Attachment 2: NOFO # 72038820RFA00006

Annotated Template for Global/Cross-Bureau IEEs/RCEs
File Number/Document Control Number (DCN): Asia 19-013

US Agency for International Development (USAID) / Bangladesh
Initial Environmental Examination (IEE) Face-sheet
Project Data:

<table>
<tr><td colspan="2">Activity/Project Title: USAID/Bangladesh Strengthened Resilience to Natural Hazards Project</td><td>Solicitation N/A</td></tr>
<tr><td colspan="3">Contract/Award Number (if known): N/A</td></tr>
<tr><td colspan="3">Geographic Location : Bangladesh/Asia; 388</td></tr>
<tr><td colspan="3">Originating Bureau/Office: Asia Bureau</td></tr>
<tr><td rowspan="3">Supplemental IEE: No
Amendment: No
Programmatic IEE: Yes</td><td colspan="2">DCN and date of Original document: Asia 13-106</td></tr>
<tr><td colspan="2">DCN and ECD link(s) of Amendment(s): See Table 1 for relevant IEEs and Amendments</td></tr>
<tr><td colspan="2">Amendment No.: N/A</td></tr>
<tr><td colspan="2">Funding Amount: US$ 125 M (estimated)</td><td>Life of Project Amount: US$ 125 M (estimated)</td></tr>
<tr><td colspan="3">Implementation Start/End: January 01, 2019 - December 31, 2023</td></tr>
<tr><td colspan="2">Prepared By: Shahadat Shakil, DMEO/EG
Mahbub Zaman, DMEO/OFDHA</td><td>Date Prepared: November, 2018</td></tr>
<tr><td colspan="2">Expiration Date (if any): December 31, 2023</td><td>Reporting due dates (if any): frequency as stipulated in contracts and awards</td></tr>
<tr><td colspan="3">Environmental Media and/or Human Health Potentially Impacted (check all that apply):
None Air Water Land Biodiversity Human Health Other</td></tr>
<tr><td colspan="2">Recommended Threshold Determination:
Negative Determination with conditions
Categorical Exclusion
Positive Determination</td><td>Deferral
Exemption
USG Domestic NEPA action</td></tr>
</table>

Climate Change Adaptation/Mitigation Measures: Climate Risk Screening Analysis at the PAD level included in the Annex 1.
PERSUAP: Programmatic Bangladesh PERSUAP for Development Objectives (DOs): DO2-Food Security Improved including FTF and Food for Peace Programs; DO3-Health Status Improved; DO4-Responsiveness to Climate Change Improved (Asia 16-003; FY15-n.d.).

1.0 Background:

1.1 Purpose and Scope of IEE:

The purpose of this document, in accordance with Title 22, Code of Federal Regulations, Part 216 (22CFR216), is to provide a preliminary review of the reasonably foreseeable effects on the environment, as well as recommended Threshold Decisions, of the USAID/Bangladesh DO4 portfolio's ongoing and new activities, as well as develop a single IEE document providing environmental compliance guidance to all ongoing and planned activities under this DO for CY 2019 – 2023.

This IEE will cover the on-going and planned activities (Table-1) under the DO4's ***Strengthening Bangladesh's Resilience to Natural Hazards PAD***[1] currently covered under the Mission IEE, Asia 13-106 (FY 2012-2019). This IEE will also cover the on-going and planned activities (Table-1) relevant to IR 4.3 of DO4 (see Figure 1) under the Office of Food Disaster and Humanitarian Assistance (OFDHA)[2].

Context**:**

USAID recognizes that resilience to natural hazards is critical for Bangladesh's social, economic, and political stability over the next 30 years. Failure to adequately adapt to the social and environmental shocks and stressors and effectively manage disasters could stifle or reverse the country's social and economic development progress to date. Under the existing Country Development Cooperation Strategy (CDCS 2011-2019), USAID investments are strengthening Bangladesh's responsiveness to natural hazards. In the proposed CDCS (2019-2024) USAID will continue to assist in the protection of lives and livelihoods and reduce economic losses resulting from exposure to natural disasters, thus reducing human suffering and poverty while ensuring more sustainable, equitable, and gender-inclusive development in the country and support Bangladesh's Journey to Self-Reliance.

Under the USG's Indo-Pacific Strategy, USAID will collaborate with key stakeholders to support establishment of South Asian electricity market. USAID will facilitate development of increased investment opportunities for US based wind energy companies, turbine manufacturers and technology and service providers; thereby expanding energy commerce and growing regional wind energy markets, expanding public-private partnerships, and fostering business-to-business connections.

In response to the Rohingya humanitarian crisis, the Government of Bangladesh allocated more than 10,000 acres of protected forest land in Cox's Bazar for refugee camps. These areas have now been clear cut, severely degrading the natural environment and significantly increasing regional vulnerability. Concerns such as violent extremism, land tenure, destruction of forests and wildlife habitats, and conflicts between refugees and local communities must continue to be monitored.

To the extent possible, USAID is using a gender responsive resilience-focused approach to implementation of all activities, that aims to prepare households, communities, and systems (social, economic, ecological) to anticipate, adapt to, and recover from shocks and stressors in a manner that reduces chronic vulnerability and facilitates inclusive growth.

Under the CDCS, USAID supports Development Objective 4 (DO4), a multi-sectoral effort, to assist Bangladesh in reducing its vulnerability and strengthening its resilience to natural hazards. USAID's strategic

[1] This project covers a transition period between the Mission's current CDCS (2011-2019) and its proposed CDCS (2019-2024), currently under development. This project is designed to continue implementation of DO4 activities for the duration of the current strategy and orient programs toward the achievement of the objectives articulated in the new CDCS planning documents.

[2] The Resilient Bangladesh Project is a collaborative effort between the Economic Growth Office (EG) Environment, Energy, and Economic Growth Team (E3) and the Office of Food, Disaster, and Humanitarian Assistance (FDHA).

approach focuses on improving conservation of ecosystems, adaptation to shocks and stressors, disaster management capacity, and use of sustainable energy.

Development Hypothesis

> *If ecosystem conservation, adaptation to shocks and stressors, disaster management, and use of sustainable energy are improved, then Bangladesh's resilience to natural hazards will be strengthened.*

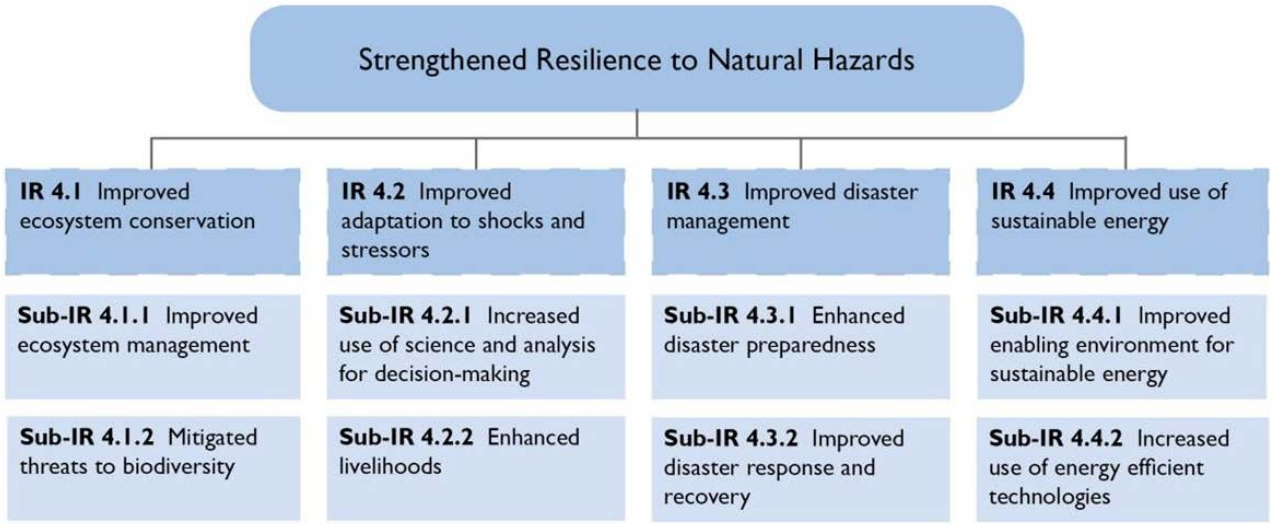
Project Purpose

> *The purpose of the Resilient Bangladesh project is to strengthen Bangladesh's resilience to natural hazards.*

Technical Approach and Expected Results

The *Strengthening Bangladesh's Resilience to Natural Hazards* project aims at achieving the DO4 goal[3] - that is based on the four Intermediate Results (IRs). It is contributing to achievement of the CDCS goal of partnering with Bangladeshi citizens to thrive, prosper and build a brighter future by strengthening Bangladesh's adaptation and resilience to natural hazards.

Figure 1: Strengthening Bangladesh's Resilience to Natural Hazards Project (2018-2023) Results Framework



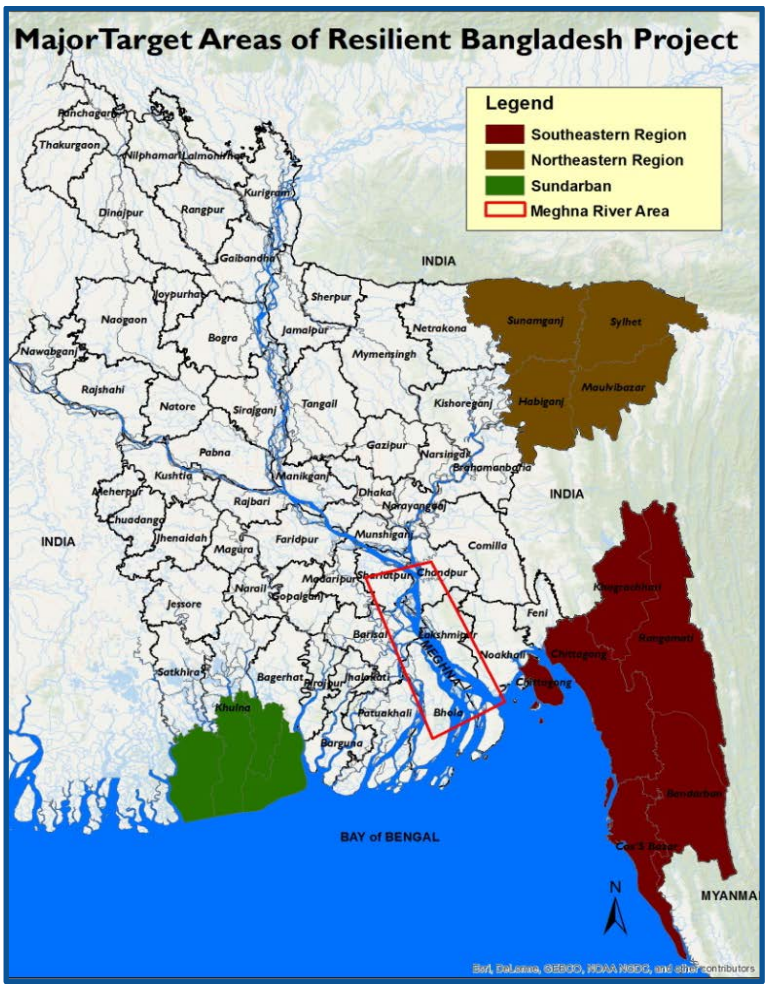
Geographic Focus and Targeted Beneficiaries

DO4 activities will principally target areas of high vulnerability to hydro-meteorological hazards with the greatest potential to mitigate risk and produce benefits for vulnerable and/or marginalized populations (see Figure 2). These areas include: (a) riverine, char, and urban areas which are vulnerable to extreme floods; (b) coastal areas, which are vulnerable to tropical storms, sea surge, and sea-level rise/salinization; (c) hilly areas, which are vulnerable to landslides and deforestation; (d) urban areas, which receive large influxes of disaster-affected migrants; and (e) remote off-grid areas which lack communication for pre- and post-disaster

[3] Under the current CDCS (2011-2019), this project supports Development Objective 4 (DO4): Responsiveness to Climate Change Improved and the CDCS-level goal "Bangladesh, a knowledge-based, healthy, food secure, and climate resilient middle income democracy."

coordination and recovery. USAID will also continue to monitor and assess the Rohingya refugee situation in Southeastern Bangladesh, and will increase its humanitarian assistance in the region.

Figure 2: DO4's Geographic Focus



USAID's Bangladesh gender assessment identified that women and children are 14 times more likely to die during a disaster, largely due to insufficient access to information about what to do and where to go when a disaster strikes and the inability to exercise personal freedom of choice in taking action in response to a disaster.[4] USAID has and will continue to factor the vulnerabilities, coping strategies, and adaptive capacity of women and other marginalized groups into programming in this DO to translate findings into concrete recommendations to policy makers and stakeholders for action. USAID will strengthen networks between and among academics, government agencies, research institutes, and policy development institutions, thereby increasing the country's capacity to manage and administer future programs related to resilience to natural hazards.

2.0 Country Environmental Information:

Bangladesh, located in South Asia, has a population of approximately 180 million people (23.6 percent live below the poverty line). It contains the second largest river basin in the world, including the confluence of three major rivers (the Ganges, Brahmaputra, and Meghna) and their associated tributaries. Located between

[4] "Gender Assessment for Country Development Strategy." USAID/Bangladesh. October 2015.

the Himalayas and the Indian Ocean, Bangladesh has a marshy tropical coastline, large floodplains and low sea elevation (10 percent of the country lies over 1 meter above mean sea level, and one-third of the land is under tidal excursions), which create constant exposure to natural shocks and disasters[5]. The northeast and southeast portions of the country are hilly.

The natural ecosystems of Bangladesh include several types of forests, freshwater wetlands and coastal and marine types. Bangladesh features protected areas that have prominent international status, like the World Heritage site in the Sundarbans, and lesser known, but equally critical habitats like the haors (wetland basins) in northeastern Bangladesh and tropical evergreen forests in the Chittagong hill tracts. Although Bangladesh has a system of protected areas that includes national parks, wildlife sanctuaries and ecologically critical areas, enforcement of protections and protected area management is weak, resulting in severe degradation and loss of natural habitats and ecosystems. The Tropical Forestry and Biodiversity Assessment (FAA 118/119 Analysis; 2016) commissioned by USAID/Bangladesh identified eight primary direct threats/challenges: 1) encroachment in protected areas; 2) degradation of forests and wetlands; 3) infrastructure development; 4) unsustainable and/or illegal exploitation of terrestrial resources; 5) unsustainable and/or illegal fishing practices; 6) change in hydrological regime; 7) pollution; and 8) invasive species.

The natural resources on which the poor disproportionately depend are increasingly stressed.[6] The country's natural resource base has been over-exploited and degraded. In fact, the degradation of 66 percent of the country's precious wetlands, the continuing loss of natural forest cover, and the decrease of ecosystem productivity has seriously affected Bangladesh's efforts to ensure environmental sustainability.[7]

The massive influx of Rohingya population is having a profound immediate impact on the ecosystem of Cox's Bazar District, though the scope and scale of the long-term impact remains unclear. Particularly, the two southern Cox's Bazar upazilas – Teknaf and Ukhia – bear the brunt of this crisis. These two upazilas have a combined population of over 550,000 people and are home to several ecologically critical areas and wildlife sanctuaries. Since August 2017, 500 hectares of forest has been lost per day at Cox's Bazar south forest division[8]. At the current rate of firewood collection (700 tons/day), Cox's Bazar District will lose its last remaining forests by the end of 2019[9]. A rapid assessment conducted by UNDP identified 11 environmental impacts that have been or could potentially be exacerbated by the Rohingya influx[10].

Bangladesh's water and agricultural resources (and thus economic activities) and coastal infrastructure are particularly vulnerable to the threats of Climate Change. Saltwater intrusion threatens Bangladeshi freshwater resources; changing temperatures, precipitation, and sea level rise could reduce agricultural productivity; and sea level rise, storm surge, and extreme events could damage or destroy coastal infrastructure[11][12].

The combination of geography, high population density, poor infrastructure, frequent natural hazards, and low resilience to economic and health shocks make Bangladesh especially vulnerable to climate risks and disasters

[5] "Bangladesh Climate Vulnerability Profile", USAID, January 2013. https://goo.gl/ejAehe.
[6] Bangladesh. Planning Commission. Environment, Forestry and Biodiversity Conservation: Background Paper for Seventh Five-Year Plan (2016-2020). http://bit.ly/2igjj9F.
[7] Bangladesh Tropical Forests and Biodiversity Assessment, USAID/Bangladesh, May 2016. https://goo.gl/RjQ3cc.
[8] Jalal et al. (2018). Regional Site-Specific Plan for Landscape Restoration in and around the Refugee Camps in Cox's Bazar South Forest Division.
[9] IOM & FAO (2017). Assessment of Fuel Wood Supply and Demand in Displacement Settings and Surrounding areas in Cox's Bazar District.
[10] UNDP & MOEF. (2018). Rapid Environmental Impact Assessment on Rohingya Influx.
[11] Bangladesh CDCS Climate Change Risk Screening Desk Study, USAID/Bangladesh, March 2016.
[12] Climate Change Profile: BANGLADESH, the Dutch Sustainability Unit (DSU): Netherlands Commission for Environmental Assessment (NCEA), September 2016. https://goo.gl/jq3rrE.

with women and children suffering disproportionately[13]. The 2015 Climate Change Vulnerability Index (CCVI), which evaluates the sensitivity of populations, the physical exposure of countries, and governmental capacity to adapt to climate change over the next 30 years, ranked Bangladesh as the country most at-risk of destabilization globally due to the effects of climate vulnerability.[14]

Healthy, well-functioning ecosystems such as forests, river basins, and mangroves can act as "natural structures" to reduce the magnitude of hazards and protect livelihoods[15]. Accelerating deforestation, forest degradation, and loss of biodiversity alter the ecological systems, biodiversity, genetic resources, and benefits derived with ecosystem services, thus impairing the ability of the ecosystems to serve as a safety net[16]. Changes in climate conditions caused by greenhouse gas emissions from deforestation, forest degradation, improper land use, and combustion of fossil fuels exacerbate the shocks and stresses on ecosystems, making them more fragile.

2.1 National Environmental Policies and Procedures:

Bangladesh has recognized environmental concerns for a long time. In the country, there are more than 200 laws and by-laws exist to tackle these challenges related to environmental issues[17]. However, the majority of these laws were passed during substantially different population and development conditions. Further, while Bangladesh has a strong legal and policy framework, the situation on the ground reflects a lack of capacity and coherent implementation by the government agencies, and a strong dependence on donor funding[18].

The first environmental policies were already developed in the 1970s. Later, the National Environmental Policy (1992) and the National Environmental Management Plan (1995) focused on better management of scarce resources, reducing the rate of environmental degradation, improving the natural and manmade environment, conserving habitats and biodiversity, promoting sustainable development and improving quality indicators of human life.

The Bangladesh Environment Conservation Act, 1995 (amended in 2010) and the accompanying 1997 Rules are the key items of legislation which provide legally binding direction for protection and conservation of the environment, improvement of environmental standards and control and mitigation of environmental pollution. In the year 2000, Bangladesh also established environmental courts under the Environmental Court Act 2000. Moreover, sectoral policies such as the National Water Policy (1999) or the Water Act (2013) are also in place to regulate water resources, water quality, sanitation, fisheries and participation of local communities in water sector development.

The Forest Act of 1927 sets the frame for forest management and vests considerable power in the hands of the Chief Conservator of Forests to determine the use of forest lands and to penalize illegal users. While allowing for designating use rights in forests for villages, the act does not give a role to neighboring communities in any decision making, including minority communities that often had use and settlement rights in forest areas or for civil society in general. The Bangladesh Wildlife (Preservation) Order of 1973 (later amended and gazetted as the Bangladesh Wildlife (Preservation)(Amendment) Act of 1974) is mainly concerned with regulating hunting but also sets out the scope for declaring protected areas as wildlife sanctuaries or national

[13] Comprehensive Risk and Resilience Assessment, USAID/Bangladesh, September 2016. https://goo.gl/Vjq7kX.
[14] "Climate Change and Environmental Risk Atlas." *Maplecroft*, 2015. http://bit.ly/1u6qdi4.
[15] "Resilience Overview." International Union for the Conservation of Nature's Commission on Ecosystem Management. Accessed on December 29, 2016. https://goo.gl/dDiUPi.
[16] Bangladesh Tropical Forests and Biodiversity Assessment, USAID/Bangladesh, May 2016. https://goo.gl/RjQ3cc.
[17] Ibid
[18] Bangladesh Environment, Forestry and Climate Change Country Investment Plan [Second Draft], FAO, May 2016. https://goo.gl/eTn14J.

parks; notably, these are not limited to forests, nor is the Order limited to Forest Department implementation. New rules for management of Protected Areas (PAs) and for social forestry now under discussion should go a long way to institutionalizing the concept of co-management.

The Protection and Conservation of Fish Act, 1950, and related Protection and Conservation of Fish Rules, 1985, which cover not only fish but also amphibians and aquatic reptiles, prohibit fishing by harmful methods, pollution and other activities detrimental to fisheries, and enable declaration of closed seasons and other rules. More recently, the Conservation, Restoration and Filling Control Act of 2003 aims to address problems of siltation, encroachment and pollution of surface waters (rivers, canals, beels, floodplains) as well as aquifers.

The Government of Bangladesh recognizes that tackling climate change requires an integrated approach involving a number of different ministries and agencies, civil society and the private sector. Under the leadership of MoEF, the GoB prepared a National Adaptation Program of Action (NAPA) which was launched in 2005 and updated in 2009. The plan identifies priority activities to provide a response to urgent and immediate adaptation needs. Bangladesh was one of the first countries to introduce a climate change strategy and action plan (BCCSAP, 2009). The BCCSAP will run through 2018 and its revision is being planned. It was also one of the first to set up – using government resources – a fund to support climate change adaptation projects at local level (the Bangladesh Climate Change Trust Fund). The GoB appreciates that not only capacity building and disaster management but also institutional and infrastructure strengthening, development of research and low carbon technologies are of importance in addressing climate change.

Bangladesh is a party to all the major environmental conventions, including the Convention on Biological Diversity, the Ramsar Convention on Wetlands of International Importance, the United Nations Framework Convention on Climate Change, the Convention on the Conservation of Migratory Species and many others. Bangladesh is up to date on the requirements of these conventions and has recently submitted a 2015 update to for the Ramsar Convention, the Fifth Report to the Convention on Biological Diversity (2015) and an update on major sections of the Red Data Book is near completion and Third National Communication to UNFCCC (2015)[19].

3.0 DO4 Activity Description:

Table 1: DO4 ongoing and planned activities and their potential effect on environment

Activity Data	Description	Procurement Instrument	Effect on environment	Determination and required Reg. 216 actions
Ongoing Activities **Economic Growth Office**				
Chittagong Hill Tracts (CHT) Watershed Co-Management Activity under Adaptive Environmental Governance for the Poor Program (AEGP) LOP: 2013-2022 LOP Budget: $14M Agreement: AID-	USAID is currently a major contributor to the UNDP-managed program that will support improved forest and watershed management in CHT, policy reform in the natural resources sector, capacity building for community based NRM, and livelihoods activities. *Interventions will include TA. The project may include procurement of vehicles and equipment, small infrastructure projects, ecosystems and habitats restoration activities, and grants for livelihoods activities.*	PIO Grant to UNDP-CHTDF. UNDP (Listed Organizations at ADS 308) will comply with its agency applicable safeguard policies (*Social and Environmental Screening Procedure; UNDP, 2016*) and will also periodically report to USAID, complying with the conditions	TA – no effect Procurement of equipment - no significant adverse effect Infrastructure, grants, ecosystem projects - potential for adverse effect	CE for TA. Special Considerations specified in the Section 5.1 "Recommended Actions" to be followed. NDC for procurement of equipment. Actions specified in Table 2 Section 2 must be followed. NDC for infrastructure and small grants projects. Actions specified in Table

[19] Bangladesh Tropical Forests and Biodiversity Assessment, USAID/Bangladesh, May 2016. https://goo.gl/RjQ3cc.

388-IO-13-00003		specified in Table 2.	Any pesticide or chemical use for livelihood interventions should be in compliance with Asia 16-003: Bangladesh Programmatic Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP/2015-n.d.)	2 Section 3 must be followed. *Status: UNDP-CHTDF (PIO) will follow the UN guidelines in the extension phase (2017-2022). Periodic monitoring by the AOR is warranted. Further, UNDP completed Social and Environmental Screening Templates while granting partner NGOs for livelihoods in and around Reserved Forests at the first phase (2013-2017).*
Strengthening National Forest Inventory and Satellite Land Monitoring System in support of REDD+ in Bangladesh (Strengthening Forest Monitoring) LOP: 2014 -2019 LOP Budget: $6,500,000 Agreement: AID-388-10-14-00003	This activity supports: a) establishing a broad consensus on the process and approach to National Forest Inventory and Satellite Land Monitoring System in Bangladesh; b) strengthen the capability of Forest Department to collect, analyze, update and manage information on forests and trees outside forests for planning and sustainable management of the forestry resources and REDD+ monitoring, reporting and verification (MRV); c) develop a national database and information system; d) prepare national maps of forests and land use;, e) undertake a National Forest to set up a long-term monitoring system of the resources; f) define long-term satellite based forest monitoring, develop tools and methods for integration of REDD+ MRV to National Forest Inventory and Satellite Land Monitoring System.	PIO Grant to FAO. PIO (Listed Organizations at ADS 308) will comply with its agency applicable safeguard policies and will also periodically report to USAID, complying with the conditions specified in Table 2. *This activity is also covered under Global IEE (Washington IEE # EGAT 14-11) and incorporated under IEE Asia 13-106 through MTF #5.*	TA - no effect	CE for Technical Assistance (TA), No environmental impacts is anticipated. Special Considerations specified in the Section 5.1 "Recommended Actions" to be followed. NDC for procurement of equipment-no significant adverse effect. Actions specified in Table 2 Section 2 must be followed. No office rehabilitation works will be completed. *Status: TA activity by PIO. No environmental compliance issue in place.*

Enhanced Coastal Fisheries (ECOFISH[BD]) LOP: 2014 – 2019 LOP Budget: $15,000,000 Grant No.: 72038818IO00002	This activity supports: (i) Improved application of science in resource conservation, planning and decision making; (ii) Strengthened fisheries adaptive co-management; (iii) Enhanced resilience of fisher communities; and (iv) Improved policy, power and incentives.	Mission-managed PIO Grant to WorldFish Centre. PIO (Listed Organizations at ADS 308) will comply with its agency applicable safeguard policies and will also periodically report to USAID, complying with the conditions specified in Table 2.	Potential for adverse effect TA - no effect Any pesticide or chemical use for livelihood interventions should be in compliance with Asia 16-003: Bangladesh Programmatic Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP/2015-n.d.)	Categorical Exclusion (CE), except if/when the activity includes tasks that may adversely affect the environment (e.g., construction of small structure) Negative Determination with Conditions (NDC) for collecting/preserving fish with alcohol. Analysis will be done using a HACH Digital Multi-Parameter measuring kit. Actions specified in Table 2 Section 3 must be followed. NDC for Integrated Pest Management-based smallholder gardens and household-scale fish ponds, none of which presently plan to utilize or promote the use of pesticides. Actions specified in Table 2 Section 3 must be followed. *Status: EMMP for NDC components has been produced. Periodic monitoring is in place and summary report is being included in the quarterly update to AOR.*
Rural Electrification and Renewable Energy Development (RERED II) LOP: 2013-2019 LOP Budget: $8M Agreement: AID-388-IO-12-00003	USAID is a minor donor contributing to a multi-donor trust fund managed by the World Bank. USAID's contribution supports off-grid solar home systems, solar irrigation pumps and mini and micro grid schemes. *Interventions include Technical Assistance (TA) and Small scale infrastructure projects.*	PIO Grant to World Bank. PIO (Listed Organizations at ADS 308) will comply with its agency applicable safeguard policies and will also periodically report to USAID, complying with the conditions specified in Table 2. *This activity was incorporated under IEE Asia 13-106 through MTF #10.*	TA – No effect Small scale infrastructure – Potential for an adverse effect	CE for TA. NDC for small infrastructure projects. *Status: As per the amendment #2 of the RERED-II grant agreement, USAID relies on PIO's (The World Bank) environmental compliance process for NDC components.*

Ongoing Activities **Food, Disaster, and Humanitarian Assistance (FDHA) Office**				
Multi-Purpose Cyclone Shelter (MPCS) LOP: 2010-2019 LOP Budget: $40,520,000 Agreement: AID-388-T-11-00001	The activity supports construction of 90 Multi-Purpose Cyclone Shelter (MPCS) in different geographical areas of Bangladesh. The MPCS will serve as shelter for local people during the time of emergency. It will also serve as elementary school when not in use as emergency shelter. Project activities are separated as per following: ● Project planning and design ● Construction ● Operation and Maintenance	PAPA Grant to U.S. Army Corps of Engineers (USACE). This activity is also covered by IEE Asia 15-034. Pursuant determinations and required Reg. 216 actions outlined there will be followed.	Project planning and design that includes land survey, site selection, building design, materials supply & transportation route, debris disposal site determination, and permits has no effect on environment Site preparation for construction and operation & maintenance activities such as land survey; preventative soil erosion measures; reestablishment of natural flora, operation and maintenance of the energy supply system (solar) and drainage system maintenance has minor to moderate effect Construction activities of the buildings that have minor to moderate effect on environment are geotechnical investigation; construction of temporary site camp & office; site lay-out; earthwork (filling and grading); construction of sanitation system (septic tank, soak well, leach field); construction of water supply well; construction of retaining wall; pilings and buildings; disposal of construction debris; preventative soil erosion measures; re-establishment of natural flora; operation and maintenance of the sanitary system; and drainage systems maintenance.	Categorically excluded. Negative determination with conditions as outlined in IEE Asia 15-034 . Negative determination with conditions as outlined in IEE Asia 15-034 . Environmentally and socially sound screening, site selection and design; completion of site specific environmental screening/review form/report (ESRFR) and preparation of EMMP as outlined in IEE Asia 15-034 . *Status: EMMP was prepared for this activity by partner USACE and periodic monitoring is done for compliance.*
Strengthening Earthquake Resilience in Bangladesh (SERB)	The activity supports: ● Training for hospital personnel for capacity building and workshop on	Grant to Asian Disaster Preparedness Center. *This activity was incorporated under IEE*	Training for hospital personnel has no effect on environment. Hands on training and	Categorically excluded. NDC for hands on training and

LOP: 2013-2019 LOP Budget: $1,946,222 Agreement: AID-388-G-13-00001	emergency response plan • Hands on training for FSCD urban volunteers on Collapsed Structure Search and Rescue, Firefighting and First Aid. • Procurement of small search and rescue tools for FSCD volunteers	*Asia 13-106 through MTF #09. Pursuant determinations and required Reg. 216 actions outlined there will be followed.*	procurement of small search and rescue equipment have minor effect on environment	procurement of small search and rescue equipment. Actions specified in Table 2 Section 2 must be followed. *Status: SERB is a capacity building activity of GOB. There is no environmental compliance issue during implementation of the activity.*
Field Support Activities **Economic Growth Office**				
Enhancing Energy Regulatory Capacity of BERC (EERC) LOP: Dec 2017 - Sep 2020 LOP Budget: $800,000 Agreement: AID-OAA-A-16-00042	The EERC activity will provide Technical Assistance (TA) in building energy regulatory capacity of Bangladesh Energy Regulatory Commission (BERC).This is a field support activity of the Energy Regulatory Partnership Program (ERPP) with U.S National Association of Utility Regulatory Commissioners (NARUC). EERC will support BERC to build its regulatory capacity in effectively carrying out its mandate as an independent regulatory authority.	Field Support Mechanism. Implementer will comply with the conditions set forward at Amendment #2 to IEE of Regional Energy Security Activity and Supplemental IEE of Regional Energy Security Activity (NARUC).	TA - No effect	CE for TA. Special Considerations specified in the Section 5.1 "Recommended Actions" to be followed.
Bangladesh Wind Power Capacity Building (BWPCB) LOP: Dec 2018 - Sep 2020 LOP Budget: $600,000 Agreement Number: AID-EGEE-P-17-00004	The Catalyzing Wind Power Development (CWPD) activity will be a buy-in to the new Interagency Agreement (IAA) with NREL under the U.S. Department of Energy (USDOE) and will build-on USAID Bangladesh's current work with NREL on wind resource assessment. CWPD activity will build capacity of Government of Bangladesh (GoB) stakeholders in identifying risks and possible mitigation measures for attracting investment in wind power development in potential areas. The buy-in will concurrently provide technical assistance to selective GoB stakeholders in structuring Power Purchase Agreement (PPA) and in conducting reverse auction and other bidding process for competitive price discovery in wind power generation.	IAA with U.S. Department of Energy (USDOE). *This activity is also covered by the parent IEE for USAID/NREL Partnership for Advanced Energy Systems project.*	TA - no effect.	Categorically Excluded Actions under the activity consists of TA and training for capacity enhancement.
SilvaCarbon - Capacity Development of Bangladesh Forest	Strengthen forest mapping, remote sensing tools, and human and institutional capacity with the Forest Department's Resource Information Management Systems (RIMS) unit	Grant to US Forest Service. *This activity is also*	TA – no significant adverse effect	CE for Technical Assistance (TA). No environmental impacts are anticipated. Special Considerations specified

Monitoring LOP: 2014-2018 LOP Budget: $3.2M Agreement: AID-BFS-G-11-00002	to inform land use planning and the Bangladesh Reducing Emissions from Deforestation and Forest Degradation program. Interventions include capacity building and technical assistance to the Forest Department of the Ministry of Environment and Forests of Bangladesh. *Interventions are limited to TA and purchase of IT equipment and software*.	*covered under Global IEE (Washington IEE # EGAT 14-11) and was incorporated under IEE Asia 13-106 through MTF #04*.		in the Section 5.1 "Recommended Actions" to be followed. NDC for procurement of equipment-no significant adverse effect. Actions specified in Table 2 Section 2 must be followed. *Status: TA activity. No environmental compliance issue in place.*
Partnership for Enhanced Engagement and Research (PEER) grants in cooperation with the National Academy of Sciences LOP: 2018-2021 LOP Budget: $300,000 Agreement: AID-OAA-A-11-00012	This activity funds Bangladeshi scientists and engineers who partner with U.S. government-funded researchers to address global development challenges; to leverage major investments made by U.S. government science agencies in research to improve development results in USAID-presence countries; to empower Bangladeshi scientists and engineers and level the playing field on which global research occurs.	Grant to Local Organization (Buy-in to a Global Development Lab mechanism). Implementer will comply with the conditions set forward at Programmatic Initial Environmental Examination (PIEE) for Partnerships for Enhanced Engagement in Research (PEER).	TA - no effect	CE as this activity is focused on educational research to the extent such program does not affect the environment. Special Considerations specified in the Section 5.1 "Recommended Actions" to be followed.
Field Support Activities **Food, Disaster, and Humanitarian Assistance (FDHA) Office**				
Strengthening Household Abilities for Responding to Development Opportunities III (SHOUHARDO III; meaning "friendship") LOP: 2015 - 2020 LOP Budget: $5,000,000 Agreement: AID-FFP-A-15-00009	The SHOUHARDO III program of CARE Bangladesh proposes to work in 947 highly vulnerable villages of 115 Unions in 23 Upazilas under 8 Districts of both Char and Haor regions, where the targeted 549,000 Poor and Extreme Poor (PEP) people will be benefitted directly with the implementation of proposed activities during the program period from 2015 - 2020. The program continues to work in low lying river based char and deep seated haor areas where the global climate change (GCC) may affect the agriculture due to excessive rainfall and flash floods in Haor and dry and drought in north west and mid char areas of the country. *The goal of the SHOUHARDO III program is "Improved gender equitable food and nutrition security and resilience of the vulnerable people living in the Char and Haor in Bangladesh by 2020".*	Cooperative Agreement to CARE Bangladesh. *This activity is covered by DCHA Bureau approved IEE for agreement # AID-FFP-A-15-00009. Pursuant determinations and required Reg. 216 actions outlined there will be followed.* Any pesticide or chemical use for livelihood interventions and/or commodity storage should be in compliance with DCHA Bureau approved SAFER USE ACTION PLAN (SUAP) and Phosphine Gas Fumigation Management Plan (FMP) of SHOUHARDO III.	DRR activities under this large program includes: Training for disaster management committees, volunteers, students at Upazila and Union level and reparation of disaster management contingency plan with no effect on environment. Climate smart agriculture and alternate livelihoods has minor effect on environment. Small scale infrastructure work (i.e. construction of wave protection, school cum flood shelter, homestead rising by earthwork, etc.) will have minor to moderate effect on environment.	Categorically excluded. Negative determination with condition. Negative determination with conditions. *Status: EMMP for NDC components as identified above has been produced following the best practice guidelines. Periodic monitoring is in place and as per the suggestion of REA; summary report will be included in the quarterly update to Activity Manager. Further, CARE submitted ESR with the FY17 PREP.* .

Nobo Jatra (meaning "New Beginning") LOP: 2015 - 2020 LOP Budget: $5,000,000 Agreement: AID-FFP-A-15-00012	The Nobo Jatra program targets 249,348 households living in the poverty-entrenched Southwestern coastal districts of Khulna and Satkhira. Persistent food insecurity is a result of a complex interplay of factors in this remote and hazard-prone region. Rice and fish are the most important staple foods in southwestern coastal Bangladesh. Low agricultural yields are off-set with fish caught in rivers or those cultivated in household ponds. In addition to this livelihood challenges, cyclones periodically cripple all food production, not to mention the loss of lives, assets and infrastructure. