

ASIA 11-132



**USAID**  
FROM THE AMERICAN PEOPLE

**ENVIRONMENTAL COMPLIANCE FACESHEET & AMENDMENT #1 TO  
THE REQUEST FOR CATEGORICAL EXCLUSION (INITIAL  
ENVIRONMENTAL EXAMINATION)**

**Objective:** Objective 4/ Economic Growth

**Program / Project Title:** The USAID CAR/EG IQC consisting of two (2) components:  
The USAID Macroeconomic Foundations for Growth IQC (EG MACRO)  
The USAID Microeconomic Foundations for Growth IQC (EG MICRO)

**Program Areas:** 1. Macroeconomic Foundation for Growth  
2. Trade and Investment  
3. Financial Sector  
6. Private Sector Competitiveness

**Program Elements:** 1.1 Fiscal Policy  
2.1 Trade and Investment Enabling Environment  
3.1 Financial Sector Enabling Environment  
6.1 Business Enabling Environment

**Country/Region:** Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan ) and Afghanistan

**Funding Period:** FY2011 – FY2019

**Resource Levels/Amount(s):** \$100 million (2 ceilings of \$50 million each)

**Statement Prepared by:** Gulzada Azhetova, Project Management Specialist,  
Economic Development Office

**IEE Amendment?** Yes No

**Environmental Media and/or Human Health Potentially Impacted** (check all that apply):

None  Air  Water  Land  Biodiversity  Human health  Other

**Environmental Action(s) Recommended** (check all that apply):

**Categorical Exclusion(s)**

**Initial Environmental Examination:**

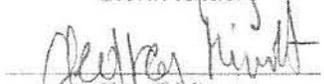
**Negative Determination:** no significant adverse effects expected regarding the proposed activities, which are well defined over life of activity. IEE prepared:

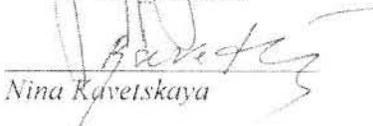
project and submitted to the Asia Bureau Environmental Officer for approval and, if appropriate, an environmental assessment will be prepared.

**USAID APPROVAL OF ENVIRONMENTAL ACTION(S) RECOMMENDED:**

**Clearance:**

Acting Mission Director:  Date: 7/20/2011  
*Glenn Anders*

EDO office Director:  Date: 07/20/2011  
*Geoff Minott*

Mission Environmental Officer:  Date: 07/20/2011  
*Nina Kavetskaya*

Regional Environmental Advisor  
for Asia and OAPA: concurred by e-mail Date: 7/18/2011  
*Andrei Barannik*

**Concurrence:**

ANE Bureau Environmental  
Officer  Date: 8/17/11  
*Robert Macleod*

Approved:

Disapproved:

- ☒ With conditions: no special mitigation measures needed; normal good practices will be used. For the possible limited procurement of equipment, including electric and electronic equipment (computers, printers, etc.) as described in Table 2, Section II, the proposed action is that the Implementer should provide evidence that equipment is procured from certified retailers; environmental safety and quality certificates conforming with national and/or international standards are available; it's used in an environmentally sound and safe manner, and properly disposed of, when applicable, at the end of its useful life in a manner consistent with best management practices according to USG, European Union or equivalent standards acceptable to USAID.
- ☒ With conditions (special mitigation measures specified to prevent unintended impact for activities listed in Table 2, Section III).

**Summary of Findings:**

This Amendment #1 fully supersedes the RCE for all Micro and Macro Economic Growth IQC (EG IQC) activities approved by BEO on 2/15/11( DCN: Asia 11-51). It adds more diverse types of activities within same budget and length of projects and properly reflects on the nature and the SOW of activities as identified by country and technical offices.

Table 1 characterizes main types of EG IQC activities that are/can be proposed under current and any future EG Macro and Micro IQC task orders.

**Table 1.** Main types of Economic Growth IQC activities under different task orders (based on activities description in the IEE Section 1)

No	Type of IQC	Task Order Titles	Illustrative Types of Activities
1.	EG MACRO	Economic Policy	Strategies, policies, action plans assessments, reforms, analyses of regulatory reform, education, trainings, workshops, researches, grants and other activities that support private-sector-led growth; human and institutional capacity development, rebuilding the economy under the crisis assistance and stabilization and other activities as described in the IEE Section 1. It is anticipated that procurement of commodities, electric and electronic equipment (computers, projectors, etc) and small scale construction or renovation activities may occur in many EG MACRO IQC projects.

		<p>Reform in Kyrgyzstan</p> <p>Regional Economic Integration</p> <p>Macroeconomic Project in Kazakhstan and Turkmenistan</p>	<ul style="list-style-type: none"> <li>-Economic reforms to improve trade &amp; investment climate;</li> <li>-Fiscal reforms to stabilize and support growth of KG economy;</li> <li>-Governance reforms to support economic policy and fiscal reforms</li> <li>-Help export partnership groups developed under legacy projects;</li> <li>-Assist Kazakhstan and Tajikistan in WTO accession, and related trade facilitation and trade policy development activities throughout Central Asia;</li> <li>-Improve transport corridor performance in Central Asia;</li> <li>-Evaluate export potential of Central Asian firms and industries through market research;</li> <li>-Test the barriers to export through facilitating sales to the US Department of Defense for use in Afghanistan</li> <li>-To assist the Government of Kazakhstan and Turkmenistan to develop and implement sound fiscal management policies, improve regulatory processes, and support enterprise development;</li> <li>-Ensure effective institutional capacity at key regulatory, oversight and legislative institutions to promote competitive private sector development and stimulate investment;</li> <li>-Increase transparency, predictability and certainty in the trading environment</li> </ul>
2	EG MICRO		<p>Technical assistance and leadership in the areas of:</p> <ul style="list-style-type: none"> <li>-Small and medium enterprise development</li> <li>-Microenterprise development</li> <li>-Support to agribusiness and agriproducers</li> <li>-Stabilization – crisis assistance, and other activities as described in the IEE Section 1.</li> </ul> <p>It is anticipated that procurement of commodities, electric and electronic equipment (computers, projectors, etc) and</p>

			small scale construction or renovation activities may occur in many projects in support of the EG MICRO IQC activities.
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Table 2 presents results of environmental screening and recommends threshold determinations for main types of activities under all current and future IQC task orders.

**Table 2.** Environmental Screening of the Objective 4 Activities

No.	Activities	Effect on Natural or Physical Environment	Threshold Decisions and Reg. 216 actions required
I	<p>All activities that won't have an effect on the natural or physical environment.</p> <p>This includes: education, technical assistance, training programs except to the extent such programs include activities directly affecting the environment (such as construction of facilities, etc.); consultations, participant training, document transfers and information dissemination, analysis, studies, conferences workshops, study tours, curriculum development working with training programs, developing information networks, etc.</p>	No effect	<b>Categorical Exclusion</b> , no actions required
II	<p>All activities regarding which no significant adverse effects are expected. No special mitigation measures are needed; activities are implemented with conditions. This includes:</p> <p>a) procurement of commodities, materials, electric and electronic equipment including computers .</p>	Insignificant effect	<p><b>Negative Determination with conditions.</b></p> <p>a)The implementer is required to ensure that equipment, commodities (also see ADS 312,) and materials are procured from certified retailers; environmental safety and quality certificates</p>

	<p>b)facilitating finances, financing facilities, such as revolving funds, capitalization of MFIs, guarantee programs, equity, and other forms of financing</p>		<p>conforming with national and/or international standards are available; equipment and materials are used in an environmentally sound and safe manner, properly disposed of when applicable at the end of their useful life in a manner consistent with best management practices according to USG, European Union or equivalent standards acceptable to USAID.</p> <p>b)The implementer is required to review the adequacy of the environmental capabilities of the financial institutions to be involved. Implementer will ensure that appropriate environmental standards are developed (e.g. Environmental Review Manual) and followed by the financial institutions in issuing loans with the use of USAID-supported guarantee or capital funding.</p>
III	<p>All activities that normally don't have a significant effect on the environment. Activities are developed with conditions (special mitigation measures specified to prevent unintended impact for activities), for example:</p> <p>a)</p> <ul style="list-style-type: none"> <li>-set-up of small scale demonstration plots and pilots. This might involve agroprocessing, improved water supply, procurement of inputs, facilitating sales, testing food supply under NDN;</li> <li>-infrastructure improvements, and small-scale rehabilitation and construction as part of rebuilding the economy of a town, city or region devastated by ethnic violence or natural disaster; construction and rehabilitation of facilities, infrastuctural improvement</li> </ul>	<p>Potential for a significant adverse effect of one or more activities</p>	<p><b>Negative Determination with conditions; Positive Determination</b></p> <p>a)EDD in form of Environmental Review and Assessment Checklist (Annex 1) is required to identify environmental effects, develop Environmental Manual and Mitigation and Monitoring Plans when applicable, confirm /neglect and mitigate a potentially significant adverse effect. If confirmed, a Scoping Statement (SS) and Environmental Assessment (EA) shall be conducted by the implementer prior to start of activities. SOW/Terms of Reference (TOR) for Scoping Statement and EA Report must be reviewed by MEO</p>

<p>-procurement of equipment and machinery, technologies, materials, services that may have a potential for hazardous environmental impact;</p> <p>-all other activities and actions having a similar effect on the environment</p> <p>b)The development of strategies, policies, action plans, economic plans, prognoses, regulatory and other documents, implementation of which may have negative direct or indirect socio-economic and environmental impacts</p>		<p>and approved by Asia BEO. For references please see Section “Implementer procedures”</p> <p>b)The Implementer should ensure that SOW for related procurements is reviewed and concurred to by the MEO</p>
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**EDD - Environmental Due Diligence Review**

**a) Recommended Action: *Categorical Exclusion* (90% of funding)**

Pursuant to 22 CFR 216.2(c)(2)(i), the originator of the activities has determined that all of Activities consist of types of interventions entirely within the categories listed in paragraph (c)(2), “Categorical Exclusions,” of Section 216.2, “Applicability of Procedures,” of Title 22 CFR Part 216, “AID Environmental Procedures”, and therefore are categorically excluded from any further environmental review requirements. The originator of the proposed action has further determined that the proposed activities are fully within the following classes of actions:

- a. Education, technical assistance, or training programs except to the extent such program includes activities directly affecting the environment (such as construction of facilities, etc.) [22 CFR 216.2(c)(2)(i)];
- b. Analyses, studies, academic or research workshops and meetings. [22 CFR 216.2(c)(2)(iii)];
- c. Document and information transfers. [22 CFR 216.2(c)(2)(v)]; and
- d. Studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment (such as construction of facilities, etc.) [22 CFR 216.2(c)(2)(xiv)].

**b) Recommended Action: *Negative Determination with conditions* (5% of funding)** For activities as specified in Table 2, Section III above. All these activities could have a potential for moderate adverse impact on the natural or physical environment. For each of these types of activities the implementer will: 1) prepare Environmental Due Diligence (EDD) review and based on its findings will document in Environmental Review and Assessment Checklist (EAL) existing environmental concerns and foreseeable environmental effects resulting from the activity; and 2) develop an Environmental Manual (EM) and Framework Environmental Mitigation and Monitoring Plan (FEMMP) when applicable. These EM and FEMMP will then be approved by the MEO, in

consultation with the Regional Environmental Advisor for Asia (REA/Asia), adapted to a specific site before the activity implementation, and incorporated into the project design. The Standard Conditions List in Annex 3 and Table 2 of this IEE may be used as a guide in developing of FEMMP.

c) **Recommended Action: *Negative Determination with conditions*** (5% of funding). For the possible limited procurement of commodities, materials and equipment, including electric and electronic equipment (computers, telephones etc.) (Table 2, Section II), no special mitigation measures needed; normal good practices will be used. The proposed action required is that the Implementer should provide evidence that equipment is procured from certified retailers; environmental safety and quality certificates conforming with national and/or international standards are available; recipient of the equipment is following all applicable national and international laws to ensure that it's used in an environmentally sound and safe manner, and properly disposed of (when applicable) at the end of their useful life in a manner consistent with best management practices according to USG, European Union or equivalent standards.

