US Agency for International Development (USAID)
USAID/Armenia
Initial Environmental Examination (IEE)

Program/Project/Activity Data

<table>
<thead>
<tr>
<th>Activity/Project Name:</th>
<th>Rural Economic Development – New Economic Opportunities (RED-NEO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistance Objective:</td>
<td>More Inclusive and Sustainable Economic Growth</td>
</tr>
<tr>
<td>Program Area:</td>
<td>Economic Growth</td>
</tr>
<tr>
<td>Country(ies) and/or Operating Unit:</td>
<td>Armenia/E&amp;E</td>
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<tr>
<td>Originating Office:</td>
<td>Sustainable Development Office (SDO)</td>
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<tr>
<td>Date:</td>
<td>January 25, 2018</td>
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<table>
<thead>
<tr>
<th>PAD Level IEE:</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Supplemental IEE:</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>RCE/IEE Amendment:</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>DCN of Amendment(s):</td>
<td>DCN: 2015-ARM-010, 2017-ARM-001</td>
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If Yes, Purpose of Amendment (AMD): Adding new activity Rural Economic Development – New Economic Opportunities (RED-NEO)

DCN(s) of All Related EA/IEE/RCE/ER(s):

Implementation Start/End: November 2018 – November, 2023
LOP: FY 2019 – FY2023

Funding Amount: $4,000,000
LOP Amount: $43,908,423

Contract/Award Number (if known):

IEE Expiration Date (if any): November, 2023
Reporting due dates (if any): 

Recommended Environmental Determination:
- Categorical Exclusion: ☒
- Positive Determination: ☐
- Negative Determination: ☐
- Deferral: ☐

Additional Elements:
- Conditions: ☒
- Local Procurement: ☒
- Government to Government: ☐
- Donor Co-Funded: ☐
- Sustainability Analysis (included): ☐
- Climate Change Vulnerability Analysis (included): ☐

1. Background and Project Description

1.1. Purpose and Scope of IEE

The purpose of this amendment to PAD level IEE is to analyze potential environmental impacts and to recommend environmental determination for the RED-NEO Activity. The RED-NEO activity aims to promote inclusive, sustainable economic security and economic growth in targeted areas, with an emphasis on: (a) facilitating market linkages between producers and buyers; (b) promoting local economic development by establishing networks, and; (c) improving SME/farms/firms/cooperatives development and growth. While specifically focusing on these aspects the activity will also improve
the qualitative (production, turnover etc.) performance of rural businesses and cooperatives and strengthen their capacity and performance to meet certain quality standards, thus fostering the continued development of a competitive agricultural sector.

1.2 Project Overview

Agriculture is a key contributor to the Armenian economy and a major source of employment. In 2016 it accounted for about 20% of GDP, approximately 18% of export earnings, and 44% employment. During the last few years, as other sectors contracted due to the economic crisis in Russia, Armenia’s major trading partner, Armenia was able to beat forecasts of negative GDP growth on the strength of the agriculture sector. While the agriculture sector has been resilient, it has been functioning at a low level of intensity and has not reached its full potential. This activity is a logical successor to the Mission’s Partnerships for Rural Prosperity (PRP), Advanced Rural Development Initiatives (ARDI) and Development of Private Extension Services System in Armenia (DPESSA) projects. RED-NEO will closely cooperate and coordinate activities with the Ministry of Agriculture (MoA) and the Ministry of Territorial Administration and Development (MTAD) in line with the Government of Armenia’s (GOAM) Agriculture Development Strategy, Proportional Territorial Development Strategy, as well as ongoing and upcoming projects funded by other donors and lenders.

1.3 Project Description

RED-NEO would work at the national level to integrate rural communities and businesses with economic networks and is required to work with at least 50 businesses in at least 50 communities. The methodology of identification of the products, sectors and communities to target, and establishment of networks would be proposed by the applicants; use of participatory, collaborative and co-creation approaches are highly encouraged. It is recommended that horticulture value chain, including fruits/vegetables (including dried fruits and greenhouses), berries, viticulture, weather stations (early warning on irrigation, pests and disease management) as well as tourism/hospitality (food and beverage, etc.) and ag light machinery repair be covered by this activity. Small and medium size rural businesses, i.e. firms, farmers, coops, rural SMEs etc., are the beneficiaries of this activity. The project team will work with beneficiaries at their current level of sophistication and support them to grow, taking them from a poor understanding and inconsistent application of required quality standards (also determined by the market) to consistently meeting such standards; from limited use of technology to the productive use of modern technology; from poor financial planning to more sophisticated planning with the capacity to access credit; and from ad hoc production toward strategic planning with a long-term horizon, increasingly strong market awareness, and sophisticated marketing strategies.

The activity goal is to: Promote inclusive, sustainable economic growth and economic security in targeted areas.

The activity objectives are: (i) improve SMEs/coops/firms/farms development and growth; (ii) facilitate market linkages between producers and buyers; (iii) promote local economic development by establishing networks. These objectives are expected to be achieved through progress towards the result areas of two components as summarized below.
Component 1: Rural Incomes through Agricultural and Other Production Increased and Diversified. This component will assist rural small businesses to identify value-added opportunities and translate them into sustainable economic activities. Assistance will be focused on increasing the volumes and improved quality produced and per unit values of the targeted high-value crops, working with processors to identify and develop new products and locate new markets for all targeted crops and products. Activities under this component might include, but are not be limited to the following technical assistance: support to establish nurseries (new varieties); support in establish modern greenhouses and orchards (hail protected); support for berry production (open field and greenhouse); installation of meteorological stations to provide early warning information to farmers (applied IT and innovation); upgrade of production/processing facilities etc.

Component 2: Farmers and Products Linked to Sustainable Markets. RED-NEO will connect farmers to identified markets for the targeted products via processors, traders, exporters or farmers’ organizations in structures and ways that are appropriate, effective and sustainable and which provide opportunities to increase their sales and incomes. In some cases, agricultural markets that ensure the efficient flow of goods from farmer to end consumer share common constraints across crops, while other issues are limited to the specific value chains – food and non-food – in which these farmers operate. In many cases, a household’s desperate need for cash at certain times of the year forced farmers to sell at a lower price than otherwise possible. Additionally, substantial price fluctuations and a lack of understanding of market demands constrain their earnings from agricultural sales. Lack of post-harvest handling technologies and know-how, as well as inconsistent sorting and grading techniques, further reduces potential income. Activities under this component might include, but are not limited to the following: linking coops/farmers to local hotels and supermarkets; supporting participation in B2B events and trade fairs; establishing consolidation platforms; and bridging the gap between small producers and large processors etc. In case of necessity, some basic financial management training might be provided to the beneficiaries of RED-NEO.

In an effort to provide innovative and flexible mechanisms to promote public-private activities as well as other agreed upon goals, Grants Under Contract (GUC) will be initiated and managed by the prime Recipient. The GUC component will provide small grants to private sector organizations including businesses, foundations, institutions, producer groups, and/or cooperatives. Grants can be made to groups who are implementing their own programs (grant component should not exceed 30% of program cost, but not more than $15K each) that have goals that support the objectives of this activity (for example, an existing producer organization, or private sector company that needs targeted assistance to address a marketing constraint or a cooperative that envisions product diversification and cannot access seed money).

Expected outcomes and results of the project:

By the end of the activity, it is expected that the following results will be achieved:

- Produced volume of high-value vegetables and fruits increased
- Value of agricultural production and processing increased
- Household incomes due to non-agricultural activities increased.
- Producer organizations established
- Agro-processors establish contractual relationships with farmer cooperatives
- Improved post-harvest handling, packaging; branding; storage, and transportation techniques introduced.
- Private sector engagement and investment in upgrading agricultural value chains specified in Program Description will be increased.
2. Baseline Environmental Information

2.1 Locations Affected and Environmental Context

General Baseline data

Armenia has demonstrated its resilience in the face of severe economic downturns and instability since independence. Notwithstanding these difficulties, Armenia has made significant strides in reducing poverty and laying the foundations for economic growth, and USAID has provided assistance in support of these efforts for 20 years. However, developments challenges still exist which confront Armenia’s further transition to broad-based prosperity.

Currently, the country faces a trade embargo and closed borders with Azerbaijan and Turkey. It is striving to develop a market based economy and become competitive worldwide. While growth has resumed to a certain degree since the global financial crisis, significant structural challenges remain. Growth typically benefits specific segments of society primarily located in urban areas in and around Yerevan. Poverty remains a serious problem and it is estimated that 25-50% of the rural population lives at or below the national poverty line.

In consultation with the GOAM, donors, private sector and other stakeholders the Mission has developed the strategy to achieve more inclusive and sustainable economic growth. More inclusive and sustainable economic growth is critical to increase growth that generates productive employment (especially with focus on rural areas) and promotes equality of opportunity through a diversified mix of competitive industries and sectors, and to ensure that environmentally friendly growth, stability and more equitable prosperity are sustained over the long-term.

The Mission implements its economic growth strategic vision in part through the formation of a Development Objective Assistance Agreement (DOAG) with the GOAM.

Sector Specific Baseline Data:

*Rural development and agriculture:* Many challenges continue to exist for the rural economy in Armenia. Rural areas have the highest levels of poverty, and marginalization is the greatest. While approximately 40% of the labor force is employed in agriculture; it only contributes to 20% of GDP due to low productivity. Farm and rural non-farm incomes are low and labor is underutilized, therefore, it is critical to increase production and incomes in agriculture and non-farm activities.

Constraints to rural non-farm MSMEs such as lack of start-up capital or sufficient access to markets hinders rural growth. Under-investment in rural infrastructure also highlights the disparity between urban centers and rural areas, limiting commerce and trade between the two. Constraints to non-farm employment and on-farm opportunities are clearly seen in the high levels of unemployment and the decreasing productivity of farms.

