E2276

GEORGIA

RURAL DEVELOPMENT PROJECT

Environmental Guidelines

September 2009

ABBREVIATIONS AND ACRONYMS

ADPCC	Agricultural Development Projects Coordination Center
RDP	Rural Development Project
ASME	American Standards (Mechanical Engineering)
Audit	EIA at an existing site prior to expansion/change of use
BOD	Biological Oxygen Demand (liquid effluent)
COD	Chemical Oxygen Demand (liquid effluent)
dB	Decibels (noise level)
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan: mitigation and monitoring of potential environmental issues
NBFIs	Non-Banking Financial Institutions
PCBs	Participating Commercial Banks
PFIs	Participating Financial Institutions
pH	Acidy/Alkalinity: pH 7.0 is neutral
PMU	Project Management Unit
SS or SP	Suspended solids in air: Suspended Particulates (dust) in air
TS	Total Solids in a liquid effluent (dissolved and suspended)
WB (or The Bank)	World Bank

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Introduction

1.1 The Project

Limited access to credit is a major impediment to the growth of commercial agriculture in Georgia. Bank and non-bank financial institutions have a limited presence in rural areas in the region, and a weak capacity for agricultural lending. Agro-processors and agri-business enterprises thus lack the means to modernize their plant, improve product quality, and finance the acquisition of raw materials. Similarly, small-scale producers lack the means to increase input use and invest in new production technology as the basis for increasing production and marketed surplus.

The Agricultural Development Project (RDP) aims to improve and develop the production, harvesting, storage, processing and marketing of agricultural commodities through four project components: (i) Agricultural Supply Chain Development Component; (ii) Rural Finance Services; (iii) Institutional Modernization, and (iv) Project Management.

To overcome existing constraints, the project will establish a wholesale finance facility to provide credit lines to bank and non-bank financial institution for on-lending for investment and working capital. This would include credit lines for commercial banks to finance larger loans to processors, traders, producer associations and cooperatives for working capital and investment; and credit lines to micro-credit organizations to finance investment and working capital for small-scale producers. Agricultural supply chain development will support the efficient development of marketing and supply chains for commodities that have a demonstrated market potential, with the view to expand profitable domestic and export market opportunities, through: (i) supply chain analysis and development; (ii) linkages to farm communities; and (iii) technology transfer including the provision of competitive grants through the Competitive Grant Program which will provide small grants to formal or informal farmer groups based on agreed eligibility criteria.

1.2 Potential Environmental Issues

Environmental and safeguard issues are foreseen with respect to the investments in small and medium agro-processing enterprises and public sector infrastructure (such as feeder roads, storage facilities, collection points, and wholesale markets) likely to be financed under the project through credit lines from commercial banks and through the Competitve Grants Program (CGP). No environmental Category A sub-projects financed under the RDP.Some sub-projects would be Environmental Category B and others Category C. No projects requiring the acquisition of land will be financed.

Agro-processors would have potential environmental impacts from solid and liquid waste emissions, smoke, airborne particles and gaseous discharges, transport and machinery noise. These would need to be mitigated to National Standards and the Bank regulations by incorporating the necessary controls and treatment systems in the design and, during procurement, by specifying equipment and processes that meet these standards. Processors would also need to incorporate National safety measures

for personnel in the vicinity of operating machinery. Among other things, CGP beneficiaries may use grant proceeds for procuring and applying fertilizers and pesticides, irrational and unsafe use of which carries risks to the human and environmental health. These risks will be mitigated by implementation of the Pest Management Plan (PMP), which provides the guiding principles on how to ensure rationale and safe handling and application of pesticides to be purchased under the project. It is expected that the grant scheme component of the project, while providing resources to improve primary agricultural production towards its better integration into the market chain, will improve farmers' access to various inputs, including pesticides. Financing procurement and application of pesticides is an eligible expenditure under the project, though it triggers the World Bank operational Policy 4.09 *Pest Management*, which calls for ensuring that pesticide use does no harm to human and environmental health. Towards this end, it is essential that:

- farmers make well informed and scientifically grounded decisions on the application of pesticides,
- the principles of Integrated Pest Management are extended to project beneficiaries and are complied with to the extent possible; and
- pesticides are handled in full compliance with the national legislation, and in conformity with the key principles of good international practice.

1.3 Responsibility

Sub-projects and sub-grants financed through the credit lines and CGP must be in compliance with the environmental laws and regulations of Georgia and with World Bank safeguard policies. Buildings, equipment and processes; production, storage and marketing technologies; production and processing materials; construction sites and factories, and working environments must all comply with the relevant environmental laws and with the WB's Pollution Prevention and Abatement Handbook (PPAH). Where specific requirements of national law and the PPAH differ, the more stringent requirements will be applied.

Environmental risk management of sub-loans should become a part of sub-loan and sub-grant appraisal by the participating financial intermediaries (PFIs, MFIs) and by the Agricultural Development Projects Coordination Center (ADPCC). Loan officers should be able to verify that sub-loan and micro-loan applications are in compliance with Georgian laws and regulations and with the WB Safeguard policies, and will not cause enduring harm to the Georgia's natural environment. Relevant staff of ADPCC should apply the same environmental due diligence to the CGP sub-grant proposals. ADPCC will carry overall responsibility for environmental compliance under all RDP components.

The proposals for investment in private-sector agri-business development under the project have the potential for environmental pollution, and systems need to be in place to ensure that all proposals adequately protect the environment. The Bank environmental guidelines require financial intermediaries to undertake environmental screening of sub-projects to determine:

a) the applicable EA category for the sub-project, based on the level and nature of potential environmental and social impacts and potential for mitigation; and

b) the type and scope of environmental assessment (EA) report required for any proposal that indicates more than minimal levels of risk.

The Bank's Operational Policy 4.01 (Annex E) provides criteria and guidance for project screening, including illustrative lists of types of projects which would typically fall under Category A, B or C. For Category B sub-projects, proponents will prepare an EIA or an EMP, which may be more or less comprehensive and detailed, depending on the details of the proposal (see Appendix 1). EIAs/EMPs will be reviewed by ADPCC and receive No Objection from the Bank prior to sub-project approval. Category C sub-projects will not require EIA or EMP.

For Category B subprojects, the PFI or MFI will review the EMP and determine, in consultation with ADPCC, whether public disclosure and/or consultation is required under national law and/or World Bank policies and, if so how it should be carried out. The ADPCC will consult with the Bank on public disclosure and consultation requirements and procedures, both in general and on a case by case basis.

It is envisaged that the PFI/MFI loan officer or the ADPCC Environmental Specialist (for Components A, B and C, respectively) will make decisions on environmental and safeguard compliance for the sub-projects which present straightforward environmental issues that can be identified and addressed through reference to these Environmental Guidelines, supported by training they will receive under the project. In the case of complex environmental issues that are beyond their experience, loan officers will receive support and assistance from the ADPCC Environmental Specialist and, where appropriate, from a specialized consultant engaged by ADPCC.

The ADPCC will play two different roles in project implementation: (i) for the credit lines for banks and microfinance institutions (MFIs) the ADPCC will provide support and oversight for the onlending PFIs and MFIs on all aspects of project administration, including environmental management; (ii) for the CGP under the Agricultural Supply Chain Development Component the ADPCC will be directly responsible for administration. For the CGP, the ADPCC's organizational functions include dissemination of information about the CGP, organization of training and information sessions with potential applicants, receiving and screening the applications and administering the financial management of the grant project. In this capacity the ADPCC will have a National Supply Chain Coordinator (NSCC), who will serve as one-person secretariat for CGP. In addition, Regional Supply Chain Coordinators (RSCC) will be responsible for information dissemination and monitoring and evaluation of the grants project. The grants will be critically reviewed by technical reviewers for selection. The final decision on selection of grants will rest on the Grant Committee.

1.4 Objective of Guidelines

The objective of these Guidelines is to provide a framework for determining to what extent various project activities will affect the environment, and to ensure that sub-loan and sub-grant applicants have incorporated all necessary measures to keep their proposed sub-project compliant with Bank safeguard policies and the Georgian environmental law.

Background

2.1 World Bank Safeguard Policies

The World Bank's commitments to environmental and social protection are reflected in its ten safeguard policies outlined in the below table. Each Bank-supported project is assessed to identify which of these safeguards must be triggered and complied with. RDP triggers OP/BP 4.01 Environmental Assessment and OP4.09 Pest Management.

Safeguard Policies	
Policy	**Summary of Core Requirements**
OP/BP 4.01 Environmental Assessment	Screen early for potential impacts and select appropriate instrument to assess, minimize, and mitigate potentially adverse impacts
OP/BP 4.04 Natural Habitats	Do not finance projects that degrade or convert critical habitats. Support projects that affect non-critical habitats only if no alternatives are available and if acceptable mitigation measures are in place
OP 4.09 Pest Management	Support integrated approaches to pest management. Identify pesticides that may be financed under the project and develop appropriate pest management plan to address risks.
OP/BP 4.10 Indigenous Peoples	Screen to determine presence of indigenous peoples in project area. Policy triggered whether potential impacts are positive or negative. Design mitigation measure and benefits that reflect indigenous people's cultural preferences.
OP/BP 4.11 Physical Cultural Resources	Investigate and inventory cultural resources potentially affected. Include mitigation measures when there are adverse impacts on physical cultural resources.
OP/BP 4.12 Involuntary Resettlement	Assist displaced persons in their effort to improve or at least restore their standards of living. Avoid resettlement where feasible or minimize. Displaced persons should share in project benefits.
OP/BP 4.36 Forests	Support sustainable and conservation oriented forestry. Do not finance projects that involve significant conversion or degrading of critical forest areas.
OP/BP 4.37 Safety of Dams	For large dams, technical review and periodic safety inspections by independent dam safety professionals.
OP/BP 7.50 Projects on International Waterways	Ascertain whether riparian agreements are in place and ensure that riparian states are informed of and do not object to project interventions.

OP/BP 7.60 Projects in Disputed Areas	Ensure that claimants to disputed areas have no objection to proposed project.

2.2 Environmental Screening and Categorization

The Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of EA required. The Bank classifies the proposed project into one of three categories, depending on the type, location, sensitivity and scale of the project and the nature and magnitude of its potential environmental impacts. Category A projects require the preparation of a full scale, comprehensive Environmental Impact Assessment (EIA) including Environmental Management Plan (EMP). Category B projects require a more limited environmental assessment, and in some cases only the preparation of an EMP. Category C projects require no environmental assessment or environmental mitigation beyond (in some cases) adherence to basic good construction or operational practices.

A fourth Category FI (Financial Intermediary), is applied to projects that involve investment of Bank funds through a financial intermediary (FI) for carrying out sub-projects that may result in adverse environmental impacts. Georgia RDP has been classified as Environmental Category FI. In the case of Category FI projects, the PFIs are required to screen proposed sub-projects and identify the type of environmental assessment and/or EMP required, if any. It is important that the ADPCC and the PFIs are able to identify the World Bank Environmental Categories of activities for which funding is being requested. The environmental assessment and/or EMP will provide PFIs with the information needed to ensure that the sub-project meets the environmental requirements of national and local authorities and is consistent with the environmental Operational Policies (OP) of the Bank. PFIs may not initially have the technical capacity for environmental screening, but would be trained in environmental issues under the project, and would be assisted by ADCPP and may need to employ specialists for more complex environmental issues where required.

In principle, a Category FI project can include sub-projects which fall under Category A, B and/or C. However, the Georgia RDP will not finance any sub-projects which fall into Category A.

2.3 Georgian Environmental Laws and Regulations Applicable to the RDP

Georgian Constitution (article 27) stipulates that the citizens of Georgia have the right to a healthy environment. The laws regarding environmental protection reflect Georgia's position in this sphere, take into consideration requirements of international conventions and treaties, and cover the whole range of protective measures.

The Georgian policy in the area of environmental protection reflects the view that economic development policies should not have negative impact on the environment. Under RDP, therefore, ADPCC and PFIs will be required to ensure that sub-loan activities comply with all of the following laws.

Table-4: Georgia's environmental legislation
Georgian Law on "Environmental Protection" (1996)
Georgian Law on "Environmental Permits" (2007)
Georgian Law on "Water" (1997)
Georgian Law on "Ambient Air" (1997)
Georgian Law on "Forest Code of Georgia" (1999)
Georgian Law on "Soil Protection" (1994)
Georgian Law on "Subsoils" (1997)
Georgian Law on "State Ecological Expertise" (2007)
Georgian Law on "Soil" (1996)
Georgian Law on "Protection of Animals" (1996)
Georgian Law on "Systems of Protected Territories" (1996)
Georgian Law on "Hazardous Chemical Substances" (1998)
Georgian Law on "Georgian Red List and Red Book" (2003)
Georgian Law on "Levies on Use of Natural Resources (2004)
Georgian Law on "State Control of Environmental Protection" (2005)
Georgian Law on "Environmental Protection Service" (2007)
Georgian Law on "Status of Protected Territories" (2007)

The Ministry of Environment Protection and Natural Resources is the Georgian executive body responsible for elaboration and implementation of State policies regarding environmental protection.

Appendix 3 summarises environmental laws and regulations of Georgia applicable to RDP, detailing two most important ones (*Law of Georgia on the Environmental Permits –2007* and the *Law of Georgia on the State Ecological Expertise –2007*). The law of Georgia on Licensing and Permits defines types of all licences and permits to be issued by the State (*Law of Georgia on Licensing and Permits - 2005*). The law of Georgia on the Environmental Permits, adopted by the Parliament of Georgia in 2007, provides a list of all activities which require the State ecological expertise. It also formulates a mechanism of stakeholder participation in the environmental assessment (EA) process through mandatory disclosure of EA reports and public consultation on their findings.

Project Activities

3.1 Expected Sub-project Activities

It is not possible to determine with certainty, prior to project implementation, the various activities for which loan and grant funds will be requested. However, project preparation studies have examined current agricultural activities in the Project region and it is believed that, for the most part, loan funds will be used for the same types of activities. Georgia has a long tradition of wine production and, earlier, exported large volumes of fruit, vegetables and nuts. It also produces milk and milk products, tea, meat and meat products. Enhancements of production, processing and marketing of these traditional commodities are the most likely content of sub-projects.

While there is likely to be considerable overlap in the types of economic activities for which support is sought under each of the three funding sources, the enterprises supported by bank loans will generally be on large or medium scale (commercial/industrial) while those seeking microfinance loans will be on a small scale (household/artisanal). Bank loans are more likely to be used for durable equipment, infrastructure, etc., while microfinance loans are more likely to be used for agricultural inputs and other consumables, purchase of additional livestock, etc. Activities supported by grants under the CGP may fall under either category but are expected to be predominantly at a small scale.

Large and Medium-scale activities (Agro-processing and marketing)

Table 5 lists the types of activities most likely to be financed under bank loans. While none of these sub-projects would be at a level which would be considered large scale by international standards, under this credit line they would typically involve commercial scale production at a scale large enough to have significant environmental impacts if appropriate mitigation measures are not implemented.

Table-5: Probable medium/large scale sub-project activities
Wine industries :
- Grapevine nurseries
- Vineyards – new and rehab
- Wine making, bottling and storage
- Wine warehouses and marketing
Milk industries :
- Dairy farming
- Milk collection and chilling centres
- Milk processing and dairy plants
- Milk products : storage and marketing of cheese, ice-cream, deserts
Fruit industries (soft-fruits, citrus, apples, pears, etc)
- Fruit seedling nurseries
- Fruit orchards - new and rehab
- Fruit packing, cold storage and chilled transport
- Fruit processing and pickled products
- Fruit marketing activities
Nut industries (Hazelnuts, walnuts, etc)
- Nut tree seedling nurseries

- Nut tree orchards - new and rehab
- Nut packing, storage and transport
- Nut processing and pickled products
- Nut marketing activities
Meat industries :
- Livestock breeding and production
- Slaughterhouses and meat processing plants
- Cold storage facilities
Market facilities :
- Market buildings and auction rooms
- Warehousing, cold stores and distribution depots

Small-scale activities (Farming and farm services)

Table-6 provides a list of probable activities which are likely to be proposed for micro-credit financing. These are expected to be mainly agricultural and horticultural production activities, orchards and livestock, including inputs, and services to these activities. Consistent with the small amounts of money provided, the scale of the operations will be small, i.e. mainly at household/smallholder level rather than for commercial or industrial scale production, and the potential environmental impacts correspondingly minor. Therefore, only simple EMPs are likely to be required if at all. The need for quality seeds and seedlings and for reliable farm chemicals was highlighted during Project Preparation, and it is expected that this will represent a major use of the micro-credit loans. In most cases the small amount of agricultural chemicals to be purchased or used under these sub-projects will not justify the preparation of a Pest Management Plan (see below). Instead, the PIU will inform applicants which pesticides are eligible for financing and will provide them with information, advice and training on sustainable pest management and safe pesticide handling.