#### **Implementer Procedures:**

- All program activities will seek to raise environmental awareness, promote regional and national environmentally and socially sustainable development, biodiversity conservation, adaptation to climate change, foster the culture of environmental compliance and governance, in accordance with The UNECE Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters with reference to it:  
<http://www.unece.org/env/pp/welcome.html>
- The Implementer will include environment compliance considerations into all aspects of the program implementation and will promote and train local counterparts on environmental requirements and standards across all of the program's activities. Such proposed activities will be included into annual work plans, and results will be reported in annual reports.
- Each activity should be conducted in a manner consistent with good design and implementation practices described in USAID *Environmental Guidelines for Small-Scale Activities in Africa*, 2nd edition as provided at:  
<http://www.encapafrika.org/egssaa.htm>; *IFC Environmental, Health and Safety Guidelines* as provided at:  
<http://www.ifc.org/ifcext/sustainability.nsf/Content/EnvironmentalGuidelines>, and the *World Bank 1999 Pollution Prevention and Abatement Handbook (PPAH)* as provided at: [http://www-wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937&theSitePK=523679&menuPK=64187510&searchMenuPK=64187283&siteName=WDS&entityID=000094946\\_99040905052283](http://www-wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937&theSitePK=523679&menuPK=64187510&searchMenuPK=64187283&siteName=WDS&entityID=000094946_99040905052283) and [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1999/06/03/000094946\\_99040905052283/Rendered/PDF/multi0page](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1999/06/03/000094946_99040905052283/Rendered/PDF/multi0page); and Standard Conditions for Small-Scale Construction, Small-Scale Road Rehabilitation, Small-Scale Water and Wastewater Activities, and Small-Scale Irrigation Projects attached to this IEE.

- The Implementer will use the Environmental Review and Assessment Checklist (EAL) (Annex 1) and Leopold Matrix (Annex 2) as a main reporting document for each activity having an adverse environmental impact.
- Prior to the launch of each activity including small grants, the Implementer will conduct an Environmental Due Diligence (EDD) review as an inherent part of the EAL for each type/class of activities that may have a potential for moderate and high adverse environmental impact (e.g. small-scale construction; small road rehabilitation, rehabilitation of potable and irrigation facilities; etc) to document existing environmental concerns and foreseeable environmental effects resulting from such types of activities. If the EDD results in a finding of potential significant environmental impact, a Scoping Statement (SS) and Environmental Assessment (EA) will be done by the implementer prior to start of activities. Terms of Reference (TOR) for Scoping Statement and EA Report must be reviewed by MEO and approved by Asia BEO.
- Based on EDD results and mitigation measures from Environmental Guidelines for Small-scale Activities, IFC EHS Guidelines, World Bank PPAH, etc. as referenced above, implementer will develop Environmental Manual (EM) and Framework Environmental Mitigation and Monitoring Plan (FEMMP) for each type/class of expected activities when applicable. EM will establish criteria for *eligibility, selection and screening* against potential environmental risk (low, moderate, and high). EM and FEMMP might be done per implementing partner (IP) or the whole program and then adapted as needed for different IPs. These documentation will then be approved by the MEO, in consultation with the Regional Environmental Advisor for Asia (REA/Asia), incorporated in project design and FEMMP will be adapted to a specific site prior to the activity implementation (EMMP).
- The implementer will have a qualified, MEO-approved environmental impact professional(s) (EIP) who will assess and recommend environmental actions to be taken by the program and will coordinate implementation of mitigation measures, monitoring, and reporting. EIP will conduct environmental reviews and will identify: 1) activity category in consultation with the MEO); 2) potential environmental impacts (based on EAL, EDD, Leopold Matrix, and his/her technical knowledge of the local, U.S., and international environmental standards, guidelines, requirements, and practices; and 3) mitigation and monitoring measures needed. Should EIP lack any special technical knowledge to identify any special environmental impact, the Implementer will consult with a specialist in the relevant area.
- Host country Environmental, Occupational Health and Safety (OHS) and other relevant laws and regulations, standards, norms and best practices for environmental protection and management will be followed in implementing the activities. Implementer will ensure compliance by its staff, subcontractors, and subgrantees with USAID regulations, policies, procedures and acceptable best practice as well as compliance with applicable international environmental obligations.
- For activities categorized as “potential risks” or “definite risks” of adverse environmental impact, the Implementer will be required to obtain a letter from the local or regional office for environmental protection stating that the office: a) has

been contacted by the Implementer concerning the project activities; b) will maintain contact with the project; and c) will be aware of the potential environmental impacts of the project to help ensure that no detrimental impact will result from this project.

- For such activities prior to their implementation the Implementer will conduct public consultations and will seek concurrence from the national duly authorized environmental agency on FEMMPs and EMMPs.
- Monitoring will be conducted during the project (beginning with baseline conditions) to determine the environmental impact (positive and/or negative) of project activities. The Implementer shall use only qualified staff for overseeing the mitigation and monitoring work. Monitoring shall occur on an as-needed basis. The Implementer will ensure that the environmental procedures are implemented, potential impacts mitigated, and indirect and cumulative effects are considered for each activity. If negative environmental impacts are discovered through regular monitoring and evaluation of project activities, immediate actions will be taken to rectify the situation.

**Resource Allocation, Training and Reporting requirements:**

The contract with the Implementer will include a requirement to follow all recommendations of this IEE. The Implementer will be responsible for training his staff, grantees, subcontractors, and counterparts on the contract's environmental requirements and for ensuring their compliance with these requirements.

Implementer shall have sufficient permanent staff with expertise in an environmental field and compliance and resources to implement and report on the expected scope of environmental compliance work.

The Mission will provide for environmental training for the Implementer(s) EIP(s) by the REA/Asia and/or the USAID/CAR Mission Environmental Officer prior to the start of the activity implementation.

The Implementer will have the following documentation and reporting requirements associated with the environmental compliance:

- Annual Work Plans will have a section on the planned activities related to environmental compliance.
- EM and FEMMP, EALs, EDD reports and EMMPs as described above will be developed by the Implementer and approved by USAID prior to the launch of each activity having an adverse impact on physical and natural environment including small grants.
- Progress Reports will have a section on the status of activities related to environmental compliance and results, including project summaries along with environmental impacts, success or failure of mitigation measures being implemented, results of environmental monitoring, and any major modifications/revisions to the project. If the activities implemented do not have any negative impact on the environment, this should be documented as well.

- For activities having adverse environmental impact, progress reports should include Environmental Review Reports in form of EALs for each activity and affected site (including site specific EMMPs and Monitoring Plans at the outset of the activity and upon activity completion).
- Implementer's annual report will include an annex containing a table indicating the title, date of award, and category of each grant activity, and status of mitigation measures and monitoring results, when applicable.
- Final Report will have a section that will summarize program's activities related to environmental compliance and will describe results, including information on any positive or negative environmental effects of program activities.
- Grant specific Mitigation and Monitoring Reports will be submitted to USAID at the completion of each relevant activity at every affected project site, and not on an annual basis. Reporting will include photographic documentation and site visit reports which fully document that all proposed mitigation procedures were followed throughout implementation of the subject work including quantification of mitigation. All such reports and documentation will be submitted to the Agreement/ Contracting Officer's Technical Representative (AOTR/COTR) and Mission Environmental Officer (MEO).

### **Limitations of the IEE**

This IEE does not cover activities involving:

- Assistance for the procurement (including payment in kind, donations, guarantees of credit) or use (including handling, transport, fuel for transport, storage, mixing, loading, application, clean-up of spray equipment, and disposal) of pesticides or activities involving procurement, transport, use, storage, or disposal of toxic materials. Pesticides cover all insecticides, fungicides, rodenticides, etc. covered under FIFRA - 'Federal Insecticide, Fungicide, and Rodenticide Act'. Note that the activities affected cannot go forward until a Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP) is approved by the Bureau Environmental Officer.
- Activities involving support to wood processing, agro-processing, industrial enterprises, and regulatory permitting.
- Procurement or use of genetically modified organisms (GMOs).
- DCA or GDA programs.
- Procurement or use of Asbestos Containing Materials (ACM) (i.e. piping, roofing, etc), Polychlorinated Biphenyls (PCB) or other toxic/hazardous materials prohibited by US EPA as provided at: <http://www.epa.gov/asbestos> and/or under international environmental agreements and conventions, e.g. Stockholm Convention on Persistent Organic Pollutants as provided at: <http://chm.pops.int>.

Any of these actions would require an amendment to the IEE duly approved by the ANE BEO.

### **Revisions**

Pursuant to 22 CFR 216.3(a)(9), if new information becomes available which indicates that activities to be funded by the Project might be "major" and the Program's effect

"significant", this determination will be reviewed and revised by the originator of the project and submitted to the Asia Bureau Environmental Officer for approval and, if appropriate, an environmental assessment will be prepared.

**USAID APPROVAL OF ENVIRONMENTAL ACTION(S) RECOMMENDED:**

**Clearance:**

Acting Mission Director: \_\_\_\_\_ Date: \_\_\_\_\_  
*Glenn Anders*

EDO office Director: \_\_\_\_\_ Date: \_\_\_\_\_  
*Geoff Minott*

Mission Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_  
*Nina Kavetskaya*

Regional Environmental Advisor  
for Asia and OAPA: concurring by e-mail Date: 7/18/2011  
*Andrei Barannik*

**Concurrence:**

ANE Bureau Environmental  
Officer \_\_\_\_\_ Date: \_\_\_\_\_  
*Robert Macleod*

Approved:

Disapproved:

## INITIAL ENVIRONMENTAL EXAMINATION

<b>Objective:</b>	Objective 4/ Economic Growth
<b>Country/Region:</b>	Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Afghanistan
<b>Program Areas:</b>	1. Macroeconomic Foundation for Growth 2. Trade and Investment 3. Financial Sector 6. Private Sector Competitiveness
<b>Program Elements:</b>	1.1 Fiscal Policy 2.1 Trade and Investment Enabling Environment 3.1 Financial Sector Enabling Environment 6.1 Business Enabling Environment

### 1. BACKGROUND AND ACTIVITY DESCRIPTION

The following activity descriptions cover all activities to be implemented during FY2012 - FY2019, under the EG IQC:

#### **PROJECT GOALS, OBJECTIVES AND DELIVERABLES – EG MACRO**

The objective of EG MACRO is to facilitate USAID/CAR's continued engagement in macroeconomic reform, improvement of the business environment and public sector capacity, and trade facilitation through a structured procurement process. EG MACRO will build on previous USAID-funded efforts in addressing these areas.

USAID/CAR/EG's primary program objectives focus on devising and implementing robust activities that promote real economic growth, reduce poverty, graduate transitional countries from aid to trade, promote open competitive markets, develop the private sector, and mobilize private financing sources to supplement and eventually replace development assistance. These activities should seek to enhance regional economic integration where it is mutually beneficial to Central Asian nations.

Macroeconomic refers to the complex of government strategies, objectives, and actions intended to affect aggregate or sectoral economic variables.