Support to local economic development and agricultural value chains will promote prosperity in rural Armenia communities through supporting sound local and regional economic governance, job creation, improved agricultural services. To promote economic growth, the Government of Armenia is trying to facilitate development of MSMEs as they are leading force in developing sustainable economic prosperity. To be competitive, Armenia needs to focus enhancing the ability of rural enterprises to access low interest rate finance.

*Rural Tourism:* Armenia’s tourism industry has shown significant growth in the past 10 years. Tourism has a strong multiplier effect serving as a major source of economic development in developing countries. Tourism can generate jobs directly through hotels, restaurants, souvenir sales etc., and indirectly through the supply of goods and services needed by tourism-related businesses. Promotion
of the country as a tourism destination in an effective and targeted manner will lead to an awareness and positive perception of the country for foreign direct investment, exports and in public diplomacy. Armenia’s tourism industry is at the center of the government’s and donor attention. Currently USAID is assisting development of new tour products and tourism services in rural areas of Armenia that help maximize tourist experiences, and this new activity will contribute to rural hospitality sector.

2.2 Description of Applicable Environmental and Natural Resource Legal Requirements
Policies, Laws, and Regulations

It is important to note that Armenia has a comprehensive legal framework on environment-related issues through both domestic legislation and international agreements that the country is party to. However, due to a lack of capacity and staffing constraints (e.g. environmental inspectorate), budget constraints, corruption, weak data, feedback and public participation in decision-making, the enforcement of newly developed or updated legislation is a big issue in Armenia. All these reflect a lack of political will at different levels to protect and conserve natural resources, and implement sustainable practices in different areas, including agriculture. Limited enforcement of legislation and regulations is one of the root causes of the unsustainable use of resources. The Armenian Law on Environmental Impact Assessment (2014) states that all economic and industrial activities are required to obtain clearance from the Ministry of Nature Protection through the satisfactory performance of an Environmental Review and Impact Assessment: i) if they are in one of the following categories A, B or C listed in the law: ii) they are located in a protected area. The regulation on Nature Protection and Nature Utilization Payments requires certain polluting organizations and individuals to pay into the State budget to fund environmental programs throughout the country. Law on environmental education and training of the population has set the environmental standards in education. Under this law continuous environmental education contains the different levels, including high education. Waste management is the principal issue in the Republic of Armenia (RA) and it is regulated through RA International Agreements, RA Constitution, RA Law on Waste and a number of other legal acts. RA Law on Waste adopted on November 24, 2004 is a key piece of legislation regulating relations on waste collection, storage, transportation, processing, recycling, removal and volume reduction. Land Code of RA regulates land use, specifically use of different types of lands, including agricultural land. This activity will also promote environmental considerations in sectorial policies and regulations in agriculture.

2.3 Country/Ministry/Municipality Environmental Capacity Analysis

Due to lack of capacity and staffing constraints at the Ministerial level, in many cases decisions not well-informed and fail to take into account recommendations concerning environmental protection and sustainable use of natural resources. As of community level - larger communities maintain the in-house capacity to oversee compliance with environmental regulations during the implementation of projects involving infrastructure, as well as waste collection and administration and other type of services connected with environment. Typically, special staff is assigned to review the process and provide analytical status reports. If violations occur, the municipality should then take corrective action. Due to small size and limited staff capacity, smaller communities/villages assign this role to the mayor who has to make sure that community services and projects are carried out in accordance with environmental regulations. Municipalities with larger budgets occasionally outsource environmental.
analysis to engineering companies, which, along with construction services, maintain experts specializing in environmental regulations. With USAID’s and other donors support the capacities of the Ministries of Economic Development and Investments, Nature Protection, Agriculture, Energy and Natural Resource Management as well as municipalities and local government has been strengthened to address environmental issues. In particular USAID’s EDMC, PRP, ARDI, ATC and upcoming RED-NEO are instrumental in developing capacities of Ministry of Economic Investments and Development, Ministry of Agriculture, Ministry of Territorial development and Administration as well as respective Agency’s, municipalities, local government and communities. Armenia has a capacity for soil testing which is available through private and public laboratories. The farmers have access to soil testing (the basic testing can be done in Farm Service Centers supported by USG), and most of farmers are interested and doing such testing, thus the Implementing Partner will raise the awareness on the need.

2.4 Climate Change Vulnerability Analysis and Climate Risk Screening

This analysis sought to identify whether and how the Project will affect, or be affected by, medium and longer-term climate change impacts, and how the Project’s design should be adjusted in consideration of climate change vulnerabilities. In Armenia, the projected increase in temperature and decrease in precipitation, along with the projected increase in the frequency and intensity of natural disasters, will impact the agriculture sector by causing erosion, desertification, and a general degradation of agricultural land; reducing the availability of water; and causing severe damage to crops from high winds, floods, droughts, and other severe weather.

These implications are significant because agriculture is arguably the most economically important sector in Armenia. Some of the resulting recommendations include the following measures:
- Reducing land erosion and increasing soil fertility by planting of windbreaks to reduce erosion; keeping weeds under control and removing stones in pasture; and planting new seed types in degraded areas.
- Using gypsum in alkali soils and chemical fertilizers (i.e., nitrogen, sulfur, phosphorus, etc.) in saline soils.
- Increasing efficiency and effectiveness of irrigation (if applicable to the project) by using micro-irrigation technologies, such as sprinklers and drip irrigation; using techniques to conserve soil moisture, such as mulching and conservation tillage; investing in drought-tolerant crops; and growing less water-intensive crops.
- General policies: promoting crop, income and landscape diversification to reduce the impact of climate change; and increasing water storage to address shortages during droughts or summer months.

3. Analysis of Potential Environmental Impact

Pursuant to 22 CFR 216.3(a)92)(iii), the originator of the proposed project has reviewed the potential environmental impacts of the action summarized in the foregoing IEE. As per section 1.3 Program Description of this document, different type of Technical Assistance will be provided under Component 1 and 2 of the RED-NEO, the types of TA’s are specified in the below table under activities 1.1 to 1.8. Other activities defined in the table fall under the small grant component. Most of the activities outlined below (Technical Assistance under component 1 and 2, as well as capital support to be provided through Small Grant Component) are not going to have adverse impact but the
small grants to be provided in frame of this activity to the businesses are anticipated to have some negative effect.

Component 1: Rural Incomes through Agricultural and Other Production Increased and Diversified.
<table>
<thead>
<tr>
<th>Defined/Illustrative Activities</th>
<th>Potential Impacts</th>
<th>Potential Climate Risk</th>
<th>Climate Risk Rating</th>
<th>Opportunities for Climate Resiliency</th>
</tr>
</thead>
</table>
| 1.1 Train producers and MSMEs on: business management and operation practices and skills; O&M of equipment and facilities | No adverse impacts are likely | The projected increase in temperature and decrease in precipitation, along with the projected increase in the frequency and intensity of natural disasters, will impact the agriculture sector by causing erosion, desertification, and a general degradation of agricultural land; reducing the availability of water; and causing severe damage to crops from high winds, floods, droughts, and other severe weather. | Low | - Encourage farmers to take advantage of changes in temperature or precipitation that will extend the growing season and allow for additional harvests.  
- Increase training and investment in more sustainable agricultural practices.  
- Encourage adoption of innovations in food processing, packaging, transport, and storage. |
<p>| 1.2 Train service and information providers on topics such as teaching methods, farmer outreach models, and technical skills and knowledge. | Technical support for certain agricultural activities can have potential impacts on land, water, air, human health | Same as above | Low | Same as above |
| 1.3 Provide technical training to farmers on production, harvesting and post-harvest techniques and practices | Technical support for certain agricultural activities can have potential impacts on land, water, | Same as above | Low | Same as above |</p>
<table>
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<th>Defined/Illustrative Activities</th>
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<tbody>
<tr>
<td>1.4 Assist with developing business relationships and addressing requirements of financial institutions to obtain capital for further growth or expansion</td>
<td>No adverse impacts are likely</td>
<td>Same as above</td>
<td>Low</td>
<td>Same as above</td>
</tr>
<tr>
<td>1.5 Facilitate relationships between value-adding agribusinesses and smallholder/ emerging commercial farmers</td>
<td>No adverse impacts are likely</td>
<td>Same as above</td>
<td>Low</td>
<td>Same as above</td>
</tr>
<tr>
<td>1.6 Facilitate market access to new domestic buyers and international markets</td>
<td>No adverse impacts are likely</td>
<td>Same as above</td>
<td>Low</td>
<td>Same as above</td>
</tr>
<tr>
<td>1.7 Support farming and business/sector associations and cooperatives to develop marketing and branding campaigns</td>
<td>No adverse impacts are likely</td>
<td>Same as above</td>
<td>Low</td>
<td>Same as above</td>
</tr>
<tr>
<td>1.8 Facilitate linkages between and provide support to vocational education institutions, business service providers, and enterprises to improve training curricula and increase access to private sector-led skills development</td>
<td>No adverse impacts are likely</td>
<td>Same as above</td>
<td>Low</td>
<td>Same as above</td>
</tr>
<tr>
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<td>opportunities</td>
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| 2) Support in establishing new or improving the existing fruit/berry orchards (planting materials saplings, seedlings, drip irrigation system) (Small Grants Component) | Impact air, water, land, human health | The projected increase in temperature and decrease in precipitation, along with the projected increase in the frequency and intensity of natural disasters, will impact the agriculture sector by causing erosion, desertification, and a general degradation of agricultural land; reducing the availability of water; and causing severe damage to crops from high winds, floods, droughts, and other severe weather. | Low                 | - Encourage farmers to take advantage of changes in temperature or precipitation that will extend the growing season and allow for additional harvests.  
- Increase training and investment in more sustainable agricultural practices.  
- Encourage adoption of innovations in food processing, packaging, transport, and storage. |
| 3) Support in establishing modern greenhouses (saplings, ventilation, heating, etc.) (Small Grants Component) | Impact air, water, land, human health | Same as above                                                                                                                                                                                                            | Low                 | Same as above                                                                                                                                                                                                          |
| 4) Early warning services to farmers regarding irrigation, pests and disease management (Component 1) | No adverse impacts are likely        | Same as above                                                                                                                                                                                                            | Low                 | Same as above                                                                                                                                                                                                          |
| 5) Ag light machinery repair (Small Grants Component)                                            | Impact air, water, land, human health | Same as above                                                                                                                                                                                                            | Low                 | Same as above                                                                                                                                                                                                          |
| 6) Upgrade of production/processing facilities, including hospitality/F&B (equipment)           | Impact air, water, land, human health | Same as above                                                                                                                                                                                                            | Low                 | Same as above                                                                                                                                                                                                          |
### Defined/Illustrative Activities