Table-6: Probable small-scale sub-project activities
Seeds and seedlings:
- Nurseries
- Seed breeding
- Seed and seedling production and propagation
- Seed and seedling processing, packing and marketing
Agriculture and horticulture:
- Rehab farms, orchards and horticulture
- Irrigation (mainly on-farm)
- Access roads
- Farm buildings and barns
- Production activities (working capital)
Service industries:
- Tractors, farm implements, spare parts, servicing and hardware
- Farm chemicals
- Fuel and lubricants
Livestock industries:
- Livestock breeding and pedigree production
- Veterinary and inspection services
- Feeds and medicines
- Small scale slaughter, butchery and meat processing
- Animal production

Guidelines for PFIS

4.1 Environmental Screening of Sub-Projects

The loan officer or the environmental specialist in the PFI will be required to screen each sub-project as part of sub-project preparation and appraisal. Guidance on environmental screening is available in Annex 4.2, which are applicable to all sub-loans issued by the Participating Commercial Banks (PCBs) and sub-loans over 15,000 USD issued by the Non-Banking Financial Institutions (NBFIs). The objective of environmental screening is to classify sub-projects into environmental categories and prescribe relevant level of environmental assessment and management planning to each sub-project. On completion of screening, the report is entered in the project files. A standard format of environmental screening report is provided in Annex 4.1.

Sub-projects assessed as Category A, (high environmental risks). No Category A sub-projects will be financed by the project.

Sub-projects assessed as Category B, (**lower environmental risks)** will require environmental assessment and development of an Environmental Management Plan (EMP).

Sub-projects assessed as Category C, (sub-projects having no environmental issues) require no action after their screening, but the completed environmental screening report must be entered in the project files.

If the sub-project is rejected on environmental grounds during screening, an improved environmental proposal may be submitted by the proponent, and re-considered as above. This decision is at the discretion of the PFI.

4.2 Environmental Monitoring

If the sub-project is accepted for funding and implementation under the project, following full appraisal by the PFI, environmental monitoring will be required in compliance with the EMP agreed in the screening procedure. The extent of project monitoring will be dependent on the nature, scale and potential impact of the sub-project.

4.3 Project Supervision (Environmental)

Likewise, the extent of Bank and PFI supervision will be dependent on the nature of a sub-project. Monitoring reports should be available before each supervision mission, and any anomalies or concerns investigated during supervision. The supervision missions should check the physical activities of the sub-project against the screening report and establish that mitigation and monitoring measures are functioning as designed, and are adequately controlling any pollutants or environmental issues within the law and regulations. In cases of unsatisfactory performance, an environmental audit and revised environmental management plan may be required.

4.4 Annual Environmental Reporting by the PFIs to the Bank

PFIs are required to submit annual reports on the environmental performance of the loans financed using WB funds. This should include a list of monitoring reports from sub-project borrowers, and a list of reports from the Ministry or its agents. Annual Environmental Reports are to be provided to the Bank before each project supervision mission, and the latest Report is to be included as an attachment to the PFIs' annual report to the Bank. The Banks reporting requirements for PFIs are detailed in Appendix 2, which includes the format for the annual report. This is a compilation of all sub-projects under the control of a PFI.

Annex 4.1 Template for Environmental Screening Reporting by PFIs

Environmental Screening Report

This report is to be kept short and concise. Yes/No answers and bullet lists preferred except where descriptive detail is essential.

Participant Bank or PFI: (Name)

Sub-project: (Name and location)

Sub-loan/Investment Title: (Sub-loan title or reference number)

Nature of Sub-loan (Purpose, loan size, percentage of total investment)

Physical data:

- Site area in ha (for industrial sites, or production area for farms, orchards etc.)
- Factory area in m^2 (in case of processing, storage, marketing etc.)
- Expansion of an existing site or acquisition of a new site for sub-project purposes.
- Acquisition of a new property planned under sub-project.
- New construction planned under sub-project.

Refer to loan application for this information.

Source of the Presented Information:

Indicate the date of a site visit

- State the source of information for this report (site visit, sub-project proponent's report, EIA, or other environmental study).
- Has there been litigation against or any complaints of environmental nature on the proponent or sub-project

Refer to your findings from a site visit, a loan application, and/or a local community leader for this information.

Identify type of sub-project activities and likely environmental impacts:

- List existing production, processing and storage or marketing activities.
- List planned incremental production, processing, storage or marketing activities under the sub-project.
    - Products
    - Production per year capacity
    - Employees (workers, staff, temporary workers)
- What are the likely environmental impacts of sub-project and the risks associated with its implementation?

Environmental Screening Category:

After compiling the above, read the Environmental Category guidelines and allocate the appropriate Environmental Screening Category to the sub-project.

Mitigation of Potential Pollution:

Does the sub-project have the potential to pollute the environment, or contravene any environmental laws and regulations? If so, then the proposal must detail the methodology and equipment incorporated in the design to constrain pollution within the laws and regulations. Does the design adequately detail mitigating measures?

Required Environmental Monitoring Plan:

If there are environmental issues identified that require long term or intermittent monitoring (effluent, gaseous discharges, water quality, soil quality, air quality, noise etc), does the proposal detail adequate monitoring requirements?

Public Participation/Information Requirements:

Does the proposal require the public to be informed, consulted, or involved? If so, has the disclosure/consultation been completed or does the proposal describe the process and time frame for any outstanding consultation process?

Permits/licenses required:

Does the sub-project implementation require any licenses and/or permits according to the Georgian legislation?

- No
- Yes (indicate which ones and provide status of their obtaining)

Environmental standards:

Does the sub-project require compliance with any national and/or World Bank environmental standards (water quality, permissible concentrations of pollutants in discharges/emissions, noise)

- No
- Yes (indicate which standards are applicable and provide status of clearing the compliance plan with the Ministry of Environment Protection and Natural Resources)[1]

[1] Responsibility for ensuring compliance with World Bank PPAH rests with ADPCC

Conclusion of the Environmental Screening:

- Sub-project is acceptable
- Sub-project is conditionally acceptable (indicate the conditions and agreed deadlines for their fulfilment)
- Sub-project is rejected (explain reasons).

A mandatory condition for accepting Category B sub-projects is submission of environmental management and monitoring plans.

LOAN OFFICER

***Name*:** _____

Signature: _____

Date: _____

Annex 4.2 Reference for Environmental Screening of Sub-Project Proposals (based on the Environmental Framework for RDP)

Category A

Projects falling under Category A have significant adverse health and environmental impacts that are diverse, irrevocable, and may affect areas broader than the sites or facilities of physical intervention of the considered activity. Examples include construction of dams and large reservoirs, industrial plants, mineral development, transport infrastructure, etc. Most projects of this type clearly fall outside the scope of RDP and would not be proposed or considered at all. Category A projects which could conceivably be proposed, and which would need to be identified by PFIs as ineligible for financing, could include: expansion or new development of agricultural production on a very large scale or affecting ecologically sensitive areas (e.g.with high biodiversity significance), new or expanded irrigation or drainage systems which would deplete or pollute limited or sensitive water sources, and agro-processing involving the use of particularly hazardous or toxic chemicals,

Category B

Category B projects have potential adverse health impacts and/or environmental impacts affecting quality of air, quality of surface or ground waters or , natural habitats (wetlands, forests, grasslands etc.)., but these impacts are site-specific and are reversible or manageable through recognized and readily available mitigation measures. .

For some (more complex) Category B projects, a site-specific environmental assessment (EA) may be needed to identify and evaluate the specific nature and significance of potential environmental impacts, together with an environmental management plan (EMP) describing measures to be taken to avoid, reduce or mitigate those impacts. In many cases, however, the potential impacts are easily identified and mitigated through standard measures (e.g. recognized technology; good construction practices) and an EMP alone is sufficient. Guidance for contents of stand-alone EMPs is provided in these Guidelines. Where an EA is required, the contents will be established through Terms of Reference which will be subject to prior review by the Bank. Where a sub-project will support an existing activity (e.g. replacing equipment or infrastructure for an existing agricultural or agro-processing enterprise) the EA/EMP should briefly describe environmentally significant aspects of the existing operation to the extent needed to demonstrate that it is acceptable, and beyond this should focus mainly the impacts of any (positive or negative) changes expected to result from the project funding.

Likely sub-projects which could be classified as Category B include:

Agriculture

- agriculture, horticulture, viticulture on an area of 50 hectares or over;
- construction and/or operation of irrigation schemes;
- intensive agricultural production (e.g. greenhouses) of 10 hectares or more;

- setting up mariculture and aquaculture farms;
- conversion of natural habitat to agricultural use;
- any project which would likely result in change in pattern of pesticide use on an area of 5 ha or more

Agroprocessing

- processing of foods, seeds, fibers (with capacity above 200 tons per year);
- breweries, non-alcoholic beverages, wine and spirits production (with production capacity above 5 million litters per year);
- canning (with processing capacity between 3000 and 5000 tons of raw material per year);
- agricultural produce and food storage facilities (commercial level)
- access roads or bridges;
- commercial poultry and livestock breeding farms beyond household level;
- dairy production;
- processing of animal remains;
- Leather production;
- slaughter-houses and meat packing plants;
- smoking or drying food products;
- sugar production;
- yeast production.