EG MACRO will provide assistance, advice and leadership in the broad technical areas of:

- (a) Legal and institutional reform
- (b) Financial sector and macro-economic reform and expansion
- (c) Economic policy and institutions
- (d) Trade and investment
- (e) Stabilization

- 1) Legal and institutional reform, comprising:
  - a) Competition policy

- i) Policy, laws, institutions, enforcement
    - ii) Control of and enforcement against private anti-competitive behavior
    - iii) Antitrust provisions, monopolies, cartel issues, other general restrictions on competition
  - b) Commercial code(s)
    - i) Company law, registries
    - ii) New business entry - policy and process
    - iii) Incentives for small and micro-enterprise
  - c) Intellectual property
    - i) Protection and patent processes
    - ii) Copyrights, trademarks, enforcement
  - d) Contracts enforcement, dispute resolution methods
    - i) Petition rights and private rights to assert complaints seeking enforceable redress
    - ii) Arbitration and mediation
  - e) Transparency of public sector procedure and process
  - f) Bankruptcy and methods to allow redeployment of business assets in alternative functions
- 2) Financial sector reform and expansion, comprising:
- a) Capital and credit market sources of funds for business growth and municipal finance availabilities
  - b) Foreign direct investment flows
  - c) Advice to development credit programs supplied by international donors
  - d) Technical assistance and support to other financial sector functions and institutions that support entrepreneurial drive, initiative, and risk-taking such as liquidity funds, investment funds, "enterprise" funds, seed-level venture capital funds and structures, and alternative financing media for small, medium and micro-enterprises
  - e) Pension funds and insurance funds
  - f) Technical assistance to monetary and tax policies that affect business growth
  - g) Tracking funds and money flows for financial system integrity and security
  - h) Alternative financial instruments, such as convertible bonds, asset-backed securities, basic hedge options, and other risk management instruments
- 3) Economic policy and institutions development comprising:
- a) Reform of policies, regulations, and support institutions in order to identify and address barriers to business formation, operation, growth, change, and dissolution
  - b) Monetary policy, banking and central bank operation
  - c) Fiscal policy, and tax and customs administration
  - d) Trade and exchange rate policy
  - e) National income accounting and strategic development planning
  - f) Macroeconomic policy coordination/integration
  - g) Poverty reduction programs
  - h) Labor analysis and policy
  - i) Sectoral policy analysis

- j) Technical assistance regarding the privatization of public sector functions and infrastructure to increase efficiency
  - k) Transparency of government procedures and processes
  - l) Communication and linkage between government entities and between government entities and the private sector
  - m) Capacity Building for State Officials – Human Institutional Capacity Development
  - n) Development of think tanks and NGOS focused on government policies and transparency
- 4) Trade and investment, comprising:
- a) Trade and investment related laws and infrastructure
  - b) Intra-country, regional, and international trade
  - c) WTO accession assistance
  - d) Customs capacity building
  - f) Foreign direct investment
  - g) Absorption and exploitation of foreign technology
  - h) Domestic investment expansion incentives
  - i) Incentives for private risk-taking and innovation
  - j) Risk sharing and risk-mitigation methods
  - k) Regional trade associations
- 5) Stabilization
- a) Crisis assistance to assist Central Asian Republics in dealing with shocks that decrease economic activity and require rapid, corrective intervention

**Deliverables:**

The following represents general categories of illustrative deliverables that The USAID CAR/EG IQC could provide under its MACRO component:

1. Strategies, assessments, and analyses for macroeconomic growth, institutional capacity, regulatory reform, and other support functions that support private-sector-led growth,
2. Business environment changes that provide positive support for private sector led trade, investment, and entrepreneurial initiative,
3. Changes in fiscal and monetary regime conditions that increase the flow of funds to the private sector for business expansion, increased trade, and investment,
4. Institutional development and regulatory policies that support new business formation and operation, trade, and investment,
5. Government, private business, and higher education partnerships
6. Fostering access to and active membership in regional and international organizations
7. Assessing macroeconomic context of CARs and designing strategies and implementing programs of technical assistance to address that context
8. Knowledge management and dissemination activities, such as websites, databases, publications and other documentation,

9. Initiatives which, in conjunction with (1) to (8) above, assist in poverty reduction at the national, sub-national, and sector levels and increase the participation of the poor in the national political economy,
10. As a result of a sudden shift in political power a new government requires quick and varied technical assistance with various economic policy questions.

**Currently planned MACRO IQC task orders:**

*MACROECONOMIC PROJECT IN KAZAKHSTAN AND TURKMENISTAN*

LOP: FY2012 – FY2013 with \$5mln. in Kazakhstan

FY2012 – FY2016 with \$8mln. in Turkmenistan

Macroeconomic Project (MEP) is to provide assistance in Kazakhstan and Turkmenistan to strengthen the sustainable institutional capacity of government bodies and improve regulatory oversight to provide a foundation for competitive private sector development, investment, and trade. It includes components to strengthen institutional capacity for fiscal management and development of economic strategies and policies on public finance, public audit, financial reporting, budget and microeconomic policy and 2) to strengthen regulatory and oversight capacity and legislation to promote private sector development and stimulate investment in financial sector, strengthen business regulatory environment and private sector competitiveness, licensing and permitting system reform, state inspections reform, reforms measured by international indices and monitoring, legal drafting and advocacy. It is also planned to help diverse counterparts adopt and/or implement policies, regulations, processes, and laws that facilitate trade.

*REGIONAL ECONOMIC INTEGRATION*

LOP: FY2011-FY2013

LOP BUDGET: \$2.3mln

COUNTRIES: Central Asian Republics + Afghanistan

The project will be committed to improve the environment for cross-border trade among Central Asian countries, Afghanistan and larger trading partners of these countries such as China and Russia. The activities will aim to help export partnership groups developed under legacy projects, assist Kazakhstan and Tajikistan in WTO accession, and related trade facilitation and trade policy development activities throughout Central Asia, improve transport corridor performance, evaluate export potential of Central Asian firms, test the barriers to export through facilitating sales to the US Department of Defense for use in Afghanistan. The illustrative results of this project can be formed export partnership groups, or these groups' capability increased. Focus groups will be based on interest in textiles, organic agricultural products and exporting them to Afghanistan.

*ECONOMIC POLICY REFORM PROJECT IN KYRGYZSTAN*

LOP: FY2011 – FY2014

LOP BUDGET: \$10mln.

The project is designed to work on economic reforms to improve trade and investment climate, fiscal reforms to stabilize and support growth of Kyrgyzstan's economy and governance reforms to support economic policy and fiscal reforms. The project also plans to work with the institutions, and through employing both formal and informal

human and institutional capacity mechanisms, build in-country capacity for economic policy reforms concerning the development of strategic priorities, analysis of best approaches to reform. The project will be also integrating a human and institutional capacity development approach with a focus on select government agencies responsible for the economic policy reform formulation and implementation, business associations and other local counterparts. Subcontracting with local organizations will be one of the approaches the project will be using to buy services or procure limited commodities. These may include office computer, and other electronic equipment, office furniture, means of communication, IT software, and/or materials for office renovation.

#### **PROJECT GOALS, OBJECTIVES AND DELIVERABLES – EG MICRO**

The objective of the EG MICRO IQC is to remove impediments to entrepreneurial initiative, output, productivity, and trade with a focus on private enterprise growth and small and medium sized enterprises as well as micro-enterprise development and expansion. Microeconomics refers to the branch of economics that analyzes the market behavior of individual consumers and firms in an attempt to understand the decision-making process of firms and households. It is concerned with the interaction between individual buyers and sellers and the factors that influence the choices made by buyers and sellers. In particular, microeconomics focuses on patterns of supply and demand and the determination of price and output in individual markets.

The Contractor shall undertake targeted interventions to address these constraints and to create conditions for sustained productivity and growth at the enterprise, value chain, industry, and sector levels. Illustrative activities include:

The EG MICRO will provide technical assistance and leadership in the areas of:

- (a) Small and medium enterprise development
- (b) Microenterprise development
- (c) Support to agribusiness and agri-producers
- (d) Stabilization – crisis assistance

1) Small and medium enterprise development initiatives that address:

- a) Support for entrepreneurship and risk-taking
- b) Incentives schemes for risk-taking behavior in pursuit of profit
  - i) Access to risk-sharing/mitigation vehicles
  - ii) Business insurance
  - iii) Appraisal and valuation
  - iv) Business strategy and market tactics
  - v) Organization management, finance, marketing, and operations
- c) Governance
- d) Linkages to buyers and/or suppliers
- e) Value chain strengthening and optimizing
- f) Innovation in product and service markets
- g) Integration with local, regional and global markets
- h) Linkages to foreign brokers, buyers, and suppliers
- i) New business formation

- i) Facilitating new entry
    - ii) Decreasing time, cost, complexity of operations and access to services
  - j) Business support and promotion services
  - k) Increased access to improved factor conditions:
    - i) Seed capital, later-stage equity, debt financing
    - ii) Reduction in labor rigidity
    - iii) Land markets formalized
  - l) Professional education and certification
  - m) Transition from informal to formal operations
  - n) Domestic and foreign business promotion and support organizations
  - o) Improving institutional support
    - ii) Association development
    - iii) Other strategic working groups
- 2) Micro-enterprise initiatives that address:
  - a) Fostering entrepreneurial initiative
  - b) New business formation
  - c) Institutional support development
  - d) Business development services
  - e) Private sector driven policy and regulatory reform
  - f) Training
  - g) Development of market linkages
  - h) Assessments, evaluations, and analyses
  - i) Credit and other financial support
- 3) Support to agribusiness and agriproducers
  - a) Alleviation of constraints to agricultural sector growth
    - i) Increasing market access
    - ii) Advice on new product and agro-services development
    - iii) Targeting input marketing constraints
    - iv) Market information systems and firm/cluster networking
    - v) Facilitating transactions
  - b) Agribusiness enterprise development
    - i) Private sector driven regulatory reform for agribusiness enterprise
    - ii) Rural infrastructure assessments
    - iii) Land reform assessment
    - iv) Trade and investment development
    - v) Institutional support expansion
    - vi) Value chain analyses
    - vii) identification of financial support mechanisms
  - c) Agrifinancing
  - d) Cooperative development organizations and other member-owned businesses
  - e) Modernizing on-farm technologies
  - f) Crop diversification
- 4) Stabilization

- a) Crisis assistance to assist the Central Asian Republics in dealing with shocks that decrease economic activity and require rapid, corrective intervention.

**Deliverables:**

The following represents general categories of illustrative deliverables that The USAID CAR/EG IQC could provide under its MICRO component:

1. Strategies, assessments, and analyses for micro-economic productivity, institutional capacity and other functions that support private-sector-led growth.
2. Competitiveness and business productivity initiatives at the national, sub-national, regional, value chain, cluster, and enterprise levels.
3. Trade expansion and promotion efforts at the national, regional, and global levels, and facilitation of trade organization membership.
4. Public/private dialog and partnerships on business, trade, investment, entrepreneurship, and productivity.
5. Private investment encouragement initiatives at the regional, national, sub-national, sector, and firm levels.
6. Knowledge management and dissemination activities.
7. Initiatives that expand SMEs capacity to meet local content requirements.
8. Initiatives that seek to increase SMEs use of new technology and ability to innovate.
9. Initiatives that provide technical assistance to government programs to promote SME development.
10. Quick responses to rebuild the economy of a town, city or region devastated by ethnic violence or natural disaster.

## **2. COUNTRY AND ENVIRONMENTAL INFORMATION (BASELINE INFORMATION)**

The five Central Asian Republics together have a combined population of 55 million, a land mass greater than Western Europe and a significant share of the world's oil and gas reserves. Surrounded by Russia, China, Iran and Afghanistan, they are adjacent to and affected by some of the contemporary world's most pressing ideological, political and economic struggles. These landlocked nations have a history of flux and conquest, with historically limited access to world markets and ideas. The region's circumstances and prospects still, long after the breakup of the USSR, appear fluid and uncertain. Other than in the hydrocarbon fuels industry in Kazakhstan, the countries of Central Asia suffer from limited investment and isolation from major world markets. Despite potentially vast energy assets and other resources, the Central Asian countries are generally very poor and there is considerable poverty and income inequality.

Although since 2000, the economies of Central Asia have moved into new stages in their broader transition to market economies within the global system. During this period, significant differences in performance have appeared as a result of varying degrees of effectiveness in establishing and maintaining macroeconomic stability and of differing resource endowments and country-specific political developments. Although each of the

Central Asian Republics (CARs) has achieved the basic level of macroeconomic stability required as the foundation for sustained economic growth, each still faces significant challenges in order to ensure efficient and flexible institutional processes to manage economic policy in ways that will promote competitive private sector development and stimulate investment. While specific issues and details differ by country, each has need for strengthened institutional capacity in the government agencies, regulatory bodies and legislature to develop and implement more effective policies related to generating revenue and managing expenditure, to ensuring financial stability, to promoting and regulating competition, and to strengthening effective fiscal decentralization so that they can enhance enterprise development and competitiveness.

Also the improved performance of transport corridors will help spur economic growth and align the economic interests of Central Asia and Afghanistan. Sustained economic development is critical to ending conflict in Afghanistan. As a landlocked country with undeveloped extractive industries and few sources of inputs, Afghanistan can only achieve sustained economic growth through increased trade and transport linkages with its neighbors. Central Asia can emerge as the commercial lifeline for Afghanistan, as a natural hub and transit point for roads, railroads, pipelines and electric lines. For this to happen, Central Asian firms need to trade increasingly across borders. Increased cross-border trade will also spur development of small and medium-sized businesses (SME) which is critical if Central Asian Republics are to diversify their economies.

### **3. EVALUATION OF PROGRAM ISSUES WITH RESPECT TO ENVIRONMENTAL IMPACT POTENTIAL**

As described in Table 2, Section 1 above, all of the specific activities consisting of technical assistance, training, analysis, policy advice and information sharing, are not anticipated to pose any environmental risks and qualify for a *Categorical Exclusion*.

