup> The estimated time deposit schedule, CGF management committee composition, and the short-listing and selection criteria for partner financial institutions are in the Project Administration Manual, Attachment C: Credit Guarantee Fund for Smallholder Horticulture Farmers (accessible from the list of linked documents in Appendix 2).

<sup>27</sup> The terms of reference of this service are in the Project Administration Manual, Attachment J: Detailed Terms of Reference (accessible from the list of linked documents in Appendix 2).

<sup>28</sup> Farmers with less than 0.2 ha will be encouraged to produce irrigated vegetables during the dry season and nutritious food crops (e.g., buckwheat, various millets, naked barley, amaranth and various pulses) during the wet season.

1,000 ha; and (iii) partial grants for the establishment of vegetable value addition equipment and infrastructure at three levels: cooperative, local and agribusiness.<sup>29</sup>

20. **Output 3: Value addition to hilly area horticulture produce enhanced.** This output will enable hilly area horticulture farmers to be directly engaged in various horticulture value chains and access more diverse or profitable marketing opportunities. This will be achieved through (i) preparing a business plan at the local government level, promoting agriculture and/or horticulture cooperatives and commodity-specific marketing associations to aggregate fruit, nuts and other crop produce, and manage the quality of horticultural products; (ii) developing training programs and training of cooperatives and associations in post-harvest management, food safety control system such as Hazard Analysis and Critical Control Points (HACCP), financial management, business, marketing, and entrepreneurship, while promoting female leadership; (iii) supporting the preparation of a contract between cooperatives and buyers; and (iv) developing or upgrading of horticulture value chain equipment and infrastructure, such as harvesting handling equipment, traceability systems, commodity storage and collection centers, and orchard predator fencing.<sup>30</sup>

21. For the horticulture value chain equipment and infrastructure, the project will provide \$12.5 million in matching grants to (i) cooperatives,<sup>31</sup> (ii) agribusiness and service providers,<sup>32</sup> and (iii) provincial and/or local governments.<sup>33</sup> The Competitive Grants Management Committee will review and approve the grant applications.<sup>34</sup>

22. To incorporate the lessons identified in para. 10, the project will offer training for cooperatives on business development and marketing, provide a guarantee fund to ensure beneficiaries' access to loans, commission research on climate-resilient varieties, cofinance agribusiness investment, roll out the nursery certification system to enhance input quality and quantity control, and apply cluster-based production by facilitating farmer group and cooperative formation and strengthening them.

### C. Value Added by ADB

23. The project adopts several innovative approaches that are new to the country, such as (i) carbon sequestration benefit assessment of fruit and nut tree vegetation on barren land, (ii) new fruit and nut tree variety development considering climate change scenarios, (iii) digital payments to enhance the transparency and effectiveness of subsidy distribution and the agricultural input supply system, (iv) the establishment of a horticulture advisory system and farmer group management monitoring based on digital technologies, (v) the exploration of carbon sequestration payments, (vi) the exploration of snow water harvesting for orchard management, and (vii) the exploration of a CGF for smallholder farmers. The CGF was jointly designed with ADB's Private

<sup>29</sup> The project will establish convergence with the World Food Programme activities of establishing and operating farmer nutrition schools to access and use food for improved dietary diversity financed by the GAFSP.

<sup>30</sup> HACCP is a systematic approach to the identification, evaluation, and control of food safety hazards. HACCP attempts to avoid hazards rather than inspect finished products. In the United States, for example, HACCP programs are mandatory for juice and meat.

<sup>31</sup> Any grant per cooperative will not exceed \$100,000, and the total project's support for cooperatives is estimated to be \$4 million to cover harvesting handling equipment and facilities for primary washing, sorting, grading, packaging, short-term storage, and quality control.

<sup>32</sup> Grants will be capped at \$200,000 each, and the total project's support is estimated to be less than \$2 million to cover traceability systems, certification systems, internet-based marketing, organic production, and cold chain linkages.

<sup>33</sup> A grant ceiling will be \$150,000 each, and the provincial and/or local governments are required to cover 50% of investment costs. The total project's support for local level infrastructure is estimated to be less than \$6.5 million.

<sup>34</sup> The committee composition and the beneficiary contribution requirements are detailed in the Project Administration Manual, Attachment E: Matching Grant Programs (accessible from the list of linked documents in Appendix 2).

Sector Financial Institutions Division, Private Sector Operations Department under a One ADB approach. The project's One ADB team will explore possibilities of nonsovereign lending to a partner financial institution that will finance project beneficiaries.

24. The grants from the Asian Development Fund (ADF)-13 thematic pool supporting regional cooperation and integration enable the exploration of Nepal's trade potential and contribute to regional economic benefits. The ADF-13 grants support (i) nursery standards, regulations, and the inspection system by developing a manual for importing and quarantining disease-free plant materials and providing vehicles for rolling out a certification program; (ii) training of private nurseries on nursery standards and a certification system; (iii) training of farmers and cooperatives on internationally accepted sanitary and phytosanitary standards; (iv) training of cooperatives on business development and facilitation with traders or buyers; and (v) capacity building for disease-free material multiplications and maintenance.