Category C

Category C projects have minimal or no adverse health and environmental impacts. This may be because of the nature of the activity or because it is implemented on a very small scale (although some types of activities fall under Category B regardless of scale). Beyond screening, no environmental work (assessment or monitoring) is required.

Category C subprojects likely to be proposed for RDP funding include:

Agriculture

- agriculture, horticulture, viticulture on the area below 50 hectares;
- intensive agriculture (e.g. greenhouses) below 10 hectares;
- improvement of on-farm irrigation networks under 50 hectares.

Agroprocessing

- processing of foods seeds, fibers (with capacity below 200 tons per year);
- breweries, non-alcoholic beverages, wine and spirits production (with production capacity below 5 million litters per year);
- poultry or livestock production at household level;
- canning (with processing capacity below 3000 tons of raw material per year);
- agricultural produce and food storage facilities (household level).

Additional Remarks

- The project does not support cultivation of tobacco and manufacturing of its products.

- The project proceeds may be used exclusively for the purchase and application of such pesticides which are formally allowed for use in Georgia[2] .

- Financing of any new construction as well as medium to large scale reconstruction of premises (buildings for production, processing, or storage) requires development and implementation of an Environmental Management Plan. For small scale reconstruction or rehabilitation the simple "Checklist EMP" developed by the World Bank can be used.

- The national legislation requires that all enterprises releasing waste water to the natural water bodies and releasing emissions to the atmosphere are formally registered with the Ministry of Environment Protection and Natural Resources[3] and have individual ceilings of permissible discharge/emissions approved by this Ministry[4].

[2] The list of eligible pesticides, complied by the National Service for Food Safety, Veterinary and Plant Protection, Ministry of Agriculture of Georgia, is provided in a periodical source book complied for five year periods. A list currently in force is approved by the Minister of Agriculture through "Approval of the State Source Book of the Pesticides Allowed For Use in 2005 - 2009" (Order No 2-148, dated July 11, 2005, as amended through Order No. 2-100, dated June 19, 2006).

[3] Department of Integrated Management of the Environment and Biodiversity, Ministry of Environment Protection and Natural Resources of Georgia

[4] Rules of calculating ceilings of permissible discharges are provided in the "Methodology for Calculation of Highest Permissible Content of Pollutants Discharged with Waste Water" approved by the Minister of Environment (Order No. 105, dated August 12, 1996).
Rules for calculating ceilings of permissible emissions are provided in the bi-law on "Regulations on Inventory of Point Sources of Ambient Air Pollution" approved by the Minister of Environment (order No. 704, dated October 20, 2008)

Pest Management Plan

5.1 Applicability of PMP to the Project Activities

The present Pest Management Plan (PMP) provides the guiding principles on how to ensure rationale and safe handling and application of pesticides. It is expected that the grant scheme component of the project, while providing resources to improve primary agricultural production towards its better integration into the market chain, will improve farmers' access to various inputs, including pesticides. Financing procurement and application of pesticides is an eligible expenditure under the project. In addition, some other types of project investments could lead to changes in pesticide use practices, including increased use of pesticides, or introduction of pesticide products or application methods which have not previously been used in a given area or by people who have not previously used them. Therefore the project triggers the World Bank operational Policy 4.09 *Pest Management*, which calls for ensuring that pesticide use does no harm to human and environmental health. Towards this end, it is essential that:

- farmers make well informed and scientifically grounded decisions on the application of pesticides,
- the principles of Integrated Pest Management are extended to project beneficiaries and are complied with to the extent possible; and
- pesticides are handled in full compliance with the national legislation, and in conformity with the key principles of good international practice.

This PMP carries a blueprint of action on how to ensure compliance of the project implementation with the OP 4.09, including description of the required mitigation measures for different circumstances and the respective roles and responsibilities of the ADPCC and the project beneficiaries. Three scenarios are envisaged:

(i) *sub-project beneficiaries do not use RDP funds to purchase pesticides, but for activities which are likely to result in increased use of pesticides or other changes in pesticide use practices*. In this case, the PFI will provide information and advice on IPM and safe pesticide handling (e.g. leaflet to be prepared under the project; for larger projects offer targeted training), If the sub-project falls under Category B and an EMP is required, the EMP should cover any pest/pesticide management issues (i.e., separate PMP not required).

(ii) *sub-project beneficiaries use RDP funds to purchase pesticides in very small) for use in an area below 1 ha.* In this case, the applicants will indicate which pesticide product(s) they intend to purchase and for what purpose (must be on the positive list provided below and legally registered for the crop/pest involved), and the PMU provides information and advice on IPM and safe pesticide handling (e.g. leaflets prepared under the project);

(iii) *sub-project beneficiaries use RDP funds to purchase pesticides for use on an area of 1 ha and above.* In this case, the applicants should prepare a sub-project-specific PMP as part of the loan or grant application, as outlined below, and PMU ensures that the PMP respects the positive list provided below, and incorporates IPM principles and safe pesticide handling practices.

5.2 Policy and Regulatory Framework

Over the last decade the main policy trend of the Government of Georgia in relation to pest and pesticide management has been eradication of illegal imports and trade of agrochemicals. During the post-Soviet crisis, when the former chains of agricultural input supply broke up, shadow market of pesticides emerged, providing considerable amounts of sub-standard, banned, and/or non-registered products. In 1998 the law on Pesticides and Agrochemicals was enacted. This legislation introduced the main principles of pest and pesticide management, which are currently in force.

The key approach to pesticide use is ensure efficiency and safety. The old practice, widely applied in collective farms of the USSR, was not sensitive to the amount and methodology of pesticide use, the overriding goal being maximization of yields at any cost, including compromised quality of produce and environmental sustainability. The present policy and legal framework have fundamentally different approach, which is selective and regulated use of pesticides based on the results of phytosanitary monitoring and real need assessment, as well as ensuring of health safety through correct storage and handling of pesticides and strict screening of produce for the residual contents of pesticides. Mitigating negative environmental impacts of pesticide use is also a part of the formal policy on pest and pesticide management.

The law on Pesticides and Agrochemicals introduced the State Registry of pesticides and agrochemicals allowed for use in the territory of Georgia. Such Registry is being periodically updated and endorsed by the Ministry of Agriculture of Georgia through a Ministerial order. Current list of the registered pesticides covers the period of 2009-2013.

Other laws, regulations, and the recommended good practice applicable to pest and pesticide management in Georgia include:
- International Code on Pesticide Dissemination and Use of UN Food and Agricultural Organization (FAO);
- Standards of European and Mediterranean Plant Protection Organization (EPPO);
- Law of Georgia on Plant Protection from Pests;
- Law of Georgia on Soil Protection;
- Law of Georgia on Health Protection;
- Law of Georgia on Nature Protection; and
- Law of Georgia on Agricultural Quarantine.

There are also several bi-laws and regulations enacted for facilitating enforcement of the law on the Use of Pesticide and Agrochemicals, which establish rules for packaging and labelling of pesticides, sample collection for monitoring quality of pesticides on sale and pesticide content in agricultural produce on sale, procedures for testing and registering new pesticides, etc.

The Ministry of Agriculture of Georgia is the State agency with a policy-making role in the field of pest and pesticide management. State control over the effective and safe use of pesticides is carried out by the Ministry of Agriculture, the Ministry of Environment Protection and Natural Resources, and the Ministry of and Social Protection within the respective spheres of their competence.

5.3 Integrated Pest Management

Integrated Pest Management (IPM) is a pest control strategy that uses a variety of complementary strategies including: mechanical devices, physical devices, genetic, biological, cultural management, and chemical management. While chemical management of pests used to be the main tool of pest control in Georgia for an extended period of time, some applied research on biological and mechanical measures of pest control was also being publicly financed in the Soviet times, and a limited amount of products for biological and mechanical management used to be produced.

During the post-Soviet crisis and afterwards, in the years of the developing market economy, there was next to no State funding available for the extension of IPM. Public awareness of IPM has been relatively little, resulting in low demand and subsequent absence of incentive for private providers. Therefore, dissemination of information on the principles of IPM and extension of its elements to the project beneficiaries is a challenging and important task of the ADPCC.