Some projects will purchase office equipment, electric and electronic equipment, and commodities (Section II of Table 2) for which no significant adverse effect is anticipated, and therefore Mitigation and Monitoring Plan is not required provided that normal good practices, engineering methods and standard instructions are followed in their procurement, storage, transportation, installation and use. However, these activities are qualified as *Negatively Determinated with conditions*, because: 1) the implementer is required to ensure that equipment, commodities, and materials are procured from certified retailers; 2) environmental safety and quality certificates conforming with national and/or international standards are available; 3) equipment and materials are used in an environmentally sound and safe manner, properly disposed of when applicable at the end of their useful life in a manner consistent with best management practices according to USG, European Union or equivalent standards. Electronic devices, including audio-visual components (televisions, VCRs, stereo equipment), mobile phones and other hand-held devices, and computer components, contain valuable elements and substances, are suitable for reclamation, including lead, copper, and gold, if treated properly; however if not treated properly they are a major source of toxins and carcinogens. They also contain a plethora of toxic substances, such as dioxins, PCBs, cadmium, chromium,

radioactive isotopes, and mercury. Additionally, the processing required to reclaim the precious substances (including incineration and acid treatments) release, generate and synthesize further toxic by-products.

Facilitating finances, financing facilities, such as revolving funds, capitalization of MFIs, guarantee programs, equity, and other forms of financing require that the Implementer review the adequacy of the environmental capabilities of the financial institutions to be involved, therefore these activities are also qualified as a ***Negative Determination with conditions***. Implementer will ensure that appropriate environmental standards are developed (e.g. Environmental Review Manual) and followed by the financial institutions in issuing loans with the use of USAID-supported guarantee or capital funding (Table 2, Section II b).

Activities such as renovations or small-scale infrastructure qualify for a ***Negative Determination with conditions*** and require screening, monitoring, evaluation, and reporting to USAID as described in Table 2, Section III a) and Implementer Procedures.

The development of strategies, policies, action plans, economic prognoses, regulatory and other documents implementation of which may have negative environmental impact, are mandatory for environmental impact assessment. They qualify as a Negatively Determinated with a condition that Implementer should ensure that SOW for related procurements is reviewed and concurred to by the MEO (Table 2, Section III b).

#### **4. RECOMMENDED MITIGATION MEASURES (INCLUDING SCREENING, MONITORING AND EVALUATION)**

For the limited procurements of electric and electronic equipment the implementer will include a requirement in the equipment transfer letter that a recipient will use the equipment in an environmentally sound and safe manner and will properly dispose it of at the end of its useful life in a manner consistent with best management practices according to European Union, USA, or equivalent standards. In order to provide information on best management practices to the recipient, the implementer will: 1) approach the vendor, who might be an authorized dealer for an equipment producing company regarding their corporate policies on how to collect & where to dispose/recycle certain products and these should be consistent with the aforementioned standards and directives; 2) if a vendor does not have capacity to collect and dispose the equipment, then the implementer will approach relevant national authorities, (i.e. the Ministry of Environment) to seek their guidance on how this can be accomplished in accordance with the law. The implementer is also required to ascertain where the certified waste recycling/processing companies with capacity to deal with certain types of equipment may be found in the country as well.

Small scale infrastructure and/or rehabilitation are likely and have the potential for adverse impact on the natural or physical environment. For each of these types of activities the implementer will conduct an Environmental Due Diligence (EDD) review

to document existing environmental concerns and foreseeable environmental effects resulting from the activity and develop an Environmental Manual and Framework Environmental Mitigation and Monitoring Plan (FEMMP). This framework FEMMP will then be approved by the MEO, in consultation with the Asia Regional Environmental Advisor (REA), adapted to a specific site before the activity implementation, and incorporated into the project design. The Standard Conditions List in Annex 3 and Table 2 of this IEE may be used as a guide in developing of the FEMMP.

**Table 1: Illustrative Environmental Effects and Mitigation Measures for Potential Activities**

Activities	Effect on Natural or Physical Environment	Illustrative Mitigation Measures and related links
Procurement of computers, office and other equipment, commodities and materials	<p>Insignificant adverse effect.</p> <p>Obsolete computers are a valuable source for secondary raw materials, if treated properly. However if not treated properly they are a major source of toxic and carcinogenic substances, such as dioxins, Polychlorinated Byphenils (PCBs), cadmium, chromium, radioactive isotopes, and mercury.</p>	<p>Implementer should provide evidence that equipment and materials are procured from certified retailers; environmental safety and quality certificates conforming with national and/or international standards are available; equipment and materials are used in an environmentally sound and safe manner.</p> <p>Implementer will include a requirement in the equipment transfer letter that a recipient will use the equipment in an environmentally sound and safe manner and will properly dispose it of at the end of its useful life in a manner consistent with best management practices according to European Union, USA, or equivalent standards..</p>
Small-scale Construction Activities (Rehabilitation/renovation of community centers, schools, or the like)	<p>Potential for significant adverse effect of one or more activities.</p> <p>Improperly conducted small construction activities may result in a wide variety of negative environmental and cultural effects. Site selection, particularly for new construction, is sensitive and may result in loss of places with historical and</p>	<p>Sites that are susceptible to negative impacts should be avoided, and alternative sites should be identified. If that is not possible, there are other possibilities for mitigating the social and environmental damage from small construction activities.</p> <ul style="list-style-type: none"> <li>- Develop and implement appropriate human health and worker safety measures during construction.</li> <li>- Backfill and/or restore borrow areas and quarries before abandonment unless alternative uses for those sites</li> </ul>

	<p>cultural importance, damage to sources of water, damage to forests, and damage to agricultural lands. Improper site selection may also place buildings – even merely rehabilitated structures – in flood zones or locations at particular risk for landslides.</p> <p>During construction, noise, dust, and other disruption to normal activities are possible. Construction waste may also pollute water ways and fields or deplete local fauna. Construction materials may be hazardous or sourced through environmental destructive extraction methods.</p>	<p>are planned</p> <ul style="list-style-type: none"> <li>- Control runoff into borrow pits</li> <li>- Recover and replant topsoil and plants as practicable.</li> <li>- Avoid pollution of waterways with stockpiled construction materials.</li> <li>- Use lead-free paint, primers, varnishes and stains.</li> <li>- Minimize the use of solvent-based paints, or replace with water-based materials.</li> </ul> <p>See more recommendations in Attachment 3 and other sources as recommended in section “Implementer procedures” .</p>
<p>Small processing and canning of food and agriculture products</p>	<p>Improper management of food processing facilities can cause several types of environmental damage.</p> <p>In small-scale agriculture and food processing, disposal of industrial waste, additives, and water without proper drainage and handling will result in water logs and odors. Poor hygiene and sanitation requirements during processing may pose a great risk to human health. Broken jars unless disposed in special containers may present health and safety risks and pollute the soil.</p>	<ul style="list-style-type: none"> <li>-Ensure that water source for small processing facility is reliable and meets national water quality requirements</li> <li>- Site small dumps or waste treatment sites far away from surface or groundwater water sources.</li> <li>- Separate harmful chemical waste from organic waste, and use more care in handling chemical waste. Dispose of chemical waste in a way that prevents chemicals from leaching into ground or surface waters (such as clay- or concrete-lined pits). Check with an environmental expert to confirm the chosen disposal method is safe for the chemicals being disposed of.</li> <li>- If the enterprise stores waste temporarily before transporting it to a treatment facility or landfill, make sure it is not leaking into the ground.</li> </ul>

<p>- Water pollution: Harmful wastes disposed of in pits or waterways can leach into groundwater and affect water quality for workers and the community. Contamination of water sources may not occur immediately, but can increase or accumulate over time, eventually damaging to product quality and affecting workers' health.</p> <p>- Working conditions: 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.</p> <p>- Spoilage: Certain structural features of the food-processing site may lead to spoilage or contamination of the products. Such site or building features include inadequate drainage or a lack of screens to keep out insects/rodents. Increased spoilage causes more waste and less profitability, while contamination may result in health problems for consumers.</p> <p>- Solid waste: Food processing creates substantial amounts of</p>	<p>- Maintain safety equipment and reinforce safety training. Safety measures may already be in place, but workers should be reminded often; designate one person as the safety trainer and have that person train others. Check existing safety equipment regularly, and replace elements like dust filters frequently.</p> <p>- Create a prevention strategy. Sometimes small changes such as buying a face mask or rubber gloves can dramatically reduce incidences of harm to workers. Find ways of preventing accidents.</p> <p>- Find ways of reducing harmful byproducts. For example, clean the floors in between production cycles to get rid of excess dust, or install drip trays to catch acidic fruit juice.</p> <p>- Ensure that the building structure is secure not only from people but also from animals. Screens should be placed over drains and windows to keep out disease-carrying rodents and flies.</p> <p>- Storage areas should be well-ventilated and large enough so that excessive heat and moisture do not spoil fruits and vegetables.</p> <p>- Re-use organic waste. Some organic waste such as vegetable peelings can be used as animal fodder; other waste, such as the fiber from palm kernel husks, can be used as fuel.</p> <p>- Modify waste disposal to facilitate faster decomposition/breakdown of organic material. Add layers of dirt and dry organic material to waste pits, or spread waste over large areas of land. This type of composting and "land spreading" can speed up decomposition and quickly lowers waste volume. Ensure, however, that this material does not attract disease-carrying vectors including birds,</p>
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	<p>organic and inorganic wastes. This can lead to increased costs for supplies, labor and sometimes fees for waste disposal. In addition, high volumes of burdensome waste, whether placed in a landfill or treated and disposed of, may place a serious strain on limited land resources.</p> <p>- Poorly maintained machinery: Machinery that leaks chemicals or fuel is wasting energy, can contaminate water supplies and may threaten workers' health.</p>	<p>rodents and insects.</p> <ul style="list-style-type: none"> <li>- Minimize wastes by improving production processes. Identify and change elements of production that may be inefficient or produce excess waste.</li> <li>- Schedule regular machine maintenance checks and repairs. Ensure that workers have up-to-date training in operation and maintenance. Do not wait until machinery is broken before checking it; leaks can occur long before serious equipment breakdown and may be costing the business money. If possible and cost-effective, replace faulty machinery with more efficient machinery.</li> <li>- If machinery is difficult to access, then monitor wastes or emissions to detect leaks. For example, check for puddles underneath machinery or chemical/fuel smells.</li> <li>- Use wood shavings, drop cloths and/or oil-water separators to catch spills and leaks.</li> <li>- If the business is disposing of organic and chemical wastes separately, ensure that chemical or fuel waste does not contaminate the organic waste.</li> <li>- If it is not cost-effective to replace or to repair machinery, make sure that harmful effects are minimized. Increase ventilation around any machinery that has high gas or chemical emissions.</li> </ul> <p>More measures are available in sources as referenced to in Section Implementer Procedures and in the Annex 3.</p>
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**5. SUMMARY OF FINDINGS.**

**a) Recommended Action: *Categorical Exclusion* (90% of funding)**

Pursuant to 22 CFR 216.2(c)(2)(i), the originator of the activities has determined that all of Activities consist of types of interventions entirely within the categories listed in paragraph (c)(2), “Categorical Exclusions,” of Section 216.2, “Applicability of Procedures,” of Title 22 CFR Part 216, “AID Environmental Procedures”, and therefore are categorically excluded from any further environmental review requirements. The originator of the proposed action has further determined that the proposed activities are fully within the following classes of actions:

- e. Education, technical assistance, or training programs except to the extent such program includes activities directly affecting the environment (such as construction of facilities, etc.) [22 CFR 216.2(c)(2)(i)];
- f. Analyses, studies, academic or research workshops and meetings. [22 CFR 216.2(c)(2)(iii)];
- g. Document and information transfers. [22 CFR 216.2(c)(2)(v)]; and
- h. Studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment (such as construction of facilities, etc.) [22 CFR 216.2(c)(2)(xiv)].

**b)Recommended Action: *Negative Determination with conditions*** (5% of funding) For activities as specified in Table 2 Section III. All these activities could have a potential for moderate adverse impact on the natural or physical environment. For each of these types of activities the implementer will: 1) prepare Environmental Due Diligence (EDD) review and based on its findings will document in Environmental Review and Assessment Checklist (EAL) existing environmental concerns and foreseeable environmental effects resulting from the activity; and 2) develop an Environmental Manual (EM) and Framework Environmental Mitigation and Monitoring Plan (FEMMP) when applicable. These EM and FEMMP will then be approved by the MEO, in consultation with the Regional Environmental Advisor for Asia (REA/Asia), adapted to a specific site before the activity implementation, and incorporated into the project design. The Standard Conditions List in Annex 3 and Table 2 of this IEE may be used as a guide in developing of FEMMP.

**c)Recommended Action: *Negative Determination with conditions*** (5% of funding). For the possible limited procurement of commodities, materials and equipment, including electric and electronic equipment (computers, , telephones etc.) no special mitigation measures needed; normal good practices will be used. The proposed action required is that the Implementer should provide evidence that equipment is procured from certified retailers; environmental safety and quality certificates conforming with national and/or international standards are available; recipient of the equipment is following all applicable national and international laws to ensure that it’s used in an environmentally sound and safe manner, and properly disposed of (when applicable) at the end of their useful life in a manner consistent with best management practices according to USG, European Union or equivalent standards.

### **Implementer Procedures:**

- All program activities will seek to raise environmental awareness, promote regional and national environmentally and socially sustainable development, biodiversity conservation, adaptation to climate change, foster the culture of environmental compliance and governance, in accordance with The UNECE Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters with reference to it:  
<http://www.unece.org/env/pp/welcome.html>
- The Implementer will include environment compliance considerations into all aspects of the program implementation and will promote and train local counterparts on environmental requirements and standards across all of the program's activities. Such proposed activities will be included into annual work plans, and results will be reported in annual reports.
- Each activity should be conducted in a manner consistent with good design and implementation practices described in USAID *Environmental Guidelines for Small-Scale Activities in Africa*, 2nd edition as provided at:  
<http://www.encapfrica.org/egssaa.htm>; *IFC Environmental, Health and Safety Guidelines* as provided at:  
<http://www.ifc.org/ifcext/sustainability.nsf/Content/EnvironmentalGuidelines>, and the *World Bank 1999 Pollution Prevention and Abatement Handbook (PPAH)* as provided at: [http://www-wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937&theSitePK=523679&menuPK=64187510&searchMenuPK=64187283&siteName=WDS&entityID=000094946\\_99040905052283](http://www-wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937&theSitePK=523679&menuPK=64187510&searchMenuPK=64187283&siteName=WDS&entityID=000094946_99040905052283) and [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1999/06/03/000094946\\_99040905052283/Rendered/PDF/multi0page](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1999/06/03/000094946_99040905052283/Rendered/PDF/multi0page); and Standard Conditions for Small-Scale Construction, Small-Scale Road Rehabilitation, Small-Scale Water and Wastewater Activities, and Small-Scale Irrigation Projects attached to this IEE.
- The Implementer will use the Environmental Review and Assessment Checklist (EAL) (Annex 1) and Leopold Matrix (Annex 2) as a main reporting document for each activity having an adverse environmental impact.
- Prior to the launch of each activity including small grants, the Implementer will conduct an Environmental Due Diligence (EDD) review as an inherent part of the EAL for each type/class of activities that may have a potential for moderate and high adverse environmental impact (e.g. small-scale construction; small road rehabilitation, rehabilitation of potable and irrigation facilities; etc) to document existing environmental concerns and foreseeable environmental effects resulting from such types of activities. If the EDD results in a finding of potential significant environmental impact, a Scoping Statement (SS) and Environmental Assessment (EA) will be done by the implementer prior to start of activities. Terms of Reference (TOR) for Scoping Statement and EA Report must be reviewed by MEO and approved by Asia BEO.
- Based on EDD results and mitigation measures from Environmental Guidelines for Small-scale Activities, IFC EHS Guidelines, World Bank PPAH, etc. as referenced above, implementer will develop Environmental Manual (EM) and Framework Environmental Mitigation and Monitoring Plan (FEMMP) for each type/class of

expected activities when applicable. EM will establish criteria for *eligibility, selection and screening* against potential environmental risk (low, moderate, and high). EM and FEMMP might be done per implementing partner (IP) or the whole program and then adapted as needed for different IPs. These documentation will then be approved by the MEO, in consultation with the Regional Environmental Advisor for Asia (REA/Asia), incorporated in project design and FEMMP will be adapted to a specific site prior to the activity implementation (EMMP).

- The implementer will have a qualified, MEO-approved environmental impact professional(s) (EIP) who will assess and recommend environmental actions to be taken by the program and will coordinate implementation of mitigation measures, monitoring, and reporting. EIP will conduct environmental reviews and will identify: 1) activity category in consultation with the MEO); 2) potential environmental impacts (based on EAL, EDD, Leopold Matrix, and his/her technical knowledge of the local, U.S., and international environmental standards, guidelines, requirements, and practices; and 3) mitigation and monitoring measures needed. Should EIP lack any special technical knowledge to identify any special environmental impact, the Implementer will consult with a specialist in the relevant area.
- Host country Environmental, Occupational Health and Safety (OHS) and other relevant laws and regulations, standards, norms and best practices for environmental protection and management will be followed in implementing the activities. Implementer will ensure compliance by its staff, subcontractors, and subgrantees with USAID regulations, policies, procedures and acceptable best practice as well as compliance with applicable international environmental obligations.
- For activities categorized as “potential risks” or “definite risks” of adverse environmental impact, the Implementer will be required to obtain a letter from the local or regional office for environmental protection stating that the office: a) has been contacted by the Implementer concerning the project activities; b) will maintain contact with the project; and c) will be aware of the potential environmental impacts of the project to help ensure that no detrimental impact will result from this project.
- For such activities prior to their implementation the Implementer will conduct public consultations and will seek concurrence from the national duly authorized environmental agency on FEMMPs and EMMPs.
- Monitoring will be conducted during the project (beginning with baseline conditions) to determine the environmental impact (positive and/or negative) of project activities. The Implementer shall use only qualified staff for overseeing the mitigation and monitoring work. Monitoring shall occur on an as-needed basis. The Implementer will ensure that the environmental procedures are implemented, potential impacts mitigated, and indirect and cumulative effects are considered for each activity. If negative environmental impacts are discovered through regular monitoring and evaluation of project activities, immediate actions will be taken to rectify the situation.

#### **Resource Allocation, Training and Reporting requirements:**

The contract with the Implementer will include a requirement to follow all recommendations of this IEE. The Implementer will be responsible for training his staff, grantees, subcontractors, and counterparts on the contract's environmental requirements and for ensuring their compliance with these requirements.

Implementer shall have sufficient permanent staff with expertise in an environmental field and compliance and resources to implement and report on the expected scope of environmental compliance work.

The Mission will provide for environmental training for the Implementer(s) EIP(s) by the REA/Asia and/or the USAID/CAR Mission Environmental Officer prior to the start of the activity implementation.

The Implementer will have the following documentation and reporting requirements associated with the environmental compliance:

- Annual Work Plans will have a section on the planned activities related to environmental compliance.
- EM and FEMMP, EALs, EDD reports and EMMPs as described above will be developed by the Implementer and approved by USAID prior to the launch of each activity having an adverse impact on physical and natural environment. Including small grants.
- Progress Reports will have a section on the status of activities related to environmental compliance and results, including project summaries along with environmental impacts, success or failure of mitigation measures being implemented, results of environmental monitoring, and any major modifications/revisions to the project. If the activities implemented do not have any negative impact on the environment, this should be documented as well.
- For activities having adverse environmental impact, progress reports should include Environmental Review Reports in form of EALs for each activity and affected site (including site specific EMMPs and Monitoring Plans at the outset of the activity and upon activity completion).
- Implementer's annual report will include an annex containing a table indicating the title, date of award, and category of each grant activity, and status of mitigation measures and monitoring results, when applicable.
- Final Report will have a section that will summarize program's activities related to environmental compliance and will describe results, including information on any positive or negative environmental effects of program activities.
- Grant specific Mitigation and Monitoring Reports will be submitted to USAID at the completion of each relevant activity at every affected project site, and not on an annual basis. Reporting will include photographic documentation and site visit reports which fully document that all proposed mitigation procedures were followed throughout implementation of the subject work including quantification of mitigation. All such reports and documentation will be submitted to the Agreement/ Contracting Officer's Technical Representative (AOTR/COTR) and Mission Environmental Officer (MEO).

### **Limitations of the IEE**

This IEE does not cover activities involving:

- Assistance for the procurement (including payment in kind, donations, guarantees of credit) or use (including handling, transport, fuel for transport, storage, mixing, loading, application, clean up of spray equipment, and disposal) of pesticides or activities involving procurement, transport, use, storage, or disposal of toxic materials. Pesticides cover all insecticides, fungicides, rodenticides, etc. covered under FIFRA - 'Federal Insecticide, Fungicide, and Rodenticide Act'. Note that the activities affected cannot go forward until a Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP) is approved by the Bureau Environmental Officer.
- Activities involving support to wood processing, agro-processing, industrial enterprises, and regulatory permitting.
- Procurement or use of genetically modified organisms (GMOs).
- DCA or GDA programs.
- Procurement or use of Asbestos Containing Materials (ACM) (i.e. piping, roofing, etc), Polychlorinated Biphenyls (PCB) or other toxic/hazardous materials prohibited by US EPA as provided at: <http://www.epa.gov/asbestos> and/or under international environmental agreements and conventions, e.g. Stockholm Convention on Persistent Organic Pollutants as provided at: <http://chm.pops.int>.

Any of these actions would require an amendment to the IEE duly approved by the ANE BEO.

### **Revisions**

Pursuant to 22 CFR 216.3(a)(9), if new information becomes available which indicates that activities to be funded by the Project might be "major" and the Program's effect "significant", this determination will be reviewed and revised by the originator of the project and submitted to the Asia Bureau Environmental Officer for approval and, if appropriate, an environmental assessment will be prepared.

**Annex 1**



**ENVIRONMENTAL REVIEW & ASSESSMENT CHECKLIST (ER Checklist)**

The purpose of this *Environmental Review and Assessment Checklist (ER Checklist)* is to determine whether the proposed action (scope of work) encompasses the potential for environmental pollution or concern and, if so, to determine the scope and extent of additional environmental evaluation, mitigation, and monitoring necessary to fulfill federal U.S. environmental requirements. The *ER Checklist* is intended to be used in conjunction with the Leopold Matrix by the Agreement/Contracting Officer’s Technical Representative (AOTR/COTR) to ensure that environmental consequences are taken into account by USAID and the host country.

**Date of Review:** \_\_\_\_\_ **DCN of triggering IEE:** \_\_\_\_\_  
**Name of reviewer:** *(must be qualified environmental professional approved by the MEO)*

**Name of Project/Activity:** \_\_\_\_\_  
**Type of Project/Activity:** \_\_\_\_\_

**Location:** *(Attach a location map as well as site photos in color)*

**Project/Activity Description:** *(Provide sufficient description and details for environmental impact analysis)*

**Baseline Environmental Conditions:** *(Provide site specific environmental conditions due to onsite & offsite sources details for impact analysis)*

**A. CHECKLIST FOR ENVIRONMENTAL CONSEQUENCES:** Check appropriate column as Yes (Y), Maybe (M), No (N) or Beneficial (B). Briefly explain Y, M and B checks in next Section, "Explanations". A "Y" response does not necessarily indicate a significant effect, but rather an issue that requires focused consideration.

Y. M. N or B

1. **Earth Resources**
  - a. grading, trenching, or excavation in cubic meters or hectare \_\_\_\_\_
  - b. geologic hazards (faults, landslides, liquefaction, un-engineered fill, etc.) \_\_\_\_\_
  - c. contaminated soils or ground water on the site \_\_\_\_\_
  - d. offsite overburden/waste disposal or borrow pits required in cubic meters or tons \_\_\_\_\_
  - e. loss of high-quality farmlands in hectares \_\_\_\_\_
  
2. **Agricultural and Agrochemical**
  - a. impacts of inputs such as seeds and fertilizers \_\_\_\_\_
  - b. impact of production process on human health and environment \_\_\_\_\_
  - c. other adverse impacts \_\_\_\_\_
  
3. **Industries**
  - a. impacts of run-off and run-on water \_\_\_\_\_
  - b. impact of farming such as intensification or extensification \_\_\_\_\_
  - c. impact of other factors \_\_\_\_\_
  
4. **Air Quality**
  - a. substantial increase in onsite air pollutant emissions (construction/operation) \_\_\_\_\_
  - b. violation of applicable air pollutant emissions or ambient concentration standards \_\_\_\_\_
  - c. substantial increase in vehicle traffic during construction or operation \_\_\_\_\_
  - d. Demolition or blasting for construction \_\_\_\_\_
  - e. substantial increase in odor during construction or operation \_\_\_\_\_
  - f. substantial alteration of microclimate \_\_\_\_\_
  
5. **Water Resources and Quality**
  - a. river, stream or lake onsite or within 30 meters of construction \_\_\_\_\_
  - b. withdrawals from or discharges to surface or ground water \_\_\_\_\_
  - c. excavation or placing of fill, removing gravel from, a river, stream or lake \_\_\_\_\_
  - d. onsite storage of liquid fuels or hazardous materials in bulk quantities \_\_\_\_\_
  
6. **Cultural Resources**
  - a. prehistoric, historic, or paleontological resources within 30 meters of construction \_\_\_\_\_
  - b. site/facility with unique cultural or ethnic values \_\_\_\_\_
  
7. **Biological Resources**
  - a. vegetation removal or construction in wetlands or riparian areas in hectare \_\_\_\_\_
  - b. use of pesticides/rodenticides, insecticides, or herbicides in hectare \_\_\_\_\_
  - c. Construction in or adjacent to a designated wildlife refuge \_\_\_\_\_
  
8. **Planning and Land Use**
  - a. potential conflict with adjacent land uses \_\_\_\_\_
  - b. non-compliance with existing codes, plans, permits or design factors \_\_\_\_\_
  - c. construction in national park or designated recreational area \_\_\_\_\_

- d. create substantially annoying source of light or glare \_\_\_\_\_
- e. relocation of >10 individuals for +6 months \_\_\_\_\_
- f. interrupt necessary utility or municipal service > 10 individuals for +6 months \_\_\_\_\_
- g. substantial loss of inefficient use of mineral or non-renewable resources \_\_\_\_\_
- h. increase existing noise levels >5 decibels for +3 months \_\_\_\_\_

**9. Traffic, Transportation and Circulation**

- a. increase vehicle trips >20% or cause substantial congestion \_\_\_\_\_
- b. design features cause or contribute to safety hazards \_\_\_\_\_
- c. inadequate access or emergency access for anticipated volume of people or traffic \_\_\_\_\_

**10. Hazards**

- a. substantially increase risk of fire, explosion, or hazardous chemical release \_\_\_\_\_
- b. bulk quantities of hazardous materials or fuels stored on site +3 months \_\_\_\_\_
- c. create or substantially contribute to human health hazard \_\_\_\_\_

**11. Other Issues (to be used for categories not captured under 1 through 10 above)**

- a. Substantial adverse impact \_\_\_\_\_
- b. Adverse impact \_\_\_\_\_
- c. Minimal impact \_\_\_\_\_

**B. EXPLANATION OF ENVIRONMENTAL CONSEQUENCES:** explain Y, M and B responses

**C. RECOMMENDED ACTION (Highlight Appropriate Action):**

1. The project has no potential for substantial adverse environmental effects. No further environmental review is required.
2. The project has little potential for substantial adverse environmental effects; however the recommended mitigation measures will be developed and incorporated in the project design and/or construction, operation and maintenance phases. No further environmental review is required.
3. The project has substantial but mitigatable adverse environmental effects and required measures to mitigate environmental effects. Mitigation and Monitoring (M&M) Plan must be developed and approved by the BEO and/or REO prior to implementation. M&M Plan is to be attached to the Scope of Work.
4. The project has potentially substantial adverse environmental effects, but requires more analysis to form a conclusion. **A Scoping Statement must be prepared and be submitted to the BEO for approval. Following BEO approval an Environmental Assessment (EA) will be conducted. Project may not be implemented until the BEO approves the final EA.**
5. The project has potentially substantial adverse environmental effects, and revisions to the project design or location or the development of new alternatives is required.
6. The project has substantial and unmitigable adverse environmental effects. Mitigation is insufficient to eliminate these effects and alternatives are not feasible. The project is not recommended for funding.

**D. IDENTIFIED SIGNIFICANT ENVIRONMENTAL IMPACTS** (including **physical, biological and social**), if any: (Use ER tools such as **Leopold Matrix** to identify significant environmental impacts)

**E. RECOMMENDED MITIGATION MEASURES** (includes **Public Participation in case of all types of community and infrastructure projects**):

**F. RECOMMENDED MONITORING MEASURES** (if any):

**APPROVAL:**

Implementer Project Director/COP: \_\_\_\_\_ Date: \_\_\_\_\_

USAID/ Project C/AOTR: \_\_\_\_\_ Date: \_\_\_\_\_

USAID/CAR Mission  
Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_

**COPY TO:**

ANE Bureau Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_

Project Component	Environmental component										PHYSICAL ENVIRONMENT										BIOLOGICAL ENVIRONMENT										SOCIAL ENVIRONMENT																																									
											Agricultural Land	Soil Erosion	Slope Stability	Energy/Mineral Resources	Surface Water Quantity	Surface Water Quality	Ground Water Quantity	Ground Water Quality	Air Quality	Noise	Aquatic Ecosystems	Wetland Ecosystems	Terrestrial Ecosystems	Endangered Species	Migratory Species	Beneficial Plants	Beneficial Animals	Pest Plants	Pest Animals	Disease Vectors	Public Health	Resource/Land Use	Distribution Systems	Employment	At Risk Population	Migrant Population	Community Stability	Cultural/Religious Values	Tourism/Recreation	Nutrition																																
PLANNING & DESIGN																																																																								
Construction																																																																								
Operation																																																																								

KEY: Beneficial: O - High; O - Medium; o - Low

Adverse: ■ - High; ■ - Medium; ■ - Low

## Annex 3

### **Standard Conditions for Small-Scale Construction**

*(May be used as one of the guidance documents to develop site specific Mitigation and Monitoring Plan, i.e., M&M Plan)*

Small-scale construction activities occur in association with a wide variety of development projects financed by USAID. Construction activities include demolition; site clearing; soil grading, leveling and compaction; excavation; pipe and equipment installation; and the erection of physical structures. These activities have the potential to result in significant adverse environmental impacts, but most of those impacts can be mitigated down to acceptable levels through the use of good construction management practices.

These standard conditions have been developed by USAID's Europe and Eurasia Bureau to ensure that small-scale construction activities do not result in significant adverse environmental impact. When adherence to these conditions is required as a condition of small-scale construction contracts, no significant adverse environmental impact is presumed to result from activity implementation. Project officers, CTOs, Mission Environmental Officers, Contract Officers and implementing organizations must nonetheless be aware that these standard conditions are generic in nature, and that additional potentially significant adverse environmental impacts may be associated with small-scale construction activities. **It is the responsibility of the individual USAID missions, and/or their implementing contractors and grantees, to monitor construction and to ensure that significant adverse environmental impacts do not result from these programs.**

For the purposes of this guidance, "small-scale" construction activities are defined here as those that cost less than \$100,000 per construction project. Because of the exceptionally diverse physical conditions under which Bureau construction activities take place, and the very broad kinds of construction that take place, the following standard conditions are to be followed "as practicable and appropriate."

#### Standard Conditions for Small-Scale Construction Projects

- Establish and adhere to construction timetables that minimize disruption to the normal activities of the construction area.
- Coordinate truck and other construction activity to minimize noise, traffic disruption and dust.
- Develop and implement appropriate human health and worker safety measures during construction.
- Post construction timetables and traffic diversion schedules at the project site.
- Where significant environmental impacts may occur, document and photograph pre-construction and post-construction conditions.
- Avoid subsidence and building stabilization problems through proper foundation excavation, fill placement and borrow pit management.
- Fill should avoid pockets of segregated materials, it should use well-graded materials, and it should be compacted to recognized standards.
- Backfill and/or restore borrow areas and quarries before abandonment unless alternative uses for those sites are planned.
- Control runoff into borrow pits.
- Provide temporary sanitation at the construction site.

- Recover and replant topsoil and plants as practicable.
- Set protocols for vehicle maintenance to control contamination by grease, oil and fuels.
- Install temporary erosion control and sediment retention measures when permanent ones either are not feasible or are delayed.
- Avoid pollution of waterways with stockpiled construction materials.
- Cover stockpiled construction materials, as practicable.
- Place solvents, lubricants, oils, and other semi-hazardous and hazardous liquids over a lined area with appropriate secondary containment in order to contain spillage. Test the integrity of bulk storage tanks and drums, and secure valves on oil and fuel supplies.
- Build appropriate containment structures around bulk storage tanks and materials stores to prevent spillage entering watercourses.
- Handle, store, use and process branded materials in accordance with manufacturer's instructions and recommendations.
- Take waste materials to appropriate, designated local disposal areas.
- Avoid the use of cement; paper; board; sealant and glazing formulations; piping; roofing material; or other materials containing asbestos.
- Do not use PCBs in electric transformers.
- Avoid sealant and glazing formulations that use lead as a drying agent.
- Use lead-free paint, primers, varnishes and stains..
- Minimize the use of solvent-based paints, or replace with water-based materials.
- Minimize burning of waste materials.
- Employ techniques to minimize dust and vapor emissions as practicable (e.g., road speed limits, air extraction equipment, scaffolding covers, road spray).
- Recycle wastewater to the extent practicable.
- Build tanks or other separators for silt-laden material prior to allowing significant outflow into watercourses.
- Build collection channels leading to oil and/or silt traps, particularly around areas used for vehicle washing or fuelling.
- Seal or remove abandoned drains to minimize water contamination.
- Segregate waste which can be salvaged, re-used or recycled.
- Introduce measures to control and minimize the volume of waste on site.
- Employ sensitive strategies with regard to trees, watercourses, plant or animal species or habitats, and important historical and archaeological features.
- As practicable, landscape construction sites in a way that is appropriate to local conditions.
- Minimize the disturbance of, and reduce the spread of, ground contaminants.
- Do not build structures in sensitive areas such as wetlands.
- If waste will be buried on site, avoid siting burial pits up-gradient from drinking water sources such as wells. Pits should be lined with impermeable material (e.g., clay or polyethylene).
- If waste will be buried on site, avoid siting waste pits where water tables are high or underlying geology makes contamination of groundwater likely. If no alternative site is available, ensure that pits are lined with impermeable material.
- Provide for the safe disposal of gray water from bathing and washing.

#### Additional Conditions to Minimize Impact of Parking Facility Construction

- Compact substrate materials appropriately.

- Where applicable, apply sealant at earliest possible time to limit runoff from unsealed asphalt.
- Provide adequate drainage for the surface area to be paved.
- Return unpaved areas to original or improved contours following construction.
- Re-vegetate areas where vegetation was removed or destroyed during construction.
- Provide vegetation strips within parking lot where possible, including shade trees.
- Retain tree(s) along parking facility and adjacent roadsides.

### ***Standard Conditions for Small-Scale Irrigation Projects***

USAID's Bureau for Europe and Eurasia finances, directly or indirectly, a range of small-scale irrigation projects. These include, inter alia, maintenance and rehabilitation of irrigation infrastructure, construction of weirs, improved water management, and improved irrigation system operations and management. Small-scale irrigation activities have the potential to result in significant adverse environmental impacts, but most of those impacts can be mitigated down to acceptable levels through the use of good siting, design, construction, operations and maintenance practices.

These standard conditions have been developed by USAID's Bureau for Europe and Eurasia (E&E) to ensure that small-scale irrigation activities financed by the Bureau do not result in significant adverse environmental impact. When adherence to these conditions is required as a condition of project implementation, no significant adverse environmental impact is presumed to result. Project Officers, CTOs, Mission Environmental Officers, Contract Officers and implementing organizations must nonetheless be aware that these standard conditions are generic in nature, and that additional potentially significant adverse environmental impacts may be associated with small-scale irrigation activities. ***It is the responsibility of the individual USAID missions, and/or their implementing contractors and grantees, to monitor irrigation activities and to ensure that significant adverse environmental impacts do not result.***

For the purposes of this guidance, "small-scale irrigation projects" are defined as activities that: (1) cost less than \$100,000 per individual project; (2) do not bring significant areas of currently unirrigated land under irrigation; (3) do not involve the construction of new dams, trunk canals, or river training works; and (4) do not involve rehabilitation of existing dams over fifty feet in height.

Because of the exceptionally diverse physical, biological and social environments in which Bureau irrigation projects take place, and the broad kinds of irrigation activities that are financed, these Standard Conditions are to be followed "as practicable and appropriate."