<table>
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<tr>
<td>etc.) (Small Grants Component)</td>
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### 4. Recommended Environmental Actions

#### 4.1 Recommended Mitigation Measures for the TA and Small Grants

<table>
<thead>
<tr>
<th>Defined/Illustrative Activities</th>
<th>Potential Impacts</th>
<th>Mitigation Measures</th>
<th>Recommended Threshold Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 Train service and information providers on topics such as teaching methods, farmer outreach models, and technical skills and knowledge 1.3 Provide technical training to farmers on production, harvesting and post-harvest techniques and practices</td>
<td>Technical assistance to rural businesses will be provided in order to identify value-added opportunities and translate them into sustainable economic activities, as well as outreach models. Assistance will be focused on increasing the volumes and quality produced and per unit values of the targeted high-value crops, working with processors to identify and develop new products and locate new markets for all targeted crops and products. Technical support for certain agricultural activities can have potential impacts on land, water, air and human health.</td>
<td>USAID will ensure that the implementing partner follows the PERSUAP when discussing pesticides. The PERSUAP will be updated under the technical assistance activity and required to be updated every two years. Under the PERSUAP requirement the IPM training will be provided to encourage more sustainable pest management practices.</td>
<td>Negative Determination</td>
</tr>
<tr>
<td>2) Support in establishing new or improving the existing fruit/berry orchards (sapling materials, seedlings, drip irrigation system)</td>
<td>The small grants that have support in establishing new or improving the existing fruit/berry orchards (planting materials saplings, seedlings, drip irrigation system) physical infrastructure component may cause environmental and health problems if not properly implemented. Source material selection will be done in accordance to best available practice. Waste from the activity may contaminate surface and ground water if not properly managed. If use of pest will not be properly managed it will damage crops, environment and human health.</td>
<td>USAID will ensure the implementing partner prepares and submits for USAID approval the attached ERC with appropriate EMMPs. The ERC/EMMP will be completed and approved within approval process, prior to activities beginning. The implementing partner can also use the appropriate EMMP that have been developed and are attached in Annex 3 for applicable activities. Also, USAID will ensure that the implementing partner follows the PERSUAP when grant include use of pesticides. The PERSUAP is required to be updated every two years. PERSUAP related training will be provided to all beneficiaries. In particular, the EMMP will address all specific mitigation measures including, but not limited to: fugitive dust; erosion control; use water sprays; reduce diesel exhaust; keep equipment in good operating condition; workers protective gloves; proper storage of construction materials to reduce visual impacts; waste removal to designated landfill. The implementer will provide training on the PERSUAP. All procured materials and other equipment must be environmentally friendly and meet host government standards.</td>
<td>Negative Determination</td>
</tr>
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</table>
3) **Support in establishing modern greenhouses (saplings, ventilation, heating, etc.)**

| The small grants that have support in establishing greenhouses component will need to incorporate appropriate environmental (including PERSUAP), health and safety measures, use of environmentally friendly materials, waste disposal and source material selection (based on best available and should consider energy efficiency measures).
| No lead containing paints; proper disposal of waste in the designated areas; mitigation measures to be envisaged during construction. |
| **USAID will ensure the implementing partner prepares and submits for USAID approval the attached ERC with appropriate EMMPs. The ERC/EMMP will be completed and approved within approval process, prior to activities beginning. The implementing partner can also use the appropriate EMMP that have been developed and are attached in Annex 3 for applicable activities.** Also, USAID will ensure that the implementing partner follows the PERSUAP when grant include use of pesticides. The PERSUAP is required to be updated every two years. PERSUAP related training will be provided to all beneficiaries. In particular, the EMMP will address all specific mitigation measures including, but not limited to: fugitive dust; use water sprays; reduce diesel exhaust; keep equipment in good operating condition; workers protective gloves; proper storage of construction materials to reduce visual impacts; waste removal to designated landfill. The implementer will provide training on the PERSUAP. All procured materials and other equipment must be environmentally friendly and meet host government standards. |

| Negative Determination |
The small grants that have agricultural machinery repair stations support component will need to incorporate appropriate environmental (including PERSUAP) health and safety measures, waste disposal and source material selection (based on best available and should consider energy efficiency measures). Waste from the activity (spill of fuel, oil, lubricants etc.) may contaminate surface and ground water if not properly managed. No lead containing paints are allowed for used.

USAID will ensure the implementing partner prepares and submits for USAID approval the attached ERC with appropriate EMMPs. The ERC/EMMP will be completed and approved within approval process, prior to activities beginning. The implementing partner can also use the appropriate EMMP that have been developed and are attached in Annex 3 for applicable activities. Also, USAID will ensure that the implementing partner follows the PERSUAP when grant include use of pesticides. The PERSUAP is required to be updated every two years. PERSUAP related training will be provided to all beneficiaries.

In particular, the EMMP will address all specific mitigation measures including, but not limited to: avoiding sites with rare or endangered species; avoid locations in undeveloped forest areas, or adjacent to waterways; provide workers with protective equipment (e.g., gloves, steel-toed boots, goggles, dust masks); manage traffic to protect children & the community; use of controls & flags to avoid conflicts with other vehicles (the repair work should include spill prevention such as drip pans under an oil drain or practices that will prevent spill to the environment of oil, grease, solvents, antifreeze, Freon etc). All procured materials and other equipment must be environmentally friendly and meet host government standards.

| 5) Agricultural light machinery repair (no new construction, only upgrade of existing facilities) | USAID will ensure the implementing partner prepares and submits for USAID approval the attached ERC with appropriate EMMPs. The ERC/EMMP will be completed and approved within approval process, prior to activities beginning. The implementing partner can also use the appropriate EMMP that have been developed and are attached in Annex 3 for applicable activities. Also, USAID will ensure that the implementing partner follows the PERSUAP when grant include use of pesticides. The PERSUAP is required to be updated every two years. PERSUAP related training will be provided to all beneficiaries. In particular, the EMMP will address all specific mitigation measures including, but not limited to: avoiding sites with rare or endangered species; avoid locations in undeveloped forest areas, or adjacent to waterways; provide workers with protective equipment (e.g., gloves, steel-toed boots, goggles, dust masks); manage traffic to protect children & the community; use of controls & flags to avoid conflicts with other vehicles (the repair work should include spill prevention such as drip pans under an oil drain or practices that will prevent spill to the environment of oil, grease, solvents, antifreeze, Freon etc). All procured materials and other equipment must be environmentally friendly and meet host government standards. | Negative Determination |
| 6) Upgrade of production/processing facilities, including F&B (equipment, furniture etc.) | The small grants that have upgrade of production/processing facilities, including F&B (equipment, furniture etc.) component will need to incorporate appropriate environmental (including PERSUAP) health and safety measures, waste disposal and source material selection (based on best available and should consider energy efficiency measures). Waste from the activity may contaminate surface and ground water if not properly managed. Only environmentally friendly material and equipment could be used. No lead containing paints are allowed for used. | USAID will ensure the implementing partner prepares and submits for USAID approval the attached ERC with appropriate EMMPs. The ERC/EMMP will be completed and approved within approval process, prior to activities beginning. The implementing partner can also use the appropriate EMMP that have been developed and are attached in Annex 3 for applicable activities. Also, USAID will ensure that the implementing partner follows the PERSUAP when grant include use of pesticides. The PERSUAP is required to be updated every two years. PERSUAP related training will be provided to all beneficiaries. In particular, the EMMP will address all specific mitigation measures including, but not limited to: fugitive dust; use water sprays; reduce diesel exhaust; keep equipment in good operating condition; workers protective gloves; proper storage of construction materials to reduce visual impacts; waste removal to designated landfill. The implementer will provide training on the PERSUAP. All procured materials and other equipment must be environmentally friendly and meet host government standards. | Negative Determination |
4.2 Recommended Environmental Determination:

**Categorical Exclusions:**
A categorical exclusion is recommended for the following identified activities under 22 CFR 216.2(c)(2):
- Activity 1.1, 1.4, 1.5, 1.6, 1.7, 1.8 and 4 under §216.2(c)(2)(i) Education, technical assistance, or training programs except to the extent such programs include activities directly affecting the environment (such as construction of facilities, etc.);

**Negative Determination:** A negative determination with conditions is recommended for activities under small grants, per §216.3(a)(2)(iii). Specific terms and conditions are presented below in Section

4.3 Terms and Conditions:

4.3.1 For activities 1.2 and 1.3 the IP shall ensure that activities promote good agricultural practices in primary production, and cleaner production, energy efficiency and a culture of environmental compliance and governance in agricultural processing. The procurement or use, promotion of, or training in use of pesticides, is not permitted until such time that a Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) is completed pursuant to 22 CFR Regulation 216.3 (b) - USAID Pesticide Procedures - and duly approved. The PERSUAP is required to be updated every two years.