5.4 Pest Management Recommended by Crops

The main types of crops cultivated by potential beneficiaries of the project include hazelnuts, citrus, fruits, vine, and vegetables. Attachment 1 indicates the insecticides and herbicides recommended by the Ministry of Agriculture of Georgia for application to these crops and also serves as a “positive list” of products eligible to be purchased using project funds. Consistent with the Bank’s Operational Policy on Pest Management (OP 4.12) recommendations for projects involving pesticide use by non-professionals, none of the pesticides listed fall within Class 1A or 1B (the highest hazard categories) under the WHO classification of pesticides by hazard.

5.5 Pest and Pesticide Management under the Project

The ADPCC under the Ministry of Agriculture of Georgia will have a lead role in ensuring that pesticide use under the project financed activities is compliant with the main principles of IPM, the national legislation, and the international good practice. PFIs will be responsible for screening sub-project applications to identify those which include purchase of pesticides or support for activities which is likely to lead to increased pesticide use or other significant changes in pest management practices and to determine which will require preparation of PMPs or attention to pest and pesticide management issues within EMPs. PFIs' and ADPCC's other responsibilities include ensuring that only pesticide products on the "positive list" are financed with project funds, assisting applicants with the development of PMPs according to the template provided in Attachment 2 (below), capacity building for project beneficiaries (information dissemination and technical assistance) to help ensure safe pesticide use and to promote the incorporation of IPM into farming practices, and (together with PFIs) monitoring the implementation and impact of these all these measures as part of overall project M&E.

In the absence of a widespread, effective agricultural extension service, capacity building will include preparation and dissemination of a simple, reader-friendly flier containing practical advice on pesticide safety and on application of IPM in commonly grown crops and conditions for distribution to a wide range of project beneficiaries, working with project beneficiaries on preparation and implementation of EMPs and PMPs, Where needed, ADPCC will engage specialist consultants on a part time or short term basis to assist in these activities (budgetary provisions have been made for this support).

As noted above, sub-project specific Pest Management Plans will be prepared by applicants for sub-projects involving purchase of more than a minimal quantity of pesticides. The PMPs will specify the pesticides to be used and describe pest management practices to be used, with an emphasis on encourage growers to adopt key elements of IPM. In support of this objective, the template for sub-project specific PMPs calls for information on the crops and local conditions and on the rationale for using pesticides in general and for the specific pesticide products proposed. For example, applicants are asked to describe how they will assess phytosanitary condition in their fields/orchards and decide when to apply pesticides and whether they plan to use any external professional help in developing pesticide treatment schedules. In order to raise awareness and build knowledge about pesticide hazards and safe use requirements, PMPs will also include detailed information on what will be the physical form of the pesticides (liquid, granules, dust, etc.), what equipment/machinery will be used for their application, and where and how leftover pesticides and packaging materials will be stored, prepared, used (including use of protective clothing and other safety equipment as needed) and disposed of.

5.6 Monitoring and Evaluation

PFIs hare responsibility for day-to-day monitoring of implementation of EMPs and PMPs in relation to their own sub-loans. In addition to this hands-on monitoring for the GCP, the ADPCC will have a further role of monitoring and reporting on these aspects on a

project-wide basis, including ensuring that EMPs and EMPs are prepared when and as required, reviewing PFIs' reports on compliance by grant/loan recipients, and periodic spot-checking of implementation on the ground.

Proposals for sub-projects which require PMPs should include baseline information such as:

(i) does the recipient currently use or propose to purchase any pesticides which are not eligible for project financing?
(ii) does the recipient appear to rely entirely or mainly on chemical control with no elements of IPM approach?
(iii) does the recipient have (or lack) adequate facilities to ensure safe storage of pesticides?
(iv) does the recipient have an adequate plan for disposing of excess pesticides and empty containers?
(v) does the recipient have a record of environmental penalties, legal judgments, etc. related to its environmental performance, or any outstanding liabilities related to relevant activities aimed at minimization of environmental impact and its consequences? If yes, please explain in details.

This baseline information will be used to identify the existing gaps, weaknesses, and potential risks and to enable ADPCC to provide targeted assistance to sub-project proponents with the preparation of sub-project specific PMPs. The baseline information will also help in the evaluation of the impact of project measures such as preparation of PMPs, information dissemination and technical assistance on pest management.

Annex 5.1 Pesticides Recommended for Use by Crops

№	Crop	Pest	Pesticide			Class of hazard (WHO)	Allowable application rates	Producer
			Common name	Active Ingredient	Formulation Type*			
1	2	3	4	5	6	7	8	9
1	Hazelnut	Acarina	Neoron	Bromopropylate (samaline) 500g/l	EC	4	1.5-3 l/ha	Singenta Crop, Switzerland
2	Hazelnut	Cerambycidae	Decis	Deltametrin 25g/l	EC	2	0.5-0.6 l/ha	Bayer Germany Crop science
3	Hazelnut	Toricidae	Bi-58	Dimetoat 400g/l	EC	3	1.1-1.9 l/ha	Basp –g Germany
4	Hazelnut	Aphydinea	Dursban	Chlorpirpos 480g/l	EC	2	1.5-2 l/ha	Dow agro science France
5	Hazelnut	Curculionidae	Aktelik	Pirimiphosmetile 500g/l	EC	2	6-10 l/ha	Singet Limited UK
6	Hazelnut	Hyphantria cunea	Nurelle-D	chlorpirpos+ Cypermetrin 500+50g/l	EC	3	1.5-2.0 l/ha	Dow Agro Schience, France
7	Hazelnut	weeds	Glifosan	Gliphosat 360g/l	SL	2	2-4 l/ha	Agriko Group OD Bulgaria
8	Hazelnut	weeds	Fuzilade Forte	Fluazifop-butyl 150g/l	EC	2	1.5-2 l/ha	Singeta Crop Switzerland
9	Citrus	Acarina	Masai	Tebupenpirat 200g/l	WWP	3	0.6-0.8 l/ha	Baspi-Ge Germany
10	Citrus	Coccoidea	Neoron	Bromopropylate (samaline) 500g/l	EC	4	1.5-3 l/ha	Singenta Crop, Switzerland
11	Citrus	Aphydinea	Actara	Thiamethoxam 250g/kg	WDG	3	0.1-0.4 kg/ha	Singenta Crop, Switzerland
12	Citrus	Aphydinea	Caratax	Lambda-Cyhalothrin 50g/l	EC	2	0.4-0.8 l/ha	Singenta Limited UK

13	Citrus	Aphydinea	Konfidormax	Imidacloprid 700g/l	WG	3	0.2 kg/ha	Bayer Cropscience Germany
14	Citrus	Aphydinea	Fastac	Alpha Cypermethrin 100g/l	EC	2	0.2-0.3 l/ha	Baspi AH- Germany
15	Fruits	Torticidae	Masai	Tebupenpirat 200g/l	WWP	3	0.6-0.9 kg/ha	Baspi-Ge Germany
16	Fruits	Aphydinea	Neoron	Bromopropylate (samaline) 500g/l	EC	4	1.5-3 l/ha	Singenta Crop, Switzerland
17	Fruits	Acarina	Bi-58	Dimetoat 400g/l	EC	3	1.1-1.9 l/ha	Basp Germany
18	Fruits	Toricidae	Dursban	chlorpirpos 480g/l	EC	2	1.5-2 l/ha	Dow agro science France
19	Fruits	Noctunidae	Caratax	Lambda-Cyhalothrin 50g/l	EC	2	0.4-0.8 l/ha	Singenta Limited UK
20	Fruits		Decis	Deltametrin 25g/l	EC	2	0.5-1 l/ha	Bayer Germany Crop science
21	Vine	Lobesia botrana	Masai	Tebupensirat 200g/l	WWP	3	0.25-0.37 kg/ha	Baspi-Ge Germany
22	Vine	Acarina	Neoron	Bromopropylate (samaline) 500g/l	EC	4	1.2-1.8 l/ha	Singenta Crop, Switzerland
23	Vine	Viticola	Ridomil Gold	Mefenoxam+Mancozeb 40+640g/kg	WDG	2	2.5 kg/ha	Singenta Crop, Switzerland
24	Vine	Uncinula	Acrobat	Mancozeb +Dimethomorph 600+90g/kg	WDG	2	2 kg/ha	Basp Germany
25	Vine	weeds	Ridonet	Metalaxyl + Mancozeb 80+640g/kg	WP*	2	2.5 kg/ha	Sapa_tarim Turkey

26	Vine	weeds	Vasalaksil	Metalaxy + Mancozeb 80+640g/kg	WP	3	2.5-3 kg/ha	Stocton Chemical Corporation USA
27	Vine	weeds	Glifosan	Gliphosat 360g/l	SL	2	2-4 l/ha	Agro Group OOD Bulgaria
28	Vine	weeds	Fuzilade Forte	Fluazifop-butyl 150g/l	EC	2	1.5-2 l/ha	Singeta Crop Switzerland
29	Vine	weeds	Topaz	Penconazol 100g/l	EC	3	0.15-0.25 l/ha	Singeta Crop Switzerland
30	Vegetables	Aphydinea	Caratax	Lambda-Cyhalothrin 50g/l	EC	2	0.1 l/ha	Singenta Limited UK
31	Vegetables	Acarina	Fastac	Alpha-Cypermethrin 100g/l	EC	2	0.1 l/ha	Baspi AH- Germany
32	Vegetables	Viticola	Confidormax	Imidacloprid 700g/l	WG	3	0.04-0.05 kg/ha	Bayer Crop Scienc Germany
33	Vegetables	Uncinula	Actara	Tiametoxam 250g/kg	WDG	3	0.1-0.6 kg/ha	Singeta Crop Switzerland
34	Vegetables	weeds	Ridomil Gold	Mefenoxam+Mancozeb 40+640g/kg	WDG	2	2.5 kg/ha	Singenta Crop, Switzerland
35	Vegetables	weeds	Acrobat	Mancozeb +Dimethomorph 600+90g/kg	WDG	2	2 kg/ha	Basp Germany
36	Vegetables	weeds	Gezargard	Prometen 500g/l	SC	2	2-3 kg/ha	Singenta Crop, Switzerland
37	Vegetables	weeds	Stomp	Pentimetalin 330g/l	EC	3	3-6 l/ha	Basp Germany
38	Vegetables	weeds	Zenkor	Metribuzin 700g/kg	WP	2	0.7-1.4 kg/ha	Bayer Crop Germany

****Formulation:***
EC- Emulsifiable concentrate
Sl- Soluble liquid (concentrate)
SC- Suspension concentrate
WWP- Water wettable powder
WP- Wettable powder
WDG- Water dispersible granuls
WG- Wettable granuls

*****Class of hazard (WHO)***
1- ***V****ery toxic*
2-*Highly toxic*
3-*Moderately toxic*
4-*Low toxic*

Annex 5.2 Template for Developing Sub-Project Specific Pest Management Plans

Sub-project title:

Sub-project description: *(description of the nature of the investment: equipment purchases, civil works construction, removal/demolition of existing structures, purchase or use of pesticides, etc.).*

Description of sub-project location: (*description of the general land use characteristics at or near the sub-project site; indication of the nearest population centers (villages, cities, etc.), proximity of any surface waters (lakes, rivers, etc.), any areas of particular human or environmental sensitivity or cultural interest (hospitals, schools, religious houses of worship, natural areas protected by the government or international agreements, etc.).*

List of pesticides to be used by the grant recipient

№	Crop	Pest	Pesticide		Class of hazard (WHO)	Area of application (hectares)	Recommended usage rate (volume per hectare)	Package size (liters, kilos)	Amount to be purchased
			Common name	Active Ingredient					
1	2	3	4	5	6	7	8	9	10
1									
2									
3									
4									

Rationale for pesticide selection and use: *(describe the rationale used and considerations taken into account for the selection of the proposed pesticide(s) and the methodology to be used to decide on the timing, dosage, and frequency of pesticide application)*

Methodology for pesticide application: *(describe what will be the physical form of a pesticide, how will it be prepared for application and loaded into equipment/machinery, who will be handling and applying pesticides (age, relevant experience) under what weather conditions will pesticide be applied, what protective gear will be used by personnel)*

Pesticide storage and disposal: *(describe the facilities where pesticides will be stored, means of disposal for excess pesticide and empty packaging)*

APPENDIX 1. Mitigation of Environmental Impacts

Most farming, orchards, horticulture and forestry operations have the potential to impact the environment through the use of chemicals, and due to inappropriate land and water management. Medium-scale agriculture (>50 ha, or > 10 ha for intensive production such as greenhouses) that uses fertilizers, pesticides and other farm chemicals would be Environmental Category-B, and smaller operations (<50ha) would be Category C. Agro-processing enterprises and livestock rearing typically produce emissions affecting air and water as well as generating solid wastes. For Category B projects, the EMP should identify these impacts, the mitigation measures which will be taken to manage them, and the applicable standards to be met, based on national laws, local requirements and the WB Pollution Prevention and Abatement Handbook (Summary of Air Emmissions and Effluent Discharge Requirements, and relevant Industry Sector Guidelines). Where the national/local and PPAH requirements differ from one another, the more stringent requirements will apply.

The following paragraphs cover the likely environmental impacts of different activities, possible mitigation of environmental issues, and guidelines on the permissible limits of various pollutants:

- Airborne pollution
- Waste water treatment
- Solid wastes
- Noise pollution
- Use of chemicals
- Irrigation and drainage
- Use of water for agriculture and industry
- Health and safety in the workplace

Airborne pollution

All processing plants and some horticultural operations that have steam boilers, heating systems or food smoking processes will produce smoke. All dry processing of agricultural products will produce dust. These will require smoke and dust control and air filtration to bring the air quality both inside and outside the plant within National Standards. This includes:

- Animal feed mills
- Drying towers for milk powder, egg powder etc
- Grain handling, flour milling facilities and pasta production
- Meat smoking sheds
- Seed processing and packing
- Tea processing
- All other agro-industries involving dry powder processing plants.

Mitigation: The sub-project proponent must observe Georgian Law on Ambient Air (1997) covering licences, standards and permitted limits, as well as Table 1 (Air Emission Requirements) of the WB PPAH. They must include in the sub-project EMPs description of how dust, particulate matter and any other air pollutants will be

monitored and maintained within acceptable limits. Health and safety is also an issue, as workers must be protected from inhalation of dust within the plant.

Permissible limits: Limits within working areas and at the air discharge from a plant are set by the National and Local authorities. Ministry of Environment Protection and natural Resources will provide the actual set limits for the operation of a sub-project, and PFI should compare this with limits indicated in the WB PPAH (Table 1 and relevant industry sector guidelines) to determine which standard is more stringent.

Wastewater treatment

Wet processes for food and beverage production will usually require liquid wastewater treatment to bring the effluent strength down to National Standards before discharge from the plant. This includes:

- Fruit processing; jams, pickles and juices
- Leather industries; skins, leather and leather goods processing
- Milk and milk products factories; cheese and ice-cream production
- Slaughterhouses, meat and meat products
- Starch mills
- All other agro-industries involving wet processing or chemical cleaning of the processing plant.

Mitigation: The proponent must observe Georgian Law on Waters (1997) covering licences, standards and permitted limits. The sub-project proponent must include in the proposal an estimate of effluent strength before treatment (BOD, COD, TS, pH, and any other significant pollutants) and the design of the wastewater treatment plant to mitigate the potential pollution, with a guarantee to discharge effluent from the plant within National Standards.

Permissible limits: This may vary dependent on the environment into which the effluent is being discharged; river, lake, sea or community sewer. As a general guide, limits for discharge into lakes are lowest at approximately 30-60ppm BOD, into rivers or sea at approximately 60-200ppm BOD; TSS 200mg/litre and pH 6-9. Discharge into community sewers at any limit set by local regulations depending on local authority ability and willingness to treat the effluent. Local authorities will provide the actual set limits on permits issued to the sub-project, and PFI should compare these standards with the WB PPAH (Table 2: Effluent Discharge Requirements) to determine which is the more stringent.

Solid wastes

Most agriculture, livestock production, agro-industries, packaging and marketing operations produce solid wastes. All wet and dry processes (covered above) also produce solid wastes from their wastewater settling tanks and dust filtration systems. All plants and facilities with steam or hot water boilers or heating systems using solid fuels (coal, wood etc) produce solid waste from ash and clinker. Fresh food and processed food markets produce solid wastes from their day-to-day operations. All livestock production units produce manure and other solid wastes, and most manufacturing and packaging processes produce solid waste.

Mitigation: In many cases the solid wastes can become a raw material for other products:

- Oil cakes used as animal feeds
- Organic waste materials used as compost or fertilizer
- Seed and grain wastes used for animal feed production
- Clinker from boilers used as construction material
- Paper, glass, some plastics and metals can be recycled

In other cases there may be no alternative to disposal in landfill sites and incinerators, but all other possibilities of ecological re-use should be explored first.

Permissible limits: There are no generalizable limits for solid wastes but the sub-project proponent must include in the proposal an estimate of solid waste production (tons per day of each type of waste) and its pollution potential, and design effective use or disposal of the solid waste in an environmentally acceptable and safe manner, either through recycling or through transport to legally certified landfills. Disposal methods must meet local and National Standards, by-laws and regulations. Local authorities should issue permits. Where generation, storage or disposal of solid waste has the potential to lead to air or water pollution (e.g. nitrate runoff from manure; PM from incineration of combustible wastes), the relevant discussions (above) apply.