#### **Standard Conditions for Small-Scale Irrigation Projects**

##### ***IRRIGATION SYSTEM IMPROVEMENTS***

As a general rule, small-scale irrigation projects should be designed to achieve or promote some or all of the following objectives:

- Better water management, including better water use efficiency and lower water losses
- Better water quality
- Lower sediment loading
- Less erosion
- Less waterlogging and soil salinization
- Improved irrigation system operations and maintenance
- Healthier conditions for irrigation workers.

Specific actions that can be used to avoid or reduce adverse environmental impacts on small-scale irrigation projects are as follows:

### **Water Use Efficiency**

- Improve water control through good canal and weir design
- Keep canals, headworks, regulators, modules and water courses free of debris
- Add water storage capacity where water is seasonally scarce
- Improve water depth consistency through improved land leveling
- Ensure the suitability of crops to available water supply
- Monitor groundwater tables when irrigating from groundwater
- Train farmers and system operators in how to improve water use efficiency.

### **Water Loss**

- Use drip irrigation where practicable
- Use piping where practicable, instead of canals
- When using canals, employ design standards that limit evaporative loss
- Design canals that are relatively narrow and deep
- Cover open canals
- Line canals to limit water loss through percolation
- Reduce evapotranspiration by keeping canals clear of vegetation
- Monitor and repair leaks from cracked canal and containment structures, broken pipes, faulty valves and similar infrastructure
- Reduce evaporation on center pivot and sprinkler systems by irrigating at the coolest time of day
- Train farmers and system operators in how to reduce water loss.

### **Water Quality**

- Use design standards that lower sediment loads in irrigation water
- Identify and monitor water quality parameters with adverse crop and human health impacts
- Train farmers and system operators in how to improve water quality.

### **Erosion**

- Use terracing and similar techniques to reduce land surface erosion
- Plan for devices that can protect against scour where water scour potential is an issue (e.g., culverts, drops, chutes, control structures)
- Train farmers on how to reduce land and facility erosion.

### **Waterlogging and Salinization**

- Monitor groundwater levels and salinity
- Use sprinkler or drip irrigation systems where possible
- Improve system drainage
- Train farmers to recognize waterlogging and salinization problems.

### **Operations and Maintenance**

- As a rule, financing for irrigation infrastructure improvements should not be provided unless appropriate operations and maintenance (O&M) provisions are in place.

- Establish an appropriate maintenance schedule for inspection and reporting performance conditions.
- Periodically review system components to verify that they meet the original design criteria for efficient operations and uniform distribution of water.
- Where appropriate, prepare an O&M Manual before the irrigation system starts operations.
- O&M plans should address, *inter alia*, financial and system power issues.

### Human Health

- Understand what water-related disease vectors occur in association with the irrigation system, and design system improvements to reduce those vectors
- Don't use irrigation water as a potable water source
- Line canals and ditches
- Cover or pipe water where possible
- Prevent backwaters or slow-moving water where vegetation and disease vectors are more easily established
- Use application rates that avoid generating areas of standing water
- Keep canals and ditches free of weeds, sediment and snails
- Actively control disease vectors
- Train farmers and system operators to recognize and deal with system characteristics with the potential to adversely affect human health.

### Other Irrigation System Conditions

- Design canals to maintain appropriate flow velocities
- Plan for access of canals to facilitate cleaning, sediment removal and vector control
- Design appropriate canal crossing structures at appropriate intervals
- Plan for gates at the lower end of canals so they can be flushed to the nearest drain
- Do not use materials containing asbestos on USAID funded projects.
- Replace lead pipes and joints in delivery system.

### ***STANDARD CONSTRUCTION CONDITIONS***

- Establish and adhere to construction timetables that minimize disruption to the normal activities of the construction area.
- Post construction timetables and traffic diversion schedules at the project site
- Coordinate truck and other construction activity to minimize noise, traffic disruption and dust
- Where significant environmental impacts may occur, document and photograph pre-construction and post-construction conditions
- Fill should avoid pockets of segregated materials, it should use well-graded materials, and it should be compacted to recognized standards
- Install temporary erosion control and sediment retention measures when permanent ones either are not feasible or are delayed
- Use proper bedding materials for pipes, and backfill appropriately for the pipeline
- Use riprap (cobbled stone), gravel, or concrete as needed to prevent erosion of drainage structures at the outfall according to established standards
- Do not allow animals to drink directly from water sources

- In coastal areas, maintain withdrawals within safe yield limits to avoid salt water intrusion and well contamination
- Ensure that spilled water and rainwater drain to a soakway or equivalent structure.
- Re-vegetate areas damaged during construction. Do not remove erosion control measures until re-vegetation is completed.
- As practicable, landscape construction sites in a way that is appropriate to local conditions.

### ***EXCAVATION AND BORROW PITS***

- Use material from the required excavations first, since it produces a fairly durable aggregate for both surface stabilization and erosion control and is very cost effective.
- Place fences around borrow pit excavations, as necessary.
- Ensure excavation is accompanied by well-engineered drainage to control runoff into the pit.
- Develop specific procedures for storing topsoil, and for phased closure and reshaping and restoration of the pit when extraction has been completed. Include plans for segregating gravel and quarry materials by quality and grade for possible future uses. Where appropriate, include reseedling or re-vegetation to reduce soil erosion, prevent gullyng and minimize visual impacts.
- Discuss with local communities the option of retaining quarry pits as water collection ponds to water cattle, irrigate crops or for similar uses. Issues of disease transmission, and prohibiting the use of pit water for human consumption, bathing, and clothes washing, should be highlighted.
- Decommission/restore areas so that they are suitable for sustainable use after extraction is completed.
- Backfill and/or restore borrow areas and quarries before abandonment if alternative uses for those sites are not planned.

### ***MATERIAL STORAGE AND HANDLING***

- Identify sites for temporary/permanent storage of excavated material and construction materials.
- Avoid pollution of waterways with stockpiled construction materials.
- Set protocols for vehicle maintenance to control contamination by grease, oil and fuels.
- Build collection channels leading to oil and/or silt traps, particularly around areas used for vehicle washing or fuelling.
- Build appropriate containment structures around bulk storage tanks and materials stores to prevent spillage entering watercourses.
- Build tanks or other separators for silt-laden material prior to allowing significant outflow into watercourses.
- Cover stockpiled construction materials, as practicable.
- Minimize the disturbance of, and reduce the spread of, ground contaminants.
- Handle, store, use and process branded materials in accordance with manufacturer's instructions and recommendations.
- Segregate construction waste that can be salvaged, re-used or recycled.
- Take construction waste materials to appropriate, designated local disposal areas.
- Minimize burning of waste materials.

- If construction waste will be buried on site, avoid siting burial pits up-gradient from drinking water sources such as wells. Pits should be lined with impermeable material (e.g., clay or polyethylene).
- If construction waste will be buried on site, avoid siting waste pits where water tables are high or underlying geology makes contamination of groundwater likely. If no alternative site is available, ensure that pits are lined with impermeable material.

#### ***HUMAN HEALTH AND WORKER SAFETY DURING CONSTRUCTION***

- Provide workers with appropriate safety equipment.
- Protect workers from injury by flying or falling rock, slope failures and avalanche
- Explore off-site accommodation for crew
- Keep camp sizes to a minimum.
- Provide temporary sanitation on construction sites
- Maintain good first aid capabilities on site.
-

## *Standard Conditions for Small-Scale Road Rehabilitation and Maintenance Activities*

Road rehabilitation and maintenance activities occur in conjunction with a variety of community infrastructure and rural development projects financed by USAID. Road rehabilitation and maintenance activities include excavation; soil grading and leveling; fill placement and compaction; placement of base course and road surface materials; and construction of culverts, bridges and surface drainage structures. These activities have the potential to result in significant adverse environmental impacts, but most of those impacts can be mitigated down to acceptable levels through the use of good design and construction practices.

These standard conditions have been developed by USAID's Europe and Eurasia Bureau to ensure that small-scale road rehabilitation and reconstruction activities do not result in significant adverse environmental impact. When adherence to these conditions, as practicable and appropriate, is required as a condition of road rehabilitation and maintenance contracts, no significant adverse environmental impact is presumed to result from activity implementation.

Project officers, CTOs, Mission Environmental Officers, Contract Officers and implementing organizations must nonetheless be aware that these standard conditions are generic in nature, and that additional potentially significant adverse environmental impacts may be associated with road rehabilitation and maintenance activities. **It is the responsibility of the individual USAID missions, and/or their implementing contractors and grantees, to monitor road rehabilitation and maintenance activities and to ensure that significant adverse environmental impacts do not result.**

This guidance applies only to road rehabilitation and maintenance activities that (1) cost less than \$250,000 per individual project and (2) do not involve realignment of a road outside of its existing right of way (ROW). Because of the exceptionally diverse physical, biological and social environments in which Bureau road rehabilitation and maintenance projects take place, and the broad kinds of rehabilitation and maintenance activities that are financed, these standard conditions are to be followed "as practicable and appropriate."

### **Standard Conditions for Road Rehabilitation and Maintenance Projects**

#### *Noise, Traffic Disruption and Dust*

- Establish and adhere to construction timetables that minimize disruption to the normal activities of the construction area. Post construction timetables and traffic diversion schedules at the project site, as appropriate.
- Coordinate truck and other construction activity to minimize noise, traffic disruption and dust.

#### *Human Health and Worker Safety*

- Develop and implement appropriate human health and worker safety measures during construction.
- Provide workers with appropriate safety equipment.
- Take safety precautions to protect workers and others from injury by flying or falling rock, slope failures and avalanche.
- Explore off-site accommodation for crew.
- Keep camp size to a minimum.
- Provide temporary sanitation on construction sites.

### Ecological and Historical Considerations

- Identify and avoid areas in the project impact zone that may contain important ecological, archeological, paleontological, historic, religious or cultural resources, including forests, wetlands and areas of high biological diversity or threatened species habitat.
- Have construction crews and supervisors be alert for buried historic, religious, and cultural objects, and provide them with procedures to follow if such objects are discovered. Provide incentives for recovery of objects and disincentives for their destruction.
- If impact to sensitive areas cannot be avoided during road reconstruction, involve ecologists, archeologists and engineers in evaluating alternatives and minimizing impacts.
- Where significant environmental impacts may occur, document and photograph pre-construction and post-construction conditions.

### Project Design

- Use established design standards for each facet of construction and related activities, e.g., road bed, road surface, drainage, erosion control, re-vegetation, stream crossing, sensitive areas, steep slopes, material extraction, transport and storage, construction camps, decommissioning, etc.
- Minimize use of vertical road cuts even though they are easier to construct, and require less space than flatter slopes. The majority of road cuts should have no more than a ¾:1 to 1:1 slope to promote plant growth. Vertical cuts are acceptable in rocky material and in well-cemented soils, if such cuts are stable according to established slope stability criteria.
- Water the road prior to compaction to strengthen the road surface.
- When possible, delay compaction activities until the beginning of the wet season or when more water is available.
- Use water from settling basins and retention ponds for road maintenance.
- Drive roads after moderate rains to identify areas that collect or gully water. Mark and redesign/rehabilitate as necessary.
- Reshape eroded or culled surfaces so that water will no longer follow the course of the roadway.
- Conduct periodic independent inspection of work to see that it conforms to original plan and design specifications. Provide incentives and disincentives to ensure conformance.

### Excavation/Borrow Pits

- Use material from local road cuts first, since it produces a fairly durable aggregate for both surface stabilization and erosion control and is very cost effective.
- Place fence around borrow pit excavations, as necessary.
- Ensure excavation is accompanied by well engineered drainage to control runoff into the pit.
- Develop specific procedures for storing topsoil, and for phased closure and reshaping and restoration of the pit when extraction has been completed. Include plans for segregating gravel and quarry materials by quality and grade for possible future uses. Where appropriate, include reseeded or re-vegetation to reduce soil erosion, prevent gulleying and minimize visual impacts.
- Discuss with local communities the option of retaining quarry pits as water collection ponds to water cattle, irrigate crops or for similar uses. Issues of disease transmission, and prohibiting the use of pit water for human consumption, bathing, and clothes washing, should be highlighted.
- Decommission/restore area so it is suitable for sustainable use after extraction is completed.

- Backfill and/or restore borrow areas and quarries before abandonment if alternative uses for those sites are not planned.

#### Vegetation Clearing and Revegetation

- Carry out earth moving and removal of vegetation only during dry periods.
- If vegetation must be removed during wet periods, wait until just before actual construction.
- Store topsoil and preserve removed plants for later use.
- Re-vegetate with recovered plants and other appropriate local flora immediately after equipment is removed from a section of the site.

#### Material Storage

- Identify sites for temporary/permanent storage of excavated material and construction materials.
- Avoid pollution of waterways with stockpiled construction materials.
- Cover stockpiled construction materials, as practicable.

#### Fill and Grade

- Minimize the volume of fill required.
- Raise road surfaces with stable and durable fill material. Grade with inslope, outslope or cambered shape. Install sufficient cross-drains, ditches and settling ponds.
- Use appropriate road surface materials (e.g., asphalt, concrete, gravel) following fill placement, or excavation to design grade.
- Do not fill the flow-line of natural creeks and drainages. Especially in arid areas, design culverts to handle rare high rainfall events.
- Minimize cuts and fills in wetlands.

#### Drainage and Erosion Control

- Install drainage structures during, instead of after construction. Most erosion associated with roads occurs in the first year after construction. Delaying installation of the drainage features greatly increases the extent of erosion and damage during that time.
- Use outside ditches to control surface water when necessary, but avoid general use as they concentrate water flow and require the road to be at least a meter wider. Install frequent structures, berms or trenches, to divert water upslope of roads into stream channels.
- Install frequent diversion structures, such as water bars, to move water off the road and minimize concentration of water.
- Install drainage crossings to pass water from the uphill to the downhill side of the road. If using culvert pipes, follow accepted sizing and design standards. Where flows are difficult to determine, use structures such as fords, rolling dips, and overflow dips that can accommodate any flow volume and are not susceptible to plugging.
- Stabilize outlet ditches (inside and outside) with small-stone riprap, and/ or vegetative barriers placed on contour to dissipate energy and to prevent the creation or enlargement of gullies.
- Install drainage turnouts at frequent intervals, and extend turnout drains far enough to allow water to dissipate evenly into the ground.
- Install drainage ditches or berms on up-hill slopes to divert water away from the road.
- Visually spot check for drainage problems, including accumulation of water on road surfaces, especially after the first heavy rains following rehabilitation and at the end of the rainy season.

- Monitor and maintain drainage structures and ditches including culverts. Clean out culverts and side channels/runouts when they begin to fill with sediment.
- Install temporary erosion control features when permanent ones will be delayed. Use erosion control measures such as hay bales, berms, straw or fabric barriers.
- Stabilize slopes by planting vegetation. Work with agronomists to identify native species with the best erosion control properties, root strength, site adaptability, and other socially useful properties. Set up nurseries in project areas to supply necessary plants. Do not use non-native plants. Use soil stabilizing chemicals or geo-textiles (fabrics) where feasible and appropriate.

#### Material Disposal

- Break up old road surface material. Remove and dispose of surface material (e.g. asphalt) if necessary, and loosen soil of previous track to accelerate regeneration of vegetation.
- Segregate waste which can be salvaged, re-used or recycled.
- Take waste materials to appropriate, designated local disposal areas.
- Minimize burning of waste materials.
- If waste will be buried on site, avoid siting burial pits up-gradient of drinking water sources such as wells. Pits should be lined with impermeable material (e.g., clay or polyethylene).
- If waste will be buried on site, avoid siting waste pits where water tables are high or underlying geology makes contamination of groundwater likely. If no alternative site is available, ensure that pits are lined with impermeable material.

#### Hazardous Materials

- Do not use asbestos materials on USAID-funded projects.
- Do not use herbicides on USAID-funded projects without prior written approval.
- Place solvents, lubricants, oils, and other semi-hazardous and hazardous liquids over a lined area with appropriate secondary containment in order to contain spillage. Test the integrity of bulk storage tanks and drums, and secure valves on oil and fuel supplies.
- Build appropriate containment structures around bulk storage tanks and materials stores to prevent spillage entering watercourses.
- Handle, store, use and process branded materials in accordance with manufacturer's instructions and recommendations.
- Set protocols for vehicle maintenance such as requiring that repairs and fueling occur elsewhere or over impervious surface such as plastic sheeting. Prevent dumping of hazardous materials. Capture leaks or spills with drop cloths or wood shavings. Burn waste oil that is not reusable/readily recyclable, that does not contain heavy metals, and that is flammable.
- Take special precautions to prevent release/dumping of debris, oil, fuel, sand cement, and similar harmful materials.
- Install concrete pads, drains and oil/water separators in areas where vehicle and equipment maintenance and fueling will occur regularly.
- Prevent fuel tank leaks by monitoring and cross-checking fuel levels, deliveries and use; checking pipes and joints for leaks; tightening generator fuel lines; and preventing over-filling of main storage and vehicle tanks.

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*Standard Conditions for Small-Scale  
Water and Wastewater Activities*

USAID's Bureau for Europe and Eurasia finances, directly or indirectly, a large number of water and wastewater activities. These occur in both rural and urban areas, and in association with residential, commercial, industrial and medical facilities. Water and wastewater activities have the potential to result in significant adverse environmental impacts, but most of those impacts can be mitigated down to acceptable levels through the use of good siting, design, construction, operations and maintenance practices.

These standard conditions for small-scale water and wastewater activities have been developed by USAID's Europe and Eurasia Bureau (E&E) to ensure that water and wastewater activities financed by the Bureau do not result in significant adverse environmental impact. When adherence to these conditions, as practical and appropriate, is required as a condition of water and wastewater contracts, no significant adverse environmental impact is presumed to result from activity implementation.

Project Officers, CTOs, Mission Environmental Officers, Contract Officers and implementing organizations must nonetheless be aware that these standard conditions are generic in nature, and that additional potentially significant adverse environmental impacts may be associated with water and wastewater activities. **It is the responsibility of the individual USAID missions, and/or their implementing contractors and grantees, to monitor water and wastewater activities and to ensure that significant adverse environmental impacts do not result.**

For the purposes of this guidance, "small-scale" water and wastewater activities are defined as those that cost less than \$200,000 per individual construction project. Because of the exceptionally diverse physical, biological and social environments under which Bureau water and wastewater projects take place, and the broad kinds of water and wastewater activities that are financed, these standard conditions are to be followed "as practicable and appropriate."

**Standard Conditions for Water and Wastewater Activities**

**Standard Siting Conditions**

- Site water supply facilities in a way that minimizes the potential for contamination, taking into account existing and likely future land use patterns in the water supply—i.e., wellhead protection, or upper watershed—area.
- Site wastewater facilities in a way that minimizes their potential for contaminating water supply sources, or for exposing human populations to water-borne contaminants.
- Avoid siting water supply and wastewater facilities in flood-prone areas.
- Do not site water and wastewater facilities on active faults or other areas where ground stability problems such as soil creep occur.
- Locate wastewater facilities downwind of local population.
- Build latrines and similar sanitation facilities down gradient of water supply wells. As necessary, evaluate depth to water table including seasonal fluctuations. Pit latrines should not be installed where the water table is shallow or the composition of the overlying deposits make groundwater vulnerable to contamination.

- Employ sensitive siting strategies that take into appropriate consideration impact on trees, wetlands and watercourses, important plant and animal habitat, and significant historical and archaeological resources. Avoid or mitigate adverse impacts to these resources.

**Standard Design Conditions**

- In general, design water supply facilities to protect water quality, minimize the potential for contamination, and minimize operation and maintenance costs.
- In general, design wastewater facilities to avoid contamination of water supplies and human exposure, and minimize operation and maintenance costs.
- In general, do not construct new wastewater pipelines unless treatment is provided at the outfall.
- Where latrines are installed, use improved ventilated pit designs that reduce insect vectors.

**Standard Construction Conditions**

- Establish and adhere to construction timetables that minimize disruption to the normal activities of the construction area.
- Post construction timetables and traffic diversion schedules at the project site.
- Coordinate truck and other construction activity to minimize noise, traffic disruption and dust.
- Develop and implement appropriate human health and worker safety measures during construction as well as during operation and maintenance phases.
- Where significant environmental impacts may occur, document and photograph pre-construction and post-construction conditions.
- Avoid subsidence and building stabilization problems through proper foundation excavation, fill placement and borrow pit management.
- Fill should avoid pockets of segregated materials, it should use well-graded materials, and it should be compacted to recognized standards.
- Backfill and/or restore borrow areas and quarries before abandonment unless alternative uses for those sites are planned.
- Control runoff into borrow pits.
- Install temporary erosion control and sediment retention measures when permanent ones either are not feasible or are delayed.
- Provide temporary sanitation at the construction site.
- Set protocols for vehicle maintenance to control contamination by grease, oil and fuels.
- Build collection channels leading to oil and/or silt traps, particularly around areas used for vehicle washing or fuelling.
- Build appropriate containment structures around bulk storage tanks and materials stores to prevent spillage entering watercourses.
- Build tanks or other separators for silt-laden material prior to allowing significant outflow into watercourses.
- Avoid pollution of waterways with stockpiled construction materials.
- Cover stockpiled construction materials, as practicable.
- Minimize the disturbance of, and reduce the spread of, ground contaminants.
- Handle, store, use and process branded materials in accordance with manufacturer's instructions and recommendations.
- Use lead-free paint, primers, varnishes and stains.
- Minimize the use of solvent-based paints.
- Introduce measures to control and minimize the volume of waste on site.

- Segregate waste that can be salvaged, re-used or recycled.
- Take waste materials to appropriate, designated local disposal areas.
- Minimize burning of waste materials.
- If waste will be buried on site, avoid siting burial pits up-gradient from drinking water sources such as wells. Pits should be lined with impermeable material (e.g., clay or polyethylene).
- If waste will be buried on site, avoid siting waste pits where water tables are high or underlying geology makes contamination of groundwater likely. If no alternative site is available, ensure that pits are lined with impermeable material.
- Provide for the safe disposal of gray water from bathing and washing.
- Recycle wastewater to the extent practicable.
- Seal or remove abandoned drains to minimize water contamination.
- Use proper bedding materials for pipes, and backfill appropriately for the pipeline.
- Use riprap (cobbled stone), gravel, or concrete as needed to prevent erosion of drainage structures at the outfall of sanitation projects according to established standards.
- Monitor and repair leaks from cracked containment structures, broken pipes, faulty valves and similar structures.
- Do not use piping containing asbestos.
- Replace lead pipes and joints in drinking water delivery system.
- Provide proper wellhead protection against contaminant sources.
- Keep livestock from grazing immediately up-gradient of water supplies.
- Do not allow animals to drink directly from water sources, unless those sources are subsequently treated.
- In coastal areas, maintain withdrawals within safe yield limits to avoid salt water intrusion and well contamination.
- Ensure that spilled water and rainwater drain to a soakway or equivalent structure.
- Monitor drains and soakways and keep clear of debris.
- Collect and dispose of sludge from wastewater treatment facilities at appropriate frequencies.
- Dispose of sludge in areas designated by local authorities.
- Test sludge for metals, pathogens and other appropriate constituents prior to use as fertilizer.
- Recover and replant topsoil and plants as practicable.
- Re-vegetate areas damaged during construction. Do not remove erosion control measures until re-vegetation is completed.
- As practicable, landscape construction sites in a way that is appropriate to local conditions.

### **Standard Operations and Maintenance Conditions**

- As a rule, financing for water and wastewater infrastructure improvements should not be provided unless appropriate operations and maintenance (O&M) provisions are in place.
- On larger projects, an O&M Manual should be prepared before water or wastewater system operations begin.
- Address financial and system power issues in O&M plans.

### *Additional Standard Conditions for Slaughterhouses*

- Separate solid and liquid (wastewater, blood and other liquids) wastes prior to disposal.
- Recycle any wastes that can appropriately be recycled.
- Collect solid waste in containers for disposal to an approved treatment storage and disposal facility, if practicable.
- Treat liquid effluent with either anaerobic or aerobic pond systems, or discharge to a wastewater treatment facility that is able to handle these special materials.

### *Additional Standard Conditions for Health Clinics and Medical Facilities*

- Do not dispose of hazardous and chemical wastes to sewer systems.
- Collect and segregate waste from patients treated with cytotoxic drugs.
- Separate and disinfect stools from cholera patients prior to discharge.
- Disinfect blood before discharge to sewers unless there is an adequate wastewater treatment facility.
- Water-soluble, relatively mild pharmaceutical mixtures, such as vitamin solutions, cough syrups, intravenous solutions, eye drops, etc.—but not antibiotics—may be diluted with large amounts of water and then discharged to sewer systems that can handle them.
- Avoid burial of chemical wastes where there is potential for groundwater contamination.