4.3.2 For activities 2, 3 and 5 the IP shall ensure that activities promote good agricultural practices including climate-resilient agriculture in primary production, and cleaner production, energy efficiency and a culture of environmental compliance and governance in agricultural processing - as relevant. For these activities, generally appropriate EMMPs have been developed and are attached in Annex -3. Prior to any new activities at a specific site, the attached EMMPs shall be reviewed by the Implementing Partner (IP) for suitability, adequacy, and comprehensive inclusion of necessary environmental, health and safety safeguards. When necessary, a revised ERC/EMMP shall be sent to the Contract Officer’s Representative (COR)/Agreement Officer’s Representative (AOR), prior to the start of work. For each site-specific activity, the EMMP attached to this IEE, or (the revised version, if appropriate) shall be attached to the signed Certification of No Adverse or Significant Effects on the Environment (See ERC/EMMP Annex 1) and sent by the implementer to the COR/AOR for his or her records and copied to the Mission Environmental Officer (MEO) and Europe and Eurasia Bureau Environmental Officer (BEO). After the IP has finalized its activities at a specific site, the IP shall sign a Record of Compliance with the EMMP (see ERC/EMMP Annex 2) certifying that the organization met all applicable EMMP conditions and submit it to the COR/AOR. The COR/AOR shall keep the original for the project files and provide a copy to the MEO and BEO. If the EMMPs of Annex 3 are not applicable, then USAID will ensure the implementing partner prepares and submits for USAID’s approval the attached ERC with appropriate EMMPs. The ERC/EMMP will be completed and approved within approval process, prior to activities beginning.

4.3.3 For activity 6, the IP shall ensure that activities promote good agricultural practices including climate-resilient agriculture. Prior to any physical interventions at a specific site, the approved EMMPs shall be reviewed and updated as needed for site specific conditions by the IP for suitability, adequacy, and comprehensive inclusion of necessary environmental, health and safety safeguards. For each site-specific physical intervention, the EMMP (the original or revised) shall be attached to the signed Certification of No Adverse or Significant Effects on the Environment and sent by the IP to the COR for records and copied to the Bureau Environmental Officer (BEO).
4.3.4 For other activities that do not fit under the approved EMMPs in Annex 3, Prior to initiating activities that have the potential to result in significant adverse environmental, health, and safety impact, the IP shall prepare an ERC/EMMP(s) in the format provided in the Annex 1 of this IEE. The COR/AOR, MEO, and BEO shall approve the ERC/EMMP(s) prior to implementation. For each site-specific activity, the ERC/EMMP shall be attached to the signed Certification of No Adverse or Significant Effects on the Environment (See ERC/EMMP Annex 1). This should be signed by the IP, COR/AOR, MEO, and BEO. After the IP has finalized its activities at a specific site, the IP shall sign a Record of Compliance with the ERC/EMMP (see ERC/EMMP Annex 2) certifying that the organization met all applicable ERC/EMMP conditions and submit it to the COR/AOR. The COR/AOR shall keep the original for the project files and provide a copy to the MEO and BEO.

4.3.5 ERC/EMMPs shall be captured in annual work plans, and therefor budgeted for and reviewed for adequacy at least annually.

4.3.6 Changes in activities, and their associate ERC/EMMPs, shall necessitate amending the IEE or issuing a Memo to the File (depending on extent and potential impact of the changes).

4.4 USAID Monitoring and Reporting

4.4.1 The AOR/COR, with the support of the MEO, is responsible for monitoring compliance of activities by means of desktop reviews and site visits.

4.4.2 If at any time the project is found to be out of compliance with the IEE, the AOR/COR or MEO shall immediately notify the BEO.

4.4.3 A summary report of Mission’s compliance relative to this IEE shall be sent to the BEO on an annual basis, normally in connection with preparation of the Mission’s annual environmental compliance report required under ADS 203.3.8.5 and 204.3.3.

4.4.4 The BEO or his/her designated representative may conduct site visits or request additional information for compliance monitoring purposes to ensure compliance with this IEE, as necessary.

4.5 Implementing Partner (IP) Monitoring and reporting

4.5.1 The originator of the proposed project has reviewed the potential environmental impacts of the action summarized in the foregoing IEE.

4.5.2 IPs shall report on environmental compliance requirements as part of their routine project reporting to USAID.

5. Mandatory Inclusion of Requirements in Solicitations, Awards, Budgets and Workplans

5.1 Appropriate environmental compliance language, including limitations defined in Section 6, shall be incorporated into solicitations and awards for this activity and projects budgets shall provide for adequate funding and human resources to comply with requirements of this IEE.

5.2 Solicitations shall include Statements of Work with task(s) for meeting environmental compliance requirements and appropriate evaluation criteria.

5.3 Environmental mitigation and monitoring requirements, when available, shall also be included in solicitations and awards.

5.4 The IP shall incorporate conditions set forth in this IEE into their annual work plans.
5.5 The IP shall ensure annual work plans do not prescribe activities that are defined as limitations, as defined in Section 6.

5.6 The USAID Mission will include an indicator for environmental compliance as part of the project’s performance monitoring plan.

6. Limitations of the IEE: This IEE does not cover activities (and therefore should changes in scope implicate any of the issues/activities listed below, a BEO-approved amendment shall be required), that:

6.1 Normally have a significant effect on the environment under §216.2(d)(1) [See http://www.usaid.gov/our_work/environment/compliance/regulations.html]

6.2 Support project preparation, project feasibility studies, engineering design for activities listed in §216.2(d)(1);

6.3 Affect endangered species;

6.4 Result in wetland or biodiversity degradation or loss;

6.5 Support extractive industries (e.g. mining and quarrying);

6.6 Promote timber harvesting;

6.7 Provide support for regulatory permitting;

6.8 Result in privatization of industrial or infrastructure facilities;

6.9 Lead to new construction of buildings or other structures;

6.10 Assist the procurement (including payment in kind, donations, guarantees of credit) or use (including handling, transport, fuel for transport, storage, mixing, loading, application, cleanup of spray equipment, and disposal) of pesticides or activities involving procurement, transport, use, storage, or disposal of toxic materials and /or pesticides (cover all insecticides, fungicides, rodenticides, etc. covered under the Federal Insecticide, Fungicide, and Rodenticide Act); and

6.11 Procure or use genetically modified organisms.

7. Revisions

Under §216.3(a)(9), if new information becomes available that indicates that activities covered by the IEE might be considered major and their effect significant, or if additional activities are proposed that might be considered major and their adverse effect significant, this environmental threshold decision will be reviewed and, if necessary, revised by the Mission with concurrence by the BEO. It is the responsibility of the USAID COR/AOR to keep the MEO and BEO informed of any new information or changes in the activity that might require revision of this IEE.

8. Recommended Environmental Threshold Decision Clearances:
Approval:
Deborah Grieser, Mission Director  
Signature: ___________________________  
Date: 4/17/18

Clearance:
Rabab Shamayleh, Deputy Mission Environmental Officer  
Signature: ___________________________  
Date: 04/16/2018

Clearance:
Simon Sargsyan, AOR, SDO  
Signature: ___________________________  
Date: 04/06/2018

Concurrence:
Mark Kamiya, E&E Bureau Environmental Officer  
Signature: ___________________________  
Date: 04/27/2018

Distribution:
IEE File  
MEO (to also provide a copy to AOR/COR)
Annex A. Climate Risk Screening and Management Tool for Activity/Project/Strategy Design