Noise pollution

All processing and services equipment procured for the project is to be specified to operate within the noise limitations of National Standards and the relevant industry sector guidelines in the WB PPAH.

Mitigation: The proponent is to identify any equipment or areas that exceed the permissible limits, and to define the mitigation measures that will be taken to protect workers and residents from noise levels higher than those stated. Within the plant this may include ear protection for workers, and outside the plant may include sound baffles or tree planting programmes. In any case the proponent must be able to demonstrate the practicality and permanence of the proposed mitigation.

Permissible limits: As a general guideline the noise generated by equipment should not exceed 85dB at the operating station of the equipment; not to exceed 63 dB at locations in the plant where personnel will be working on a continuous basis during the day (on packing lines for example); where plant buildings are in the vicinity of offices or residences, noise is to be <55 dB outside of the plant building during daytime and <45dB at night.

Use of Chemicals

Both farming and agro-processing use chemicals that are potentially hazardous. The sub-project proponent must state the expected type of chemicals to be used and the strength and volumes of those chemicals.

In the case of agricultural pesticides, the project must follow the requirements outlined in the section on Pest Management Plans (above).

In the case of use of other chemicals, for sub-projects falling under Category B, the EMP should indicate the measures which will be used to ensure safe handling, use, storage, stock keeping/tracking and disposal of any potentially hazardous chemicals. For projects falling under Category C, which might include the use of relatively low-hazard chemicals in small quantities, the proponent will be required to indicate in the proposal measures for good management of chemicals – their storage, use and handling.

Use of water in agricultural production and agro-processing

The sub-project proponent may need to extract groundwater or surface water or connect to local water supply networks to supply farms, orchards, nurseries or processing plants with water. To do this the proponent must observe Georgian Law on Waters (1997) covering licences, standards and permitted limits. In the sub-project application the proponent should state the water needs of the sub-project:

- Does the proposal require potable water supply?
- Does the proposal require non-potable water supply?
- The total volume used in litres/day
- The peak demand in litres/hr
- The source of water (ground, river, reservoir, local network etc)

Mitigation: Good farming practices and good process design can minimise the volume of water consumed, thereby saving energy and water. Efficient irrigation systems and, at the processing plants, water recycling, steam condensate recycling etc, should be designed into the process.

Permissible limits: Food processing plants are particularly high users of water and should be encouraged to minimise water use. Good practice should keep below the following limits:

- Milk industry : Water use <3.0 x milk intake volume
- Fruit, conserves, pickles : Water use <1.5 x finished product volume
- Meat industry : Water use <2.0 x raw material volume
- Wine industry : Water use <1.0 x finished product volume

Health and Safety Standards in Processing Industries

Safety standards for the working environment are to meet National safety standards for working environment. Some items that may be relevant to the project are as follows:

Operating machinery: All operating machinery is to be fully protected with safety guards to protect workers from injury from moving parts. No open drive belts, pulleys or chains are to be accessible without removal of fixed guards. No access to internal moving parts for cleaning or clearing blockages should be provided, without an auto stop mechanism to protect the worker when opening the equipment for cleaning.

Protection against dust and noise: All workers are to be protected against inhalation of dust or noxious chemicals, and against excessive noise in the workplace. Refer to the relevant paragraphs on Air Pollution, Noise Pollution and Hazardous Chemicals (above).

Pressure vessels: All pressure vessels are to comply with the National boiler regulations and National pressure vessel regulations or with ASME Code (or equivalent), and are to be fitted with safety devices required by these standards.

Electrical safety: All electrically driven equipment is to be fitted with a local lock-off isolator switch or local lock-off push button to protect maintenance workers from accidental start-up, unless the main switch panel is located within 6m of the equipment, and is not concealed in any way from the location of the equipment.

Community activities

Minor construction - buildings: Georgia RDP may finance small construction projects in the community necessary for linkage of community functions with production, processing and marketing activities. These could include collection centres for milk or farm produce, and veterinary services for livestock. These projects may be expected to have relatively minor issues relating to dust, noise, management of construction materials and wastes, worker safety, etc. relating to both construction and operational stages. Simple EMPs should be prepared for sub-projects falling under Category B. For minor rehabilitation works the simple "Checklist" EMP may be used, as discussed above.

Access roads and bridges: RDP may support the construction of farm access roads (that may also include small bridges), or road rehabilitation and maintenance. Potential issues include ensuring appropriate location and restoration of borrow pits (for construction materials), traffic disruption, dust, noise, contamination of surface or ground waters from silting or mineral oil spills, etc. Any new road or bridge construction would fall under Category B and require an EMP.

No construction which requires land acquisition or displacement of people (residences or businesses, with or without legal title or leases) will be financed.

APPENDIX 2. Environmental Monitoring and Reporting

Environmental monitoring is an integral part of an EMP. Monitoring during project implementation provides information about key environmental aspects of the project, particularly environmental impacts, and the effectiveness of mitigation measures. Monitoring includes both ascertaining whether agreed mitigation measures are being implemented in accordance with the EMP and evaluating the effectiveness and impact of those mitigation measures (e.g., are measures in place to control air emissions, and are required standards for PM and other air quality parameters being met?).

Environmental monitoring of long term issues

The Ministry of Environmental and its local agents will decide on measures to monitor the long-term effects of activities that could have negative environmental impacts. This may include monitoring by its staff, or by specialists contracted to undertake specific monitoring duties. Typically this may include:

- Monitoring effluents from production units and factories, and monitoring the water body into which effluents discharge, to ensure no negative impacts
- Monitoring air quality in and around mills to ensure compliance with air quality standards
- Monitoring soil/water conditions in and around chemical and fuel storage depots and chemical mixing plants to ensure no negative impacts
- Monitoring forestry and large scale farming operations to ensure the ecology is being maintained (run-off and erosion)
- Monitoring wet-lands or areas of scientific, natural or historic interest where they may be affected by the project
- Measuring noise levels to determine whether they are within the acceptable range

Special environmental studies may also be called for in the event of sudden environmental change near to a sub-project activity. The frequency of monitoring and type of samples analysed would be dependent on the nature of the pollutant.

Environmental Monitoring by the PFIs and reporting to the Bank

PFIs will be required to track environmental performance of their clients. The main tool for environmental supervision is regular and accurate monitoring of implementation of the mitigation measures prescribed for sub-projects through the environmental mitigation and monitoring plan. Such plans must be developed by sub-borrowers in cooperation with PFIs for all Category B sub-projects. Below is a template suggested for environmental mitigation and monitoring plan:

Activity	**Expected Environmental Impact**	**Proposed Measure for Mitigation or Environmental Standard to be Met**	**Time/period of Implementing Mitigation Measure**	**Monitoring method**	**Time/Frequency of Monitoring**

PFIs are required to submit annual reports on the environmental performance of the loans financed using WB funds. Such reports should be brief and focus on the following:

- List of loans made and the proposed activities of the sub-project;
- Environmental categorization of the approved loans;
- Environmentally negative effects associated with particular loans, and mitigation measures prescribed;
- The effectiveness of mitigation measures applied;
- Any material environment-related accidents, litigation, complaints, or fines for non-compliance with environmental or health and safety regulations brought to the PFIs attention or otherwise known to the PFI
- Loans rejected on environmental, health and safety grounds;
- Difficulties and/or constraints related to the implementation of the environmental procedures.

To help the PFI prepare such reports, it should require that its borrowers notify the PFI immediately of any accidents and incidents (e.g. spillages) which have or are likely to have a material adverse effect on the environment, health or safety, including any remedial action planned or taken by the client in response to the accident/incident. In the event of serious environmental issues the PFI should also inform ADPCC. Below is a template for environmental reporting of PFIs.

Annual Environmental Report format for PFIs

Participant Bank or PFI:

Reporting dates: *(From DD/MM/YY - To DD/MM/YY)*

Sub-projects environmentally accepted								
Sub-project title	***Activities***	***Project phase <1>***	***Environmental category***	***Positive impacts***	***Negative impacts***	***Mitigation measures***	***Effectiveness of mitigation***	***Issues <2>***
(Name, location, title or reference)	(Funded by project)	(see note <1> below)	(WB category A, B or C)	(List them)	(List them)	(effluent treatment, noise control etc.)	(Good or Poor and needs improving)	(List them – see note <2> below)
1.								
2.								
3.								
etc.								

Sub-projects environmentally rejected			
Sub-project title	***Activities***	***Reasons for rejection***	***Conditions for sub-loan reconsideration <3>***
1.			
2.			
3.			
etc.			

Notes:

<1> Sub-project phase will be one of the following a) Under preparation or appraisal, b) Appraised or c) Implementation

<2> Issues : Accidents, litigation, complaints or fines are to be listed.