25. The project contributes to fulfilling ADB's commitment on the Kathmandu Declaration on Nepal's Green Resilient and Inclusive Development signed by the Government of India and international development partners. The project addresses the agenda, focusing on (i) enhancing natural capital for growth, climate benefits, decent job creation, and food and water security by training farmers in land and water resources management for agriculture; (ii) increasing resilience to future pandemic and climate by strengthening sustainable land management; and (iii) inclusive recovery and economic growth by providing equal opportunities to the excluded groups such as the poor, women and youth.<sup>35</sup>

#### D. Summary Cost Estimates and Financing Plan

26. The project is estimated to cost \$93.45 million (Table 1). Detailed cost estimates by expenditure category and by financier are included in the project administration manual (PAM).<sup>36</sup> Expenditure items include civil works, equipment, consulting services, CGF, capacity building, vehicles, partial grant support for farmers and cooperatives, salaries and allowances, and operation and maintenance (O&M).

**Table 1: Summary Cost Estimates**  
(\$ million)

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
1. Institutional capacity for nursery and horticulture sector management improved	14.25
2. Production and productivity of project farmers increased	49.12
3. Value addition to hilly area horticulture produce enhanced	16.12
4. Project Management	8.55
<b>Subtotal (A)</b>	<b>88.04</b>
<b>B. Contingencies<sup>c</sup></b>	<b>3.55</b>
<b>C. Financing Charges During Implementation<sup>d</sup></b>	<b>1.86</b>
<b>Total (A+B+C)</b>	<b>93.45</b>

<sup>a</sup> Includes taxes and duties of \$3.02 million. Such amount does not represent an excessive share of the project cost. The government will finance taxes and duties of \$3.02 million by the government sources.

<sup>b</sup> In 10 January 2022 prices, using an exchange rate of \$1.00 = NRs119.

<sup>c</sup> Physical and price contingencies, and a provision for exchange rate fluctuation are included.

<sup>d</sup> Includes interest and other charges on all sources of financing.

Source: Asian Development Bank estimates.

<sup>35</sup> The project was presented to and supported by international development partners on 21 April 2022.

<sup>36</sup> Project Administration Manual (accessible from the list of linked documents in Appendix 2).

27. The government has requested (i) a concessional loan of \$60.00 million from ADB's ordinary capital resources, and (ii) a grant not exceeding \$10.00 million from ADB's Special Funds resources (ADF) to help finance the project. The loan will have a 32-year term, including a grace period of 8 years; an interest rate of 1.0% per year during the grace period and 1.5% per year thereafter, and such other terms and conditions set forth in the draft loan and grant agreements.

28. The summary financing plan is in Table 2. ADB will finance the expenditures in relation to civil works; equipment; consulting services; the CGF; capacity building; salaries and allowances; O&M; and matching grants for farmers, cooperatives, and agri-enterprises. The government will finance 15.5% of the project cost including taxes and duties, and part of the civil works, equipment and materials, partial grants for orchard development, salaries of technical staff, and O&M. The GAFSP will provide grant cofinancing of \$9.00 million to be administered by ADB. In addition, the GAFSP will provide parallel collaborative cofinancing of \$3.00 million, on a grant basis, to be administered by the World Food Programme.<sup>37</sup>

**Table 2: Summary Financing Plan**

<b>Source</b>	<b>Amount (\$ million)</b>	<b>Share of Total (%)</b>
Asian Development Bank		
Ordinary capital resources (concessional loan)	60.00	64.2
Special Funds resources (ADF grant) <sup>a</sup>	10.00	10.7
Global Agriculture and Food Security Program (grant) <sup>b</sup>	9.00	9.6
Government	14.45	15.5
<b>Total</b>	<b>93.45</b>	<b>100.0</b>

ADF = Asian Development Fund.

<sup>a</sup> The ADF 13 thematic pool that supports regional cooperation and integration.

<sup>b</sup> Administered by the Asian Development Bank.

Source: Asian Development Bank estimates.

29. Food security investments are estimated to cost \$90.81 million, comprising \$10.00 million in an ADF grant, \$58.14 million in an ordinary capital resources loan, \$9.00 million in a GAFSP grant, and \$13.67 million from the Government of Nepal. Except financial charges, all the project costs contribute to enhanced soil and land management, agribusiness development, rural finance, extension services, agricultural input provision and quality control, and post-harvest management.

30. Climate mitigation is estimated to cost \$23.89 million, and climate adaptation is estimated to cost \$51.01 million. ADB will finance 88% of mitigation costs (\$21.01 million) and 69% of adaptation costs (\$35.09 million). The GAFSP will finance 2% of mitigation costs (\$0.48 million) and 10% of adaptation costs (\$5.19 million). Climate mitigation costs are derived from vegetation of barren land in hilly areas, and adaptation costs are derived from agtech-based climate information advisory services to farmers, climate-resilient farming extension, disease control and good practice certification, water harvesting and drip irrigation and enhanced soil fertility management, and project management costs. The project is estimated to generate an incremental carbon balance of 968,000 tons of carbon dioxide equivalent (tCO<sub>2</sub>e), sequestered by the project over 20 years or 48,400 tCO<sub>2</sub>e of reduced emissions per year.<sup>38</sup>

<sup>37</sup> The GAFSP-funded World Food Programme technical assistance will complement the project by establishing village farmer nutrition schools that will enable villages to increase access to and availability of food for improved dietary diversity. It will also address food processing and preservation, and link with health sessions on water, sanitation, and hygiene; infant and young children feeding; indoor air pollution; and maternal care and nutrition.

<sup>38</sup> Carbon Balance Appraisal (accessible from the list of linked documents in Appendix 2).

## E. Implementation Arrangements

31. The Ministry of Agriculture and Livestock Development (MOALD) will be the executing agency. The project will have seven implementing agencies: the NCFD, the Nepal Agricultural Research Council, and provincial directorates of agriculture development in Province 1, Bagmati, Gandaki, Karnali, and Sudurpashchim.<sup>39</sup> Local governments and district agricultural committees in the project areas will participate through provincial project steering committees. Implementation arrangements are summarized in Table 3 and described in detail in the PAM.

**Table 3: Implementation Arrangements**

Aspects	Arrangements		
Implementation period	September 2022–August 2029		
Estimated completion date	31 August 2029		
Estimated loan and grant closing date	28 February 2030		
<b>Management</b>			
(i) Oversight body	Project steering committee chaired by the secretary, MOALD and supported by the project director, chief of NCFD as member secretary Provincial project steering committee chaired by the respective secretaries of provincial agriculture ministries and supported by the provincial project manager, chief of DOAD as the member secretary		
(ii) Executing agency	MOALD		
(iii) Key implementing agencies	NCFD; NARC; DOAD, Province 1; DOAD, Bagmati; DOAD, Gandaki; DOAD, Karnali; and DOAD, Sudurpashchim		
(iv) Implementation unit	CPMU based in NCFD, Kathmandu, 13 staff PIUs based in DOAD of five provinces (Province 1, Bagmati, Gandaki, Karnali and Sudurpashchim) and NARC, total of 40 staff		
Procurement	OCB (nationally advertised)	12 contracts	\$9.19 million
	Request for quotations	9 contracts	\$1.16 million
Consulting services	Firm QCBS 90:10	2,089 person-months	\$13.06 million
	Firm CQS (farmer group facilitators)	6,020 person-months	\$0.63 million
Advance contracting	Advance contracting will apply for procurement of civil works and goods, and recruitment of consultants.		
Disbursement	Disbursement of the loan and grant proceeds will follow ADB's <i>Loan Disbursement Handbook</i> (2017, as amended from time to time) and detailed arrangements agreed between the government and ADB.		

ADB = Asian Development Bank, CPMU = central project management unit, CQS = consultants' qualifications selection, DOAD = Directorate of Agriculture Development, MOALD = Ministry of Agriculture and Livestock Development, NARC = Nepal Agricultural Research Council, NCFD = National Center for Fruit Development, OCB = open competitive bidding, PIU = project implementation unit, QCBS = quality- and cost-based selection.

Source: Asian Development Bank.

32. The project will strengthen governance under federalism by improving functional alignment, resource allocation, coordination, human resources management, and extension of service delivery in the target areas. MOALD has been the executing agency of several ADB projects, but the implementing agencies are new to implementing projects financed by ADB and other multilateral development banks. Project implementation support will be provided by establishing: (i) a project management unit headed by a project director (chief of the NCFD); and (ii) provincial project management units headed by a provincial project director appointed by respective provincial ministries related to agriculture.

<sup>39</sup> All implementing agencies are part of the government.

### III. DUE DILIGENCE

#### A. Technical

33. The project will introduce several digital innovations to enhance sustainable soil, land and water management, and the climate resilience of hilly area farmers. Real-time monitoring of weather and water information—as well as the analysis of soil fertility, climate and crop use pattern—will be done through an integrated decision support system; and farmers will receive easy-to-follow advisories through digital applications and farmer group facilitators. To better cope with excess rainfall during the monsoon, which is followed by drought, the project will enhance water storage and the use of precise irrigation to minimize losses. Additionally, the project will reduce the transaction costs of rural smallholder farmers' access to finance by improving rural credit services for smallholder farmers. The project will promote the adoption of online loan applications, a digital payment tracking system, and loan database that will be established by rural finance facilitators and information technology specialists, in collaboration with partner financial institutions. These technical innovations have a strong potential for replication in other hilly areas in Nepal, as well as India, which have similar agro-climatic and socioeconomic conditions.

#### B. Economic and Financial Viability

34. **Economic analysis.** The economic costs of the project comprises (i) the project investment and recurrent costs as specified in the PAM; (ii) subsequent replacements of plants and equipment, phased to align with the initial expenditure sequence 10 years after the investment; and (iii) O&M of the investments financed under outputs 2 and 3. The quantified benefits are the aggregation of the individual incremental fruit and nut farm income projections and the inclusion of GAFSP-financed smallholder off-season vegetable production. The economic analysis assumes a conservative rate of household adoption of 75%. The economic internal rate of return is estimated at 28.1%. Sensitivity analysis indicates the robustness of the economic viability.<sup>40</sup>

35. **Financial viability.** The financial analysis was conducted following ADB guidelines. The project does not aim for full cost recovery, and only limited public assets are expected to be created in the form of upgraded horticulture resource centers and stations, as well as equipment, of which incremental O&M needs are expected to be minor. Farm models include all investment and operational costs, which are commensurate with the inputs required to sustain the yields assumed. The expectation is that subsequent expansion of agricultural production will generate sufficient incremental financial resources to finance the upkeep of the related infrastructure.

#### C. Sustainability

36. The project benefits will be sustained over the long term through various measures as follows: (i) capacity building activities which improve the capacity of the implementing agencies and beneficiary organizations to manage and operate their assets, (ii) support for the O&M cost of the upgraded centers and facilities until project completion, (iii) ensuring beneficiary organizations demonstrate their ability to cover the O&M costs of the subprojects to qualify for subsidies and matching grants, and (iv) the partner financial institutions benefiting from the CGF will be subject to a financial due diligence procedure before selection and will be required to comply with domestic regulations and prudential norms throughout implementation. The

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<sup>40</sup> Economic and Financial Analysis (accessible from the list of linked documents in Appendix 2).

government will provide assurance that adequate budget support to cover incremental O&M will be provided to implementing agencies during implementation and after project completion.

#### D. Governance

37. **Financial management.** A financial management assessment was conducted for the NCFD, the Nepal Agricultural Research Council, and five provincial agriculture ministries, following ADB's guidelines.<sup>41</sup> The project will follow the country's financial management systems with certain additions to ensure compliance with ADB's financial management requirements. The assessed pre-mitigation financial management risk is *substantial* mainly because of (i) a decentralized fund flow involving several implementing agencies, (ii) the implementing agencies' lack of experience in ADB financial management requirements and disbursement procedures, (iii) inadequate accounts staff and frequent staff turnover, and (iv) delays in the disbursement of matching grants. The mitigation actions are in Table 4.

38. **Procurement.** All procurement of goods, works and services will follow the ADB Procurement Policy (2017, as amended from time to time) and the Procurement Regulations for ADB Borrowers (2017, as amended from time to time). The project procurement risks are *moderate*, considering risk mitigation measures incorporated in the project, including (i) developing a project management information system to monitor contract management and give a real-time overview of the contracting status; (ii) providing procurement and contract management training to the central project management unit (CPMU) and project implementation units (PIUs); and (iii) engaging procurement specialists at the CPMU and PIU levels. Value for money will be achieved through (i) combining packages following the geographical locations to encourage competition and response, and (ii) contracting awards based on the lowest evaluated substantially responsive bid. To ensure efficiency, fairness and transparency, the national e-procurement system will be used. In view of the NCFD's lack of experience with consultant recruitment for ADB financed projects and the need to expedite consultant mobilization, the government requested ADB to recruit the packages of practice preparation consultants and the project implementation consultants. The NCFD retains the responsibility for negotiating and signing the contracts, issuing the notice to proceed, and supervising their services.

39. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government, the executing agency, and implementing agencies. ADB conducted integrity due diligence on seven implementing agencies, and significant risks and mitigating measures are summarized in Table 4. The specific policy requirements and supplementary measures are described in the PAM (footnote 36).

#### E. Poverty, Social, and Gender

40. **Poverty reduction and social inclusion.** The project targets farmers in hilly areas who are increasingly dependent on remittances, which have become the most important source of income, leaving nearly 30% of cultivated land fallow.<sup>42</sup> The project's poverty and social assessment reveals that 93% of surveyed households in the project districts rely on agriculture as the main source of income, earning about \$940 per year, and fruits and nuts are mostly produced for self-consumption.<sup>43</sup> Most farmers reported experience in drought, crop damage, and

<sup>41</sup> ADB. 2015. [Technical Guidance Note on Financial Management Assessment](#). Manila.

<sup>42</sup> Detailed Poverty and Social Assessment (accessible from the list of linked documents in Appendix 2). The assessment was prepared based on surveying 274 households in 10 municipalities.

<sup>43</sup> The average income estimation excluded a few outliers who earn more than NRs1,000,000.



difficulties in accessing loan and water sources. The indigenous peoples' population is higher in the selected target districts of Province 1 (60%), Bagmati (56%) and Gandaki (40%) and lower in Karnali (13%) and Sudurpashchim (1%). In selected communities, indigenous people reported decreased decision-making power and less land holdings of women.

41. The COVID-19 crisis has affected the livelihoods of Nepalese households, with 1 out of 10 households reporting a loss of livelihood and 3 out of 10 households reporting a reduction in income. Target beneficiaries will directly receive income increase support through horticulture farming in hilly areas. Through the project's production, marketing, and business support, beneficiary farmers are expected to start generating revenues starting in year 3. The project's indirect impact will be job opportunities created for landless people. Labor in horticulture farming and cooperative management such as picking, sorting, primary washing, accounting, and packaging will offer job opportunities for people who do not have farming land.

42. **Gender.** The project is categorized as effective gender mainstreaming with a focus to promoting women and disadvantaged groups' empowerment, participation, and inclusion through the project's gender equality and social inclusion (GESI) action plan. The project's poverty and social assessment highlighted that there is high gender disparity in landholding, income (households headed by women have less than half the average income of households headed by men), decision-making, and access to agri-information and market. Women who are heads of households, especially Dalit women, face inequitable access to information, resources, and opportunities because of sociocultural and systemic barriers. More men own farmland even though more women work in producing agri-products. Still, most women are affiliated with cooperatives and are more actively engaged in agriculture. A gender focal person designated in each PIU will lead the effective implementation, monitoring, and reporting of the GESI action plan, supported by the GESI specialists to be engaged at the CPMU and PIUs. GESI action plan activities and implementing arrangements are detailed in the PAM.

## F. Safeguards

43. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as follows.<sup>44</sup>

44. **Environment (category B).** The environmental risks and impacts caused by the horticulture center upgrade are site specific and temporary; and an initial environmental examination including an environmental management plan was prepared.<sup>45</sup> The project areas may include existing farms in the Annapurna Conservation Area. However, the project will have no biodiversity- and habitat-related impacts on its natural landscape because the orchard developments will be confined to existing private farmlands and no forest will be converted into new orchards. Generally, investments in agricultural production are not expected to cause significant adverse impacts. In addition, the beneficiary selection committees will screen, select, and approve only category B or C proposals, and the project will provide GAP training to farmers.

45. **Involuntary resettlement (category C).** The project will not involve any involuntary acquisition of land or restriction on land use. The land required for the horticulture centers or stations rehabilitation and upgrading will be confined to the existing boundary of government premises that are vacant or unused. Orchard development assistance will be approved only when the beneficiary farmers show evidence that the proposed land is either owned or cultivated by

<sup>44</sup> ADB. [Safeguard Categories](#).

<sup>45</sup> Initial Environmental Examination (accessible from the list of linked documents in Appendix 2).

themselves or has a lease or user right agreement and not claimed by others.<sup>46</sup> Any participation in project activities is based on voluntary choice of the willing participants. The executing agency and implementing agencies will screen, implement, and monitor the selection criteria; and ensure that any activity undertaken under the project does not have any physical or economic impact.

**46. Indigenous peoples (category B).** Indigenous peoples constitute at least half of the population in Province 1, Bagmati, and Gandaki; and are a minority in Karnali and Sudurpashchim provinces. While the exact area and actual group of indigenous people to participate in the project activity will only be confirmed after the beneficiary selection committees screen and approve beneficiaries, the project is expected to bring positive impacts to indigenous people's communities through capacity building, new technology training, farmer facilitation, and financial support. An indigenous people's plan was not prepared as the project design, GESI action plan, and stakeholder participation and communication strategy ensure positive benefits to indigenous peoples. The project activity selection criteria developed under the project will be applied to ensure that the project does not finance activities with negative impacts on indigenous peoples. The project will implement an indigenous peoples planning framework that delineates the screening, impact assessment, consultation, and reporting and monitoring requirements for the benefit of indigenous peoples.<sup>47</sup>

## G. Summary of Risk Assessment and Risk Management Plan

47. Significant risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.<sup>48</sup>

**Table 4: Summary of Risks and Mitigating Measures**

Risks	Mitigation Measures
The project will be the first investment project to be implemented following federalism, announced in 2015. The rules and procedures for coordination between central and provincial governments are not always clear and this will delay project implementation.	A two-tier project management structure will be adopted: the CPMU at the central government level and the PIU at the provincial level. Output 1 allocates resources for periodic and regular capacity building of five provincial ministries and knowledge exchange.
Frequent transfer of staff in the CPMU and PIUs disturbs smooth functioning of the project.	Long-term consultants engaged at the CPMU and PIUs to support the government staff will ensure continuity of operations.
The complex financial management arrangements, with several implementing agencies and lack of accounts staff and experience with ADB financed projects, may result in non-compliance with ADB's financial requirements—including material misstatements in the financial reports and qualified audit reports as well as delays in disbursements.	Project-specific mitigation measures will include (i) appointing qualified financial staff and engaging financial management consultants in the CPMU and PIUs; (ii) providing continuous training in ADB financial reporting, audit requirements, and disbursement procedures and systems; and (iii) including comprehensive financial information in the quarterly project progress reports. Moreover, the implementing agencies will maintain separate books of accounts for the project and the consolidated project financial statements will be audited annually by an independent auditor acceptable to ADB, following auditing standards acceptable to ADB.

ADB = Asian Development Bank, CPMU = central project management unit, PIU = project implementation unit.  
Source: Asian Development Bank.

<sup>46</sup> Under the Cooperative Act 2017, farmer groups are registered at the agriculture unit of the local level, and individual farmers are registered in the government's farmer registration management system.

<sup>47</sup> Indigenous Peoples Planning Framework (accessible from the list of linked documents in Appendix 2).

<sup>48</sup> Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

#### **IV. ASSURANCES AND CONDITIONS**

48. The government and the MOALD have assured ADB that implementation of the project shall conform to all applicable ADB requirements, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, financial management, and disbursement as described in detail in the PAM and loan documents.

49. As a condition for loan withdrawal regarding the CGF described in para. 15 (iv), ADB shall have approved the endorsement of time deposits to eligible partner financial institutions made by the CGF committee set out in the PAM. The government and the MOALD have agreed with ADB on certain covenants for the project, which are set forth in the draft loan agreement and grant agreements.

#### **V. RECOMMENDATION**

50. I am satisfied that the proposed loan and grant would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve:

- (i) the loan of \$60,000,000 to Nepal for the Nuts and Fruits in Hilly Areas Project, from ADB's ordinary capital resources, in concessional terms, with an interest charge at the rate of 1.0% per year during the grace period and 1.5% per year thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board; and
- (ii) the grant not exceeding \$10,000,000 to Nepal, from ADB's Special Funds resources (Asian Development Fund), for the Nuts and Fruits in Hilly Areas Project, on terms and conditions that are substantially in accordance with those set forth in the draft grant agreement presented to the Board.

Masatsugu Asakawa  
President

22 August 2022

## DESIGN AND MONITORING FRAMEWORK

<b>Impacts the Project is Aligned with</b>			
Livelihoods of rural households improved (Agriculture Development Strategy 2015–2035) <sup>a</sup>			
Resilience of farmers to climate change improved (Agriculture Development Strategy 2015-2035) <sup>a</sup>			
<b>Results Chain</b>	<b>Performance Indicators</b>	<b>Data Sources and Reporting Mechanisms</b>	<b>Risks and Critical Assumptions</b>
<p><b>Outcome</b> Beneficiary farmers’ agricultural income from climate-resilient horticulture farming increased</p>	<p>By 2030: a. Agricultural income of beneficiary farmer households increased by at least 10% (OP 1.3) (2021 baseline: not applicable)<sup>b</sup>  b. At least 50 municipalities providing agro-climatic data to at least 50% of farmer household beneficiaries (OP 3.2) (2021 baseline: not applicable)</p>	<p>a.–b. Project baseline, midterm, and outcome survey reports</p>	<p>R: Climate change exceeds the current scenarios, inducing more diseases or weather extremes.  A: Demand for fruits and nuts continues to grow.</p>
<p><b>Outputs</b>  1. Institutional capacity for nursery and horticulture sector management improved  2. Production and productivity of project farmers increased</p>	<p>By 2029:  1a. At least 40 private nursery partnerships established (OP 6.1.2) (2021 baseline: 0)  1b. At least 10 private nurseries supported for disease-free sapling management (OP 6.2.1) (2021 baseline: 0)  2a. At least 10,000 hectares of new fruit and nut orchards established, with at least 30% women and 20% DAG household representation<sup>c</sup> (OP 5.3) (GAFSP indicator 2) (2021 baseline: 0)  2b. At least 1,000 hectares of climate smart vegetable and other nutritious crop production areas established, with at least 30% women and 20% DAG household representation (OP 5.3) (GAFSP indicator 2) (2021 baseline: 0)  2c. At least 30,000 households supported for fruit and nut production and marketing, with at least 30% women and 20% DAG households representation (OP 5.3.2) (GAFSP indicator 1) (2021 baseline: 0)</p>	<p>1a. Private nursery sales accounts  1b. Directorate of Agriculture Development nursery inspection records  2a.–f. Quarterly and annual project progress reports</p>	<p>A: The budget provision is sufficient to permanently finance annual nursery regulatory inspections  A: Women have time to undertake nursery development and management.  A: Cooperatives are interested in providing technical advisory services to member farmers.</p>

Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
3. Value addition to hilly area horticulture produce enhanced	<p>2d. At least 10,000 households supported for vegetable production and marketing with at least 30% women and 20% DAG household representation (OP 5.3.2) (GAFSP indicator 3) (2021 baseline: 0)</p> <p>2e. At least 40% of project areas improved through drip irrigation infrastructure, with at least 40% of land managed by women or DAG representatives (OP 5.3.1) (GAFSP indicator 2) (2021 baseline: 0)</p> <p>2f. At least 20,000 farmers reporting increased awareness of “packages of practice”, of which at least 40% are women or from DAG<sup>d</sup> (GAFSP indicator 13) (2021 baseline: 0)</p> <p>2g. Guarantee fund for smallholder farmers established (OP 1.3.2) (GAFSP Indicator 5) (2021 baseline: 0%)</p> <p>3a. At least one business plan produced per local government (or municipality) (OP 1.2.2; OP 2.3.1) (GAFSP indicator 4, gender disaggregated) (2021 baseline: 0)</p> <p>3b. At least 80% of farmer cooperative members trained, with at least 30% women and 20% DAGs, report increased knowledge in cooperative management and marketing (OP 1.2.2; OP 2.3.1) (2021 baseline: 0)</p> <p>3c. At least one storage, agri-logistics, and market assets constructed or rehabilitated in at least 50 local governments (OP 5.2.2) (OP 7.2) (GAFSP indicator 8) (2021 baseline: 0)</p> <p>3d. At least one draft contract between cooperatives and buyers prepared per local government (OP 5.2.3) (2021 baseline: 0)</p>	<p>2g. PIU and cooperatives’ rural financing database records</p> <p>3a. Quarterly and annual project progress reports</p> <p>3b. Training feedback form</p> <p>3c. Quarterly and annual project progress reports</p> <p>3d. Cooperative records, and quarterly and annual project progress reports</p>	<p>R: Monopolistic behavior by private traders or trader cartels undermines cooperative sector competitiveness or market access.</p> <p>A: Private enterprises trust that the project-financed public-private partnership will be market oriented and are motivated to collaborate.</p>

## **Key Activities with Milestones**

### **1. Institutional capacity for nursery and horticulture sector management improved**

- 1.1 Develop interactive crop suitability maps at a crop variety level through the integration of climate, soil, and landscape information (Q4 2023)
- 1.2 Support the establishment and operation of local land use database with land classification and zoning for orchard development (Q4 2025)
- 1.3 Prepare nursery standards, regulations, and inspection system (Q2 2025)
- 1.4 Upgrade horticulture station/center facilities for testing, cleaning and maintenance of planting materials, and nursery quality control (Q2 2025)
- 1.5 Train horticulture resource center staff in molecular marking, mother plantation management, and other nursery management techniques/system; and organize knowledge exchange programs and workshops to meet internationally accepted sanitary and phytosanitary standards (Q1 2029)
- 1.6 Train and certify cooperatives and private input suppliers that service project clusters (Q2 2028)
- 1.7 Support private nursery upgrade to ensure healthy and quality planting material production, and transfer genetic technologies to private nurseries (Q2 2026)
- 1.8 Commission research on more climate-resilient and adaptable varieties of fruits and nuts, and other crop-specific technologies in Nepal (Q3 2027)
- 1.9 Develop a nursery certification scheme and roll out with volunteer private nurseries (Q3 2029)

### **2. Production and productivity of project farmers increased**

- 2.1 Engage farmer group facilitators and establish a ward-level project implementation and monitoring system in partnership with target farmers, promoting female leadership, and gender equality and social inclusion (Q3 2029)
- 2.2 Provide quality planting materials to beneficiary farmers through partnership with private nurseries and support their nursery quality control (Q4 2025)
- 2.3 Prepare packages of practice and train farmers/cooperatives in packages of practice (Q4 2026)
- 2.4 Develop and operationalize an agricultural digital advisory platform for fruit and nut farmers, including female farmers and the vulnerable and/or excluded (Q4 2027)
- 2.5 Develop farmer-to-farmer extension programs, including climate change adaptation measures and good agricultural practices, and build the capacity of lead farmers for running demonstrations (Q3 2029)
- 2.6 Establish foundation for carbon sequestration measurement and financing for fruit and nut orchard management (Q4 2027)
- 2.7 Support the development of fruit and nut orchards and vegetable farming land (quality agriculture input purchase, land preparation, hail nets, and labor [partially financed]) (Q1 2026)
- 2.8 Set up and operate a credit guarantee fund for rural smallholders and agribusinesses, and its digital payment system for transactions and monitoring, in partnership with participating banks and financial institutions (Q4 2029)
- 2.9 Develop and procure drip irrigation, particularly for women and disadvantaged groups (Q1 2026)

### **3. Value addition to hilly area horticulture produce enhanced**

- 3.1 Promote cooperatives and commodity-specific marketing associations to aggregate fruit, nut, vegetable, and other crop produce (Q4 2026)
- 3.2 Strengthen cooperatives and commodity-specific federations; develop training programs; and conduct training for cooperatives and federations on post-harvest management, Hazard Analysis and Critical Control Points, financial management, business, marketing, entrepreneurship, promoting female leadership and gender equality and social inclusion (Q3 2029)
- 3.3 Provide matching grant support to cooperatives for packaging, storage, and quality control (Q4 2028)
- 3.4 Incentivize enterprises that link cooperatives to markets (Q4 2028)
- 3.5 Cofinance provincial or local government planning and investment in public infrastructure for improved marketing, such as collection centers and storage facilities (Q4 2028)
- 3.6 Organize regional workshops to improve the control of fruit, nut, and vegetable trade requirements and horticulture food safety (Q3 2028)

<p><b>Project Management Activities</b></p> <p>Establish a central project management unit and provincial project management units</p> <p>Establish a project monitoring and reporting system including baseline survey, periodic progress reports, midterm report, and completion report, adopting Food Insecurity Experience Scale as per the GAFSP monitoring and evaluation plan</p> <p>Engage project implementation support staff and consultants</p> <p>Implement the gender equality and social inclusion action plan</p> <p>Operationalize accounting, auditing, and procurement systems</p>
<p><b>Inputs</b></p> <p>Asian Development Bank: \$60.00 million loan (concessional ordinary capital resources lending) \$10.00 million grant (ADF-13)</p> <p>GAFSP: \$9.00 million (grant)</p> <p>Government of Nepal: \$14.45 million</p>
<p><b>Assumptions for Partner Financing</b></p> <p>World Food Programme: \$3.00 million (parallel collaborative financing grant financed by GAFSP)</p> <p>A = assumption; ADF = Asian Development Fund; DAG = disadvantaged groups (including women, indigenous peoples, and Dalit); GAFSP = Global Agriculture and Food Security Program; OP = operational priority; PIU = project implementation unit, Q = quarter; R = risk.</p> <p><sup>a</sup> Government of Nepal, Ministry of Agricultural Development. 2016. <a href="#">Agricultural Development Strategy 2015 to 2035</a>. Kathmandu.</p> <p><sup>b</sup> The agriculture income only includes reported cash income and does not include in-kind income, such as agricultural produce for subsistence purposes. The income is calculated as the average of all farmer household respondents and includes outliers.</p> <p><sup>c</sup> Each project beneficiary household will appoint a household representative. This indicator will count the project areas that are managed by these project beneficiary household representatives.</p> <p><sup>d</sup> Packages of practice, among other things, include soil conservation, soil fertility management, natural hazard risk mitigation, drip and fertigation system management, integrated pest management, and crop protection.</p>

**Contribution to Strategy 2030 Operational Priorities**

Expected values and methodological details for all OP indicators to which this operation will contribute are provided in Contribution to Strategy 2030 Operational Priorities (accessible from the list of linked documents in Appendix 2).

**GAFSP Tier 2 Core Indicators<sup>1</sup>**

1. Number of people receiving direct benefits (person). Disaggregation: of which, number of females.
2. Land area receiving improved production support (hectare) Disaggregation: area provided with new/improved irrigation or drainage services (hectare)
4. Number of smallholders producers/processors receiving productivity enhancement support (farmer). Disaggregation: of which, female producers/processors
7. Number of processing, storage, and market facilities constructed and/or rehabilitated (facility)
8. Farmers who are supported in accessing improved marketing opportunities (farmer). Disaggregation: of which, female farmers.
13. Number of farmers receiving inputs or service on climate-resilient or sustainable agriculture practices (farmers). Disaggregation: of which, female farmers, and of which, number of farmers adopting technologies or practices received.

Sources: Asian Development Bank and draft GAFSP Revised Monitoring and Evaluation Plan 2022 (tier 2 and tier 3 indicators).

<sup>1</sup> The project is required to report against GAFSP Tier 2 Core Indicators to the GAFSP Coordination Unit on a six-monthly basis.

**LIST OF LINKED DOCUMENTS**

<http://www.adb.org/Documents/RRPs/?id=48218-006-3>

1. Loan Agreement
2. Grant Agreement: (Special Operations)
3. Grant Agreement: (Externally Financed)
4. Sector Assessment (Summary): Agriculture, Natural Resources, and Rural Development
5. Project Administration Manual
6. Economic and Financial Analysis
7. Summary Poverty Reduction and Social Strategy
8. Risk Assessment and Risk Management Plan
9. Contribution to Strategy 2030 Operational Priorities
10. Climate Change Assessment
11. Gender Equality and Social Inclusion Action Plan
12. Initial Environmental Examination
13. Indigenous Peoples Planning Framework

**Supplementary Documents**

14. Strategic Procurement Planning
15. Procurement Risk Assessment
16. Financial Management Assessment
17. Stakeholder Participation and Communication Strategy
18. Feasibility Study: Irrigation Systems and Water Source Development
19. Feasibility Study Report: Credit Guarantee Fund for Smallholder Horticulture Farmers
20. Detailed Economic Analysis
21. Climate Risk and Adaptation Assessment
22. Carbon Balance Appraisal Report
23. Detailed Poverty and Social Assessment