<table>
<thead>
<tr>
<th>1.1: Defined or Anticipated Tasks or Interventions*</th>
<th>1.2: Timeframe</th>
<th>1.3: Geography</th>
<th>2: Climate Risks*</th>
<th>3: Adaptive Capacity</th>
<th>4: Climate Risk Rating* [Enter rating for each risk: High, Moderate, or Low]</th>
<th>5: Opportunities*</th>
<th>6.1: Climate Risk Management Options</th>
<th>6.2: How Climate Risks Are Addressed in the Activity*</th>
<th>7: Next Steps for Activity Implementation</th>
<th>8: Accepted Climate Risks*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Train producers and MSMEs on: business management and operation practices and skills; O&amp;M of equipment and facilities</td>
<td>Next 0-5 years</td>
<td>The projects will be implemented in 10 marzes (regions) of Armenia</td>
<td>In coming 30 years: The average annual air temperature throughout the country will increase by up to 1.5°C, the number of summer days (above 25°C) will increase. The number of frost days is decreasing throughout Armenia. The annual number of hot days will increase. It is the climate is changing in the way that it have low level effect on professionals to be trained. The training services will be provided inside the buildings.</td>
<td>Low</td>
<td>Encourage farmers to take advantage of changes in temperature or precipitation that will extend the growing season and allow for additional harvests. Increase training and investment in more sustainable agricultural practices, such as water conservation, prevention of soil erosion, increased use of natural soil</td>
<td>Choose training venues that would be less impacted by inclement weather and to check the local weather conditions before the training dates to plan for bad weather and a back-up plan.</td>
<td>The Activity works with the Ministry of Agriculture to disseminate information about best techniques for integrated pest management.</td>
<td>N/A</td>
<td>None</td>
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<tr>
<td>business relationships and addressing requirements of fin institutions to obtain capital for growth/expansion</td>
<td>projected the overall precipitation will decrease, however, extreme weather events or heavy rain will increase.</td>
<td>amendments such as compost and manure. Encourage adoption of innovations in food processing, packaging, transport, and storage.</td>
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<td>1.5 Facilitate relationships between value-adding agribusinesses and smallholder/emerging commercial farmers</td>
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<td>1.6 Facilitate market access to new domestic buyers and international markets</td>
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<td>1.7 Support farming and business/sector associations and coops to develop marketing and branding campaigns</td>
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<td>1.8 Facilitate linkages between and provide support to vocational education institutions,</td>
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<td>Business service providers, and enterprises to improve training curricula and increase access to private sector-led skills development opportunities</td>
<td>2) Support in establishing new or improving the existing fruit/berry orchards</td>
<td>Next 0-5 years</td>
<td>The projects will be implemented in 10 marzes of Armenia</td>
<td>Same as above</td>
<td>The increased risk of natural disasters could require better developed evacuation plans.</td>
<td>Low</td>
<td>Same as above</td>
<td>N/A</td>
<td>Same as above</td>
<td>N/A</td>
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<td>3) Support in establishing modern greenhouses</td>
<td>Next 0-5 years</td>
<td>The projects will be implemented in 10 marzes of Armenia</td>
<td>Same as above</td>
<td>Higher temperatures may increase a need for air conditioning of services; and an increased risk of natural disasters could require better</td>
<td>Low</td>
<td>Same as above</td>
<td>N/A</td>
<td>Same as above</td>
<td>N/A</td>
<td>None</td>
</tr>
<tr>
<td>4) Early warning services to farmers regarding irrigation, pests and disease management (Component 1)</td>
<td>Next 0-5 years</td>
<td>The projects will be implemented in 10 marzes of Armenia</td>
<td>Same as above</td>
<td>Higher temperatures may increase a need for air conditioning; and an increased risk of natural disasters could require better developed evacuation plans.</td>
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<tr>
<td>5) Ag light machinery repair</td>
<td>Next 0-5 years</td>
<td>The projects will be implemented in 10 marzes of Armenia</td>
<td>Same as above</td>
<td>The increased risk of natural disasters could require better developed evacuation plans.</td>
<td>Low</td>
<td>Same as above</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>None</td>
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<tr>
<td>6) Upgrade of production/processing facilities, including F&amp;B</td>
<td>Next 0-5 years</td>
<td>The projects will be implemented in 10 marzes of Armenia</td>
<td>Same as above</td>
<td>Higher temperatures may increase a need for air conditioning of</td>
<td>Low</td>
<td>Same as above</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>None</td>
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</tbody>
</table>
services; and an increased risk of natural disasters could require better developed evacuation plans.
ENVIRONMENTAL REVIEW CHECKLIST (ERC) for Identifying Potential Environmental Impacts of Project Activities and Processes/ ENVIRONMENTAL MITIGATION AND MONITORING PLAN (EMMP) ERC/EMMP

for [Activity Name]

Implemented under: [Project Name]

DCN: [of Parent IEE]

Prepared by: [Implementer]
ENVIRONMENTAL REVIEW CHECKLIST FOR IDENTIFYING POTENTIAL ENVIRONMENTAL IMPACTS OF PROJECT ACTIVITIES AND PROCESSES

The Environmental Review Checklist for Identifying Potential Environmental Impacts of Project Activities and Processes (ERC) and Environmental Mitigation and Monitoring Plan (EMMP) is intended for use by implementing partners to: assess activity-specific baseline conditions, including applicable environmental requirements; identify potential adverse environmental effects associated with planned activity(s) and processes; and develop EMMPs that can effectively avoid or adequately minimize the identified effects. This ERC/EMMP may be substituted for other ERC/EMMP versions that may have been attached to previous initial environmental examinations (IEE). If implementing partners are in doubt about whether a planned activity requires preparation of an ERC, they should contact their Contracting Officer’s Representative (COR)/Agreement Officer’s Representative (AOR) for clarification. In turn, the COR/AOR should contact their Mission Environmental Officer (MEO) if they have any questions. In special circumstances and with approval of the BEO it is possible to have one very comprehensive ERC/EMMP for multiple projects if they are similar in scope. (When preparing the ERC/EMMP, please indicate “not applicable” for items that have no bearing on the activity. The ERC/EMMP should be completed by an environmental specialist. The ERC/EMMP must be completed and approved prior to the activity beginning.)

A. Activity and Site Information

<table>
<thead>
<tr>
<th>Project Name: (as stated in the triggering IEE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission/Country:</td>
</tr>
<tr>
<td>DCN of Most Recent Triggering IEE or Amendment:</td>
</tr>
<tr>
<td>Activity/Site Name:</td>
</tr>
<tr>
<td>Type of Activity:</td>
</tr>
<tr>
<td>Name of Reviewer and Summary of Professional Qualifications:</td>
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<tr>
<td>Date of Review:</td>
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</tbody>
</table>

B. Activity Description

1. Activity purpose and need
2. Amount of activity
3. Location of activity
4. Beneficiaries, e.g., size of community, number of school children, etc.
5. Number of employees and annual revenue, if this is a business
6. Implementation timeframe and schedule
7. Detailed description of activity, items that will be purchased (This section should fully describe what funds are being used for.)
8. Detailed description of site, e.g., size of the facility or hectares of land; steps that will be taken to accomplish the activity;
9. Existing or planned certifications, e.g., ISO 14001 EMS, ISO 9000, HCCP, SA 8000, Global Gap, Environmental Product Declarations, Eco Flower, EcoLogo, Cradle to Cradle, UL Environment, GREENGUARD, Fair Trade, Green Seal, LEED, or various Forest Certifications
10. Site map, e.g., provide an image from Google Earth of the location
11. Photos of site, items to be purchased, engineering construction plans (when available)
C. Activity-Specific Baseline Environmental Conditions
   1. Population characteristics
   2. Geography
   3. Natural resources, e.g., nearby forest/protected areas, ground and surface water resources
   4. Current land use and owner of land
   5. Proximity to public facilities, e.g. schools, hospitals, etc.
   6. Other relevant description of current environmental conditions in proximity to the activity

D. Legal, Regulatory, and Permitting Requirements
   1. National environmental impact assessment requirements for this activity
   2. Applicable National or local permits for this activity, responsible party, and schedule for obtaining them:

<table>
<thead>
<tr>
<th>Permit Type</th>
<th>Responsible party</th>
<th>Schedule</th>
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<tbody>
<tr>
<td>Zoning</td>
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<tr>
<td>Building/Construction</td>
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<tr>
<td>Source Material Extraction</td>
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<td>Waste Disposal</td>
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<td>Wastewater</td>
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<td>Storm Water Management</td>
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<td>Air Quality</td>
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<td>Water Use</td>
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<tr>
<td>Historical or Cultural Preservation</td>
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<tr>
<td>Wetlands or Water bodies</td>
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<tr>
<td>Threatened or Endangered Species</td>
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<tr>
<td>Other</td>
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</table>

   3. Additional National, European Union, or other international environmental laws, conventions, standards with which the activity might be required to comply
      a. Air emission standards
      b. Water discharge standards
      c. Solid waste disposal or storage regulations
      d. Hazardous waste storage and disposal
      e. Historical or cultural preservation
      f. Other

E. Engineering Safety and Integrity (for Sections E. and F., provide a discussion for any of the listed issues that are yes answers and likely to have a bearing on this activity)
   1. Will the activity be required to adhere to formal engineering designs/plans? Have these been or will they be developed by a qualified engineer? If yes, attach the plans to the ERC/EMMP.
   2. Do designs/plans effectively and comprehensively address:
      a. Management of storm water runoff and its effects?
      b. Reuse, recycling, and disposal of construction debris and by-products?
      c. Energy efficiency and/or preference for renewable energy sources?
      d. Pollution prevention and cleaner production measures?
      e. Maximum reliance on green building or green land-use approaches?
      f. Emergency response planning?
      g. Mitigation or avoidance of occupational safety and health hazards?
      h. Environmental management of mobilization and de-mobilization?
i. Capacity of the host country recipient organization to sustain the environmental management aspects of the activity after closure and handover?

3. Are there known geological hazards, e.g., faults, landslides, or unstable soil structure, which could affect the activity? If so, how will the project ensure structural integrity?

4. Will the site require grading, trenching, or excavation? Will the activity generate borrow pits? If so, how will these be managed during implementation and closure?

5. Will the activity cause interference with the current drainage systems or conditions? Will it increase the risk of flooding?

6. Will the activity interfere with above- or below-ground utility transmission lines, e.g., communications, water, sewer, or natural gas?

7. Will the activity potentially interfere with vehicle or pedestrian traffic?

8. Does the activity increase the risk of fire, explosion, or hazardous chemical releases?

9. Does the activity require disposal or retrofitting of polychlorinated biphenyl-containing equipment, e.g., transformers or fluorescent light ballasts?

F. Environment, Health, and Safety Consequences

1. Potential impacts to public health and well-being
   a. Will the activity require temporary or permanent property land taking?
   b. Will activities require temporary or permanent human resettlement?
   c. Will area residents and/or workers be exposed to pesticides, fertilizer, or other toxic substances, e.g., as a result of farming or manufacturing? If yes, then there should be an approved, current PERSUAP on file and discuss how it will be used in this situation. If so, how will the project:
      i. Ensure that these chemicals do not contaminate ground or surface water?
      ii. Ensure that workers use protective clothing and equipment to prevent exposure?
      iii. Control releases of these substances to air, water, and land?
      iv. Restrict access to the site to reduce the potential for human exposure?
   d. Will the activity generate pesticide, chemical, or industrial wastes? Could these wastes potentially contaminate soil, groundwater or surface water?
   e. Will chemical containers be stored at the site?
   f. Does the activity remove asbestos-containing materials or use of building materials that may contain asbestos, formaldehyde, or other toxic materials? Can the project certify that building materials are non-toxic? If so, how will these wastes be disposed of?
   g. Will the activity generate other solid or hazardous wastes such as construction debris, dry or wet cell batteries, fluorescent tubes, aerosol cans, paint, solvents, etc.? If so, how will this waste be disposed of?
   h. Will the activity generate nontoxic, nonhazardous solid wastes (subsequently requiring land resources for disposal)?
   i. Will the activity pose the need to handle and dispose of medical wastes? If so, describe measures of ensuring occupational and public health and safety, both onsite and offsite.
   j. Does the activity provide a new source of drinking water for a community? If so, how will the project monitor water quality in accordance with health standards?
   k. Will the activity potentially disturb soil contaminated with toxic or hazardous materials?
1. Will activities, e.g., construction, refurbishment, demolition, or blasting, result in increased noise or light pollution, which could adversely affect the natural or human environment?