<3> Sub-projects rejected for environmental reasons may be reconsidered at the discretion of the PFI, but conditions for reconsideration must be stated.

APPENDIX 3. Overview of the Environmental Legislation of Georgia Pertaining RDP

Law of Georgia on Environmental Protection (1996)

This law regulates legal relations between governmental authorities and physical and legal (no matter ownership or organizational-legal status) persons in environmental protection and nature management spheres (hereinafter referred to as "Environmental Protection") throughout Georgian territory including territorial waters, airspace, continental shelf and special economic zone.

Law of Georgia on Waters (1997)

This Law regulates environmental issues related to surface waters, underground waters, current spring waters and territorial limits and determines rules necessary for getting licenses regarding water intake and falloff. The water preservation standards whose objective is to preserve the water resources are specified in the surface water protection norms and standards (1996). The latter describes the methodology for calculation of the permitted limit of falloffs.

Law of Georgia on Toxic Chemical Elements (1998)

This law regulates legal relations between governmental authorities and physical and legal persons in the sphere of creation, testing, state expertise, standardization, accounting and registration, production, packaging, marking, labelling, transportation, utilization, export, import, processing, neutralizing, placement, limiting, prohibition, removing from usage as well as rules of state and agency-level supervision over them.

Operation of this law does not pertain to:

(a) ready-made preventive and curative medicines for human and animal decease control;
(b) cosmetic production;
(c) chemical substances used for educational-scientific purposes in amounts not affecting negatively human health and environment;
(d) micro-organisms and microbe origin biologically active substances;
(e) food additives;
(f) agricultural chemical substances (except their unified state register);
(g) radioactive materials and materials;
(h) hazardous production residuals;
(i) self-consumption of domestic chemical substances.

Law of Georgia on Ambient Air (1999)

This Law regulates quality control norms of the living environment air and temporal methodology of air pollution limitation. Comparison of air quality with the relevant

standards, which are based on the State Standards (see, State Standards 17.0.0. 09-79-17.2.6.02-85 (paragraph 18).

Main tasks of this law are as follows:

(a) ensure attainment, maintenance and improvement of safety of ambient air for human health and environment;
(b) provide legal arrangements for ensuring regulation of emission of hazardous substances into the ambient air;
(c) support society awareness principle on ambient air condition;
(d) facilitate staged activation of legal standards determined by EU Legislation on Protection of Ambient Air from Pollution.

Law of Georgia on the State Ecological Expertise (2007)

The State Ecological Expertise is necessary environmental activity implemented in the process of environmental impact assessment of certain activities or taking decision on issuance of construction permits.

Georgian Law on Environmental Permits defines the full list of activities subject to state ecological expertise during decision making on environmental impact assessment or construction permit issuance.

The State ecological expertise aims at ensuring preservation of ecological balance of the environment taking into consideration environmental requirements, rational nature management and sustainable development principles. Positive conclusion of the State ecological expertise represents a necessary background for issuance of environmental impact assessment or construction permits

The key principles of the State ecological expertise are:

(a) potential ecological risk assessment;
(b) all-round assessment of the possible impact of activities on the environment prior to their commencement;
(c) giving heed to environmental requirements and standards;
(d) unlimited execution of experts' powers;
(e) argumentation and legality of the expertise conclusion;
(f) consideration of public interests.

The body authorised to carry out the State ecological expertise is the Ministry of Environment Protection and Natural Resources of Georgia.

The rights of the Ministry of Environment Protection and Natural Resources of Georgia in the sphere of ecological expertise are to:

(a) invite independent experts for conducting ecological expertise in compliance with the established rules as may be necessary, and

(b) receive information (including referential, statistic and office use information) necessary for ecological expertise procedure if otherwise stipulated by Georgian legislation.

The obligations of the Ministry of Environment Protection and Natural Resources of Georgia in the sphere of ecological expertise are to:

(a) set up expert commissions intended for studying the objects subject to the expertise;
(b) provide the expertise process with required information;
(c) ensure compliance of ecological expertise conduction with Georgian legislation;
(d) register independent experts and to develop their data base;
(e) upon request of activity performer provide him/her for familiarization purpose, normative acts on ecological expertise organization and conduction;
(f) upon request of public representatives, to provide them for familiarization purpose, the documents regulating the conducting of the state ecological expertise.

In order to conduct the State ecological expertise an expert committee shall be set up for each specific case by order of the Ministry of Environment Protection and Natural Resources. If needed, independent expects can be involved in operation of the committee by the Ministry in compliance with the established rule. The State ecological expertise shall be carried out after the submission, in a manner established by legislation, of an application for the expertise of an activity. Procedures of conducting the ecological expertise and compiling the expert committee are defined through the Rules of Carrying out State Ecological Expertise, approved by the Minister.

The expert committee shall comprise only that independent expert who is registered in the experts' register of the Ministry in compliance with the established rule. The involvement of an expert from the experts' register in committee's work shall be done by Minister's order. An independent expert shall be responsible for objective character and comprehensiveness of his/her opinion prepared.

The findings of the expert committee shall be reflected in the conclusion to be prepared by the expert committee and signed by its chairman. Based on the committee's opinion, the Ministry shall prepare the conclusion of the State ecological expertise, which shall be approved by the Minister by administrative-legislative act.

Conclusion of the State ecological expertise may be positive or negative. The positive conclusion of the State ecological expertise shall be issued in cases when the evidential documentation:

(a) is in compliance with the legislation of Georgia as well as the environmental norms and standards effective on the territory of Georgia;
(b) the implementation of the activity outlined in it does not cause irreversible qualitative and quantitative changes in the environmental condition and natural resources;

(c) includes measures reducing or evading the impact on the environment including the measures for liquidation of possible effects of emergency situations.
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The conclusion of the State ecological expertise shall contain the following information:

(a) compliance of the activity with the requirement of Georgian law;
(b) weaknesses of documents submitted for state ecological expertise;
(c) importance of weaknesses of documents submitted for state ecological expertise for decision-making process;
(d) possibility of improvement of weaknesses of documents submitted for state ecological expertise and the ways of improvement;
(e) conditions for issuing the conclusion of the State ecological expertise (as necessary).

The conclusion of the State ecological expertise is a part of the environment impact assessment or of a construction permit and conditions of the conclusion of the State ecological expertise are part of conditions of a permit. Compliance with these conditions are obligatory for the owner of an environmental or a construction permit.

Law of Georgia on Environmental Permits (2007)

This law carries a full list of activities subject to compulsory ecological expertise on the territory of Georgia and issuance of environmental permit for their implementation, carrying out ecological expertise during permit issuance, legal basis for community involvement and its awareness on environmental impact assessment and decision making on permit issuance.

The activities subject to the State ecological expertise are as follows:

a) mining of mineral ores (processing construction (including inert) materials is not subject to the expertise except those provided for by sub-point c of this point);
(b) any production technology where asbestos is used;
(c) cement, asphalt, lime, plaster, gypsum and brick production;
(d) glass and glass produce production;
(e) hard domestic waste procession (including arrangement of waste burn plants) and/or arrangement of dumps;
(f) disposal of toxic and other hazardous waste, arrangement of underground storages and/or their procession, neutralization;
(g) coal gasification, liquation, briquetting, carbonization related any capacity production;
(h) construction of main oil and gas pipelines;
(i) placement of oil and oil product, liquid and natural gas storages, terminals where capacity of one of the tanks located within their territory or total capacity of tanks are over 1,000 m^3.
(j) construction of engineering protection structures of international and internal state importance highways, railways and their related bridges, tunnels, roads, railways and their territories;

(k) construction of high voltage (35 kW and more) air and cable electric power transmission lines and substation (110 kW and more);
(l) construction of hydro power station (2 MW and more capacity) and heat power stations (10 MW and more capacity);
(m) construction of a subway;
(n) construction of a water reservoir (10,000 m^3 and more capacity);
(o) construction of waste water cleaning structures (1,000 m^3 in 24 hours and more capacity) and main sewerage collector;
(p) airdrome, airport, railway station and seaport construction;
(q) dam, port, moorage, grass construction;
(r) chemical industry, including chemical processing of semi-finished goods (interim products) and production of chemical substances; production and processing of pesticides, pharmaceutical goods, chemical colourings, varnishes, peroxide and production and processing of elastic substances (rubbers or plastic substances), production and packing of gunpowder or any other explosives; production of batteries; production of graphite electrodes,.
(s) oil refining and gas processing enterprises (more than 500 t in 24 hours);
(t) any metallurgical production (with more than 1 ton production capacity) except metal cold procession and jewellery production;
(u) arrangement of storages of toxic and other hazardous substances.