2. Atmospheric and air quality impacts
   a. Will the activity result in increased emission of air pollutants from a vent or as fugitive releases, e.g., soot, sulfur dioxide, oxides of nitrogen, volatile organic compounds, methane?
   b. Will the activity involve burning of wood or biomass?
   c. Will the activity install, operate, maintain, or decommission systems containing ozone depleting substances, e.g., freon or other refrigerants?
   d. Will the activity generate an increase in carbon emissions?
   e. Will the activity increase odor and/or noise?

3. Water quality changes and impacts
   a. How far is the site located from the nearest river, stream, or lake? (Non-yes/no question)
   b. Will the activity disturb wetland, lacustrine, or riparian areas?
   c. What is the depth to groundwater at the site? (Non-yes/no question)
   d. Will the activity result in increased ground or surface water extraction? If so, what are the volumes? Permit requirements? (Non-yes/no question)
   e. Will the activity discharge domestic or industrial sewage to surface, ground water, or publicly-owned treatment facility?
   f. Does the activity result in increased volumes of storm water run-off and/or is there potential for discharges of potentially contaminated (including suspended solids) storm water?
   g. Will the activity result in the runoff of pesticides, fertilizers, or toxic chemicals into surface water or groundwater?
   h. Will the activity result in discharge of livestock wastes such as manure or blood into surface water?
   i. Does the site require excavation, placing of fill, or substrate removal (e.g., gravel) from a river, stream or lake?

4. Land use changes and impacts
   a. Will the activity convert fallow land to agricultural land?
   b. Will the activity convert forest land to agricultural land?
   c. Will the activity convert agricultural land to commercial, industrial, or residential uses?
   d. Will the activity require onsite storage of liquid fuels or hazardous materials in bulk quantities?
   e. Will the activity result in natural resource extraction, e.g., granite, limestone, coal, lignite, oil, or gas?
   f. Will the activity alter the viewshed of area residents or others?

5. Impacts to forestry, biodiversity, protected areas and endangered species
   a. Is the site located adjacent to a protected area, national park, nature preserve, or wildlife refuge?
   b. Is the site located in or near threatened or endangered (T&E) species habitat? Is there a plan for identifying T&E species during activity implementation? If T&E species are identified during implementation, is there a formal process for halting work, avoiding impacts, and notifying authorities?
   c. Is the site located in a migratory bird flight or other animal migratory pathway?
d. Will the activity involve harvesting of non-timber forest products, e.g., mushrooms, medicinal and aromatic plants (MAPs), herbs, or woody debris?
e. Will the activity involve tree removal or logging? If so, please describe.

6. Historic or cultural resources
   a. Are there cultural or historic sites located at or near the site? If so, what is the distance from these? What is the plan for avoiding disturbance or notifying authorities?
   b. Are there unique ethnic or traditional cultures or values present in the site? If so, what is the applicable preservation plan?

G. Further Analysis of Recommended Actions (Most activities will have a threshold determinations of negative determination with conditions.)

   □ 1. Categorical Exclusion: The activity is not likely to have an effect on the natural or physical environment. No further environmental review is required.* (This is rarely used in the ERC/EMMP.)
   □ 2. Negative Determination with Conditions: The activity does not have potentially significant adverse environmental, health, or safety effects, but may contribute to minor impacts that can be eliminated or adequately minimized by appropriate mitigation measures. ERC/EMMPs shall be developed, approved by the Mission Environmental Officer (MEO) and the BEO prior to beginning the activity, incorporated into workplans, and then implemented. For activities related to the procurement, use, or training related to pesticides, a PERSUAP will be prepared for BEO approval, PERSUAPS are considered amendments to the IEE and usually Negative Determination with Conditions. See Sections H and I below.*
   □ 3. Positive Determination: The activity has potentially significant adverse environmental effects and requires further analysis of alternatives, solicitation of stakeholder input, and incorporation of environmental considerations into activity design. A Scoping Statement (SS) must be prepared and be submitted to the BEO for approval. Following BEO approval of the SS an Environmental Assessment (EA) will be conducted. The activity may not be implemented until the BEO clears the final EA. If the Parent IEE does not have Positive Determination as one of the threshold determinations, the IEE needs to be amended.
   □ 4. Activity Cancellation: The activity poses significant and unmitigable adverse environmental effects. Adequate ERC/EMMPs cannot be developed to eliminate these effects and alternatives are not feasible. The project is not recommended for funding.

*Note regarding applicability related to Pesticides (216.2(e): The exemptions of §216.2(b)(l) and the categorical exclusions of §216.2(c)(2) such as technical assistance, education, and training are not applicable to assistance for the procurement or use of pesticides.

H. EMMPs (Using the format provided belowlst the processes that comprise the activity, then for each, identify impacts requiring further consideration, and for each impact describe the mitigation and monitoring measures that will be implemented to avoid or adequately minimize the impacts. All environment, health, and safety impacts requiring further consideration, which were identified in Section F., should be addressed)

1. Activity-specific environmental mitigation plan (Upon request, the MEO may be able to provide your project with example EMMPs that are specific to your activity.)

<table>
<thead>
<tr>
<th>Processes</th>
<th>Identified Environmental Impacts</th>
<th>Do the Impacts Require Further Consideration?</th>
<th>Mitigation Measures</th>
<th>Monitoring Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>List all the processes that</td>
<td>A single process may have several</td>
<td>For each impact, indicate Yes or No; if No, provide</td>
<td>For each impact requiring further consideration,</td>
<td>Specify indicators to (1) determine if</td>
</tr>
<tr>
<td>Processes</td>
<td>Identified Environmental Impacts</td>
<td>Do the Impacts Require Further Consideration?</td>
<td>Mitigation Measures</td>
<td>Monitoring Indicators</td>
</tr>
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</tr>
<tr>
<td>comprise the activity(s) (e.g. asbestos roof removal, installation of toilets, remove and replace flooring) A line should be included for each process.</td>
<td>potential impacts—provide a separate line for each.</td>
<td>justification, e.g.,: (1) There are no applicable legal requirements including permits or reporting and (2) There is no relevant community concern and (3) Pollution prevention is not feasible or practical and (4) Does not pose a risk because of low severity, frequency, or duration</td>
<td>describe the mitigation measures that will avoid or adequately minimize the impact. (If mitigation measures are well-specified in the IEE, quote directly from IEE.)</td>
<td>mitigation is in place and (2) successful. For example, visual inspections for seepage around pit latrine; sedimentation at stream crossings, etc.)</td>
</tr>
</tbody>
</table>

2. Activity-specific monitoring plan

<table>
<thead>
<tr>
<th>Monitoring Indicators</th>
<th>Monitoring and Reporting Frequency</th>
<th>Responsible Parties</th>
<th>Records Generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify indicators to (1) determine if mitigation is in place and (2) successful (for example, visual inspections for seepage around pit latrine; sedimentation at stream crossings, etc.) (Taken from column 5 of the environmental mitigation plan above.)</td>
<td>For example: “Monitor weekly, and report in quarterly reports. If XXX occurs, immediately inform USAID COR/AOR.”</td>
<td>Separate parties responsible for mitigation from those responsible for reporting, whenever appropriate,</td>
<td>If appropriate, describe types of records generated by the mitigation, monitoring, and reporting process.</td>
</tr>
</tbody>
</table>
ERC/EMMP ANNEX 1
Certification of No Adverse or Significant Effects on the Environment

I, the undersigned, certify that activity-specific baseline conditions and applicable environmental requirements have been properly assessed; environment, health, and safety impacts requiring further consideration have been comprehensively identified; and that adverse impacts will be effectively avoided or sufficiently minimized by proper implementation of the EMMP(s) in Section H. If new impacts requiring further consideration are identified or new mitigation measures are needed, I will be responsible for notifying the USAID COR/AOR, as soon as practicable. Upon completion of activities, I will submit a Record of Compliance with Activity-Specific EMMPs using the format provided in ERC Annex 2.

________________________________________________________________________
Implementer Project Director/COP Name                                      Date

Approvals:

________________________________________________________________________
USAID COR/AOR Name                                                        Date

________________________________________________________________________
Mission Environmental Officer Name                                        Date

Concurrence:

________________________________________________________________________
Mark Kamiya, Bureau Environmental Officer                                 Date

Distribution:
• Project Files
• IEE Files
The [name of the implementing organization] has finalized its activities at the [site name] to [describe activities and processes that were undertaken]. This memorandum is to certify that our organization has met all conditions of the EMMPs for this activity. A summary and photo evidence of the how mitigation and monitoring requirements were met is provided below.

1. Mobilization and Site Preparation

2. Activity Implementation Phase

3. Site Closure Phase

4. Activity Handover

Sincerely,

____________________________________________________________________________

Implementer Project Director/COP Name                  Date

Approved:

____________________________________________________________________________

____________________________________________________________________________
USAID/COR/AOR/Activity Manager Name Date

Distribution:
- Project Files
- MEO
- Bureau Environmental Officer
### Annex 3: EMMP. Environmental Mitigation and Monitoring Plan for activities under Small Grants Component

(Select appropriate activity type)

No construction activities will take place, EMMPs for such activities are relevant for any TA related to construction and rehabilitation.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Identified Environmental Impacts</th>
<th>Mitigation Measure(s)</th>
<th>Monitoring Indicator(s)</th>
<th>Monitoring and Reporting Frequency</th>
<th>Responsible Party(ies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Equipment procurement</td>
<td>Equipment can have potential impacts on land, water, air and human health, such as: - High energy consumption - Sewer Discharge effluent - Polluted drain water - Fryer --exhaust air pollutants, etc. - Noise, Odor &amp; Visual Quality Impacts</td>
<td>Equipment procurement plans include environmental considerations. Proper equipment and appropriate technology should be used to minimize the environmental impact such as: - Energy/Water/thermal efficient and cost effective food processing equipment including homogenizers, evaporators, heat exchangers, stainless steel tanks and refrigerators with less Global Warming Potential (GWP) and Ozone Depletion Potential (ODP) etc. - Sound enclosures &amp; noise barriers, equipment with low noise ratings - Pollution Control Applications: Heat Exchanger, Oil Mist Eliminator, Drain Water Cleanup and Starch Recovery Systems, Heat Recovery, Oil/Water Separator etc. - Develop plans &amp; specifications that address resource depletion reduction for retrofits and document why selected equipment chosen over reasonable alternatives in context of efficiency - Installation of procured equipment to be conducted by an authorized company</td>
<td>Documented procurement plan as part of application and grant agreement (if awarded). Equipment selection criteria include the environmental aspects Resource depletion reduction plans &amp; specifications to justify why selected equipment chosen over reasonable alternatives in context of efficiency.</td>
<td>During the application review and full proposal design process, before the grant awarding</td>
<td>IP is responsible for monitoring and reporting. Grant applicant is responsible for implementation of mitigation measures</td>
</tr>
<tr>
<td>1.2 Identification of equipment suppliers</td>
<td>Supplied equipment can have potential impacts on land, water, air and human health</td>
<td>- Select the suppliers with proven experiences to provide high-quality environmentally sound service - Select the equipment with minimal impact on environment</td>
<td>- Evaluate the experience/reputation of suppliers; - Review the technical characteristics of suggested by suppliers equipment - Documented procurement plan Before equipment suppliers are chosen by grant applicant</td>
<td></td>
<td>IP Financial manager, environmental specialist, IP technical evaluation committee. Grant applicant is responsible for implementation of mitigation measures</td>
</tr>
<tr>
<td>1.3 Selection of site</td>
<td>Inadequately selected site can cause negative impacts: - Ground water quality - Surface water quality - Geological structural instability</td>
<td>Avoid siting in areas with shallow groundwater table or porous soils. - Avoid siting outside of an area that has known flooding potential. Locate more than 30 meters from a water body to minimize risk of contaminated storm water. - Avoid areas prone to landslide or in known fault areas</td>
<td>Documented site visit memo of Initial Environmental screening / Environmental Due Diligence Report documenting any potential environmental concerns: - Visual inspection of site and its</td>
<td>During the application eligibility revision process (Initial Environmental Reporting)</td>
<td>IP Environmental Specialist, field coordinators, M&amp;E specialist, IP technical evaluation</td>
</tr>
</tbody>
</table>

*EE.BEU Standard Form: ERC.v2 (Effective date June 1, 2016)*
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1.4 Site cleaning and preparation</td>
<td>- Site clearance waste</td>
<td>Design and Implement mobilization plans that optimize avoidance of environmental impact</td>
<td>Conformance with mobilization plan</td>
<td>At the start of the activity and at least monthly thereafter</td>
<td>IP Environmental Specialist, field coordinators, M&amp;E specialist and Grant applicant is responsible for implementation of mitigation measures</td>
</tr>
<tr>
<td></td>
<td>- Dust emissions</td>
<td>- Use designated landfill site for material disposal</td>
<td>- Shipping manifests, landfill</td>
<td></td>
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<td></td>
<td>- Temporary drainage impairment</td>
<td>- Implement measures to minimize drainage impacts</td>
<td>- Receipts, photo logs</td>
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<td></td>
<td>- Noise and traffic nuisance</td>
<td>- Clearly delineate boundaries and minimize staging area footprints</td>
<td>- Number of documented actions</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>- Soil compaction and contamination</td>
<td>- Minimize disturbance of native flora during construction.</td>
<td>- Placement of signs and perimeter markings</td>
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<td></td>
<td>- Vegetation loss</td>
<td>- Minimize the amount of clearing. Clear small areas for active work one at a time</td>
<td>- Vegetation surveys</td>
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<tr>
<td></td>
<td></td>
<td>- Where possible, remove large plants and turf without destroying them, and preserve them for replanting in temporary nurseries</td>
<td>- Visual inspection of site</td>
<td></td>
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<td></td>
<td></td>
<td>- Move earth and remove vegetation only during dry periods. Store topsoil for re-spreading. If vegetation must be removed during wet periods, disturb ground only just before actual construction</td>
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<td></td>
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<td>- Install temporary erosion control features when permanent ones will be delayed. Use erosion control measures such as hay bales, berms, straw or fabric barriers</td>
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<td></td>
<td></td>
<td>- Re-vegetate with recovered plants and other appropriate local flora immediately</td>
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<tr>
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</table>
| 1.5 Design and planning of construction/rehabilitation                 | Construction/rehabilitation can have potential impacts on land, water, air and human health                                                                                                                                                                                                                                                                                                   | Construction and/or rehabilitation plans include environmental considerations including:  
- Develop a documented waste management plan  
- Develop a documented safety plan and apply only environmentally safe construction materials (no asbestos).  
- Design building includes installation of water, heating, ventilation, sewage system, and restrooms  
- Separate machinery from spare parts room and install steel doors, shelves, iron tables  
- Post appropriate warning signage  
- Develop worker safety training manual  
- Best management practices (BMP) for controlling erosion and storm water impacts should be respected; In case of any sign of risk of erosion and storm water impacts the respective BPM should be designed into the project  
- Plan to construct water diversions, concrete laneways to prevent runoff from entering both surface and groundwater and to minimize the volume of effluent  
- Plan for installing rainwater collection system around the farm store building | Documented design plan reflected in ERC (Environmental Review Checklist) and enclosed to Grant agreement, including: waste management plan, safety plan storm water BMPs etc. | During the full proposal development process, before grant approval | IP Environmental Specialist, field coordinators, M&E specialist, IP technical evaluation committee. Grant applicant is responsible for implementation of mitigation measures |
| 1.6 Small-scale on farm production efficiency improvements (e.g. hull net, mulch, farm equipment) | On-farm equipment and new production methods may have a potential impacts on land, water, and human health                                                                                                                                                                                                                                                                                                                            | - Apply, as relevant, mitigation measures related to equipment procurement  
- Promote, as relevant, good agricultural practices including climate-resilient agriculture in primary production such as soil testing to determine appropriate fertilization needs; good fertilizer application practices to avoid surface and ground water pollution; avoid working wet soil to avoid soil compaction; apply soil conservation measures (such as crop rotation, cover crops, conservation tillage, planted windbreaks) to prevent soil loss from erosion or reduced fertility due to over usage or salinization;  
- Apply environmental mitigation and monitoring measures for safe use of pesticides described in the approved PERSUAP  
- Any wastes generated on site shall be transferred to an authorized landfill  
- Apply health and safety measures, as relevant, including staff training on safe use of materials/equipment/method; presence of first aid kit etc. | - | |
### 1.7 Small-scale processing and production efficiency improvements in processing and packing facilities (e.g., sorting line, packing line, drying kiln)

<table>
<thead>
<tr>
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</tr>
</thead>
</table>
| 1.7      | Operation and Maintenance of equipment in food processing/packing facilities may have potential impacts on land, water, air and human health | - Day- to- day maintenance and repair activities to keep equipment safe and reliable  
- Establish and maintain and effective waste management, disposal, and waste reduction system.  
**a) Soil and water pollution prevention**  
- Ensure adequate storage of damaged fruits and their safe reutilization or transportation  
- Ensure existence of wastewater treatment as needed:  
  - Septic Tanks: Use for wastewater with low BOD loading & domestic sewage Include maintenance/cleaning & install drain fields  
  - Select appropriate storage tank or water treatment based on anticipated operations and resultant run-off varieties.  
- Ensure that wash water does not flow into area surface water  
  - For higher strength BOD wastewaters (e.g., peppers, potatoes, dairies), install treatment for BOD  
  - Install equalization for periodic cleanup waste, oil removal for greases & edible oils, & treatment for special wastes  
- Ensure existence of drainage area with non-porous surface, at slight gradient toward drain to minimize risk of run-off and soil/groundwater contamination  
  - Ensure onsite storage tank to store rinse water until such time the municipal collectors can remove ‘skim’ and/or apply necessary treatment and water is OK for discharge into local sewage system or area surface water bodies  
  - Implement water conservation & re-use measures whenever appropriate  
  - When refueling and/or equipment maintenance will be conducted on-site, ensure that any on-site repairs are conducted in designated area with non-porous surface from which rinse water and spilled fuels/oils can access drainage area described above-  
**b) Air pollution prevention**  
- Use environmentally acceptable fuels for dryers & heating equipment Replace fuels with high greenhouse gas emissions (e.g., coal) with clean fuels like natural gas if possible  
- Use efficient low emission production equipment with high energy efficient ratings & use low emission burners in boilers  
- Limit use of hot water, reduce energy demand of lighting & | - Documented waste management plan  
- Visual inspections of sites/operation and storage areas.  
- Quality of wastewater (Oil & Grease, Chemical and biological parameters).  
- Review of types of waste (solid, liquid) and waste quantity  
- Existence of separate containers for solid, liquid and hazardous waste  
- Availability of waste disposal service company and/or recyclers;  
- Complaints from nearby residents  
- On-site energy and water use documented measures taken to minimize noise, water, air, land pollution  
- Concentration of relevant pollutants in waste water (mg/m3)  
- Quantity of wastewater (m3)  
- Water meter installed;  
- Documented plans & specifications that address resource depletion reduction for retrofits  
- Inspection of collected natural agricultural products  
- Number of public meetings  
- Permits  
- Certifications | At project initiation, at least quarterly during operation. | IP Environmental Specialist, field coordinators, M&E specialist.  
Grant applicant is responsible for implementation of mitigation measures |
<table>
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<tr>
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</table>
| c) Noise, Odor prevention. | - Use sound enclosures & noise barriers, equipment with low noise ratings  
- Provide ventilation to reduce smoke, vapor & odor in the workplace | | | | |
| d) Ensure resource efficiency | - Perform regular maintenance to optimize performance on heating, cooling, & lighting systems to maximize efficiency  
- Limit water use when washing food product and rinsing equipment; utilize dry cleaning of equipment whenever possible  
- Limit water use when washing food product and rinsing equipment; utilize dry cleaning of equipment whenever possible  
- Optimize process line operations to avoid spills of raw materials and water, reducing the need to wastewater treatment and associated energy consumption | | | | |
| e) Minimize impact to sensitive ecologies | - Trainings on protection of endangered species, native plants & wildlife (i.e. during collection of Medicinal or Aromatic Products (MAPs), berries & mushrooms)  
- Seek organic certifications for production of agricultural products where possible  
- Training on organic certification standards and/or Global GAP certification standards for agriculture production and processing | | | | |
| f) Impact on human health | - (REFER TO STANDARD MEASURES UNDER WORKER HEALTH AND SAFETY) | | | | |
| 1.8 Procurement and upgrading of cold storages and/or equipment related to cold storage | Cold storages may have potential impacts on land, water, air and human health  
- Soil, Surface and ground Water  
- Air Pollution Impacts  
- Noise, Odor & Visual Quality Impacts  
- Non efficient Use of Energy and Water | - Day- to- day maintenance and repair activities to keep equipment safe and reliable  
- Establish and maintain and effective waste management, disposal, and waste reduction system.  
- Proper application of cold storage technologies, implement good management practices  
- Ensure adequate storage of damaged fruits and their safe reutilization or transportation | - Visual inspections of sites/operation and storage areas.  
- Review of types of waste (solid, liquid) and waste quantity  
- Existence of separate containers for solid, liquid and hazardous waste  
- Availability of waste disposal | At project initiation, at least quarterly during operation. | IP Environmental Specialist, field coordinators, M&E specialist, Grant applicant is responsible for implementation of mitigation measures |
<table>
<thead>
<tr>
<th>Activity</th>
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</tr>
</thead>
</table>
| e.       | Resources                        | - Use environmentally acceptable fuels for dryers & heating equipment. Replace fuels with high greenhouse gas emissions (e.g., coal) with clean fuels like natural gas if possible  
- Use Freon R404A as refrigerant or other environment friendly and freon-free options  
- Use efficient low emission production equipment with high energy efficient ratings  
- Limit use of hot water, reduce energy demand of lighting & production equipment | - Complaints from nearby residents  
- On-site energy and water use documented measures taken to minimize noise, water, air, land pollution  
- Inspection of collected natural agricultural products  
- Permits  
- Certifications | | | |
| c) Noise, Odor prevention. | - During operations, the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible  
- Use sound enclosures & noise barriers, equipment with low noise ratings  
- Provide ventilation to reduce smoke, vapor & odor in the workplace  
- Tightly close doors of the facility | | | | |
| d) Ensure resource efficiency | - Perform regular maintenance to optimize performance on heating, cooling, & lighting systems to maximize efficiency  
- Limit water use when washing food product and rinsing equipment; utilize dry cleaning of equipment whenever possible  
- Limit water use when washing food product and rinsing equipment; utilize dry cleaning of equipment whenever possible  
- Optimize process line operations to avoid spills of raw materials and water, reducing the need to wastewater treatment and associated energy consumption  
- Select appropriate insulation panels and doors in order to decrease heat penetration in the cold room. | | | | |
| e) Worker Safety Measures | - Conduct regular instructing of personnel on health and occupational safety requirements  
- An Emergency Preparedness Plan (EPP) for Refrigerant/Freon Management should be displayed in a proper place and the staff must be trained in handling of refrigerants leakage should it occur  
- Installation of the forced air cooling equipment is conducted | | | | |

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<table>
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<tr>
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</tr>
</thead>
</table>
| 1.9 Procurement and use of equipment for a laboratory for agriculture | Use of laboratory equipment may have potential impacts on land, water, air and human health a. Soil, Surface and ground Water b. Air Pollution Impacts c. Noise, Odor & Visual Quality Impacts d. Non efficient Use of Energy and Water Resources e. Impacts on Human Health | - Implementation of Good Laboratory Practices (GLP), including biosafety and biosecurity practices  
- Day- to- day maintenance and repair activities to keep equipment safe and reliable  
- Establish and maintain and effective waste management, disposal system  
**a) Soil and water pollution prevention**  
- Temporarily store on site all hazardous or toxic substances in safe containers labeled with details of composition, properties and handling information  
- The containers of hazardous substances should be placed in an leak-proof container to prevent spillage and leaching  
- The wastes are to be transported by specially licensed carriers and disposed in a licensed facility, on authorized special toxic wastes disposal sites  
- Use alternatives to reagents with harmful ingredients where it is feasible  
- Avoid larger test kits with more packaging as such kits use more refrigerator and storage space, and therefore have greater energy requirements.  
**b) Air pollution prevention**  
- Use efficient low emission production equipment with high energy efficient ratings  
- Limit use of hot water, reduce energy demand of lighting & production equipment  
**c) Noise, Odor prevention.**  
- Provide ventilation to reduce smoke, vapor & odor in the workplace  
**d) Ensure resource efficiency**  
- Perform regular maintenance to optimize performance on heating, cooling, & lighting systems to maximize efficiency  
- Conduct daily “end of day” laboratory and office | - Documentation of laboratory procedures and staff training on safe handling of materials, as well as their storage, treatment and disposal, good hygiene, use of proper protective clothing, proper packaging and labeling, and appropriate courses of action for spills, injury and exposure.  
- Certifications e.g. ISO 9000 and ISO17025 | At project initiation, at least quarterly during operation. | IP Environmental Specialist, field coordinators, M&E specialist. Grant applicant is responsible for implementation of mitigation measures

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| 1.10 Worker Health and Safety | Potential impacts on human health, environment and natural resources; Certain working conditions – excessive heat caused by operating machinery, lack of ventilation, skin-irritating acids from fruits – can damage workers’ health. An unhealthy workforce may be unproductive, miss work too often and make costly mistakes. | **Worker Safety Measures**  
- Installation of procured equipment to be conducted by an authorized company  
- Ensure workers have access to all necessary PPE for working with on-site equipment and/or handling products  
- Ensure workers are complying with training procedures  
- Ensure workers are complying with guidance of training on proper use of on-site equipment  
- Establish and maintain documented safety procedures and ensure workers/equipment users understand and follow safety instructions supplied on equipment labels and or described in appropriate guidelines/protocols  
- Establish and maintain worker safety training programs,  
- All users of the machinery/equipment/operation system been given adequate training in safe operation, correct use, risks and precautions  
- Design the Equipment Safety checklist for high hazard apparatus to be completed regularly by responsible parties/users  
- Schedule regular machine maintenance checks and repairs  
- Make available where necessary medical and chemical protection and first aid kits.  
- Establish and maintain a fire control system and firefighting equipment.  
- Control access to Operational and maintenance areas and clearly display signs to enhance avoidance of hazards.  
- Ensure properly storage and handle of chemicals used for preservation, depending on the methodology for its application in the processing.  
- Design facilities to ensure adequate ventilation for the potential heating and other smoke, vapor or odor sources |  
- Number of trained workers,  
- Knowledge/skills of workers,  
- Documented safety regulations and operational guidelines  
- Documented Equipment Safety checklist  
- Documented waste management plan  
- Number of conducted trainings  
- Inspection of protective equipment available,  
- Inspection of medical, chemical protection and first aid kits  
- Inspection of fire protection equipment.  
- Inspection of ventilation system  
- Number of accidents and injuries (workers, visitors)  
- Existence of precaution signs and control system to access equipment./operation maintenance and storage area  
- Interviewing of workers | At project initiation, at least quarterly during operation. Periodic site visits for verification | IP Environmental Specialist, field coordinators, M&E specialist. Grant applicant is responsible for implementation of mitigation measures |
| 1.11 Pesticides and synthetic chemicals safety | Potential impacts on human health, environment and natural resources | - Conduct “Agricultural pesticides” training topic based on PERSUAP  
- Provide employees with information about exposure to pesticides, personal protective equipment, and ways to mitigate exposure to pesticides  
- Frequent registrations pesticide for greenhouse crops  
- Prohibit workers and other persons from entering the entire enclosed area until the restricted entry interval (REI) expires  
- Minimize exposure during mixing, application, and cleanup operations  
- Use protective equipment  
- Adequately ventilate the greenhouse before allowing workers to enter  
- If the pesticide is applied as a fumigant, smoke, mist, fog, aerosol, or requires the applicator to wear a respirator, then specific ventilation requirements apply | - Number of PERSUAP trained workers |

At project initiation. Periodic site visits for verification  
IP Environmental Specialist, field coordinators, M&E specialist. Grant applicant is responsible for implementation of mitigation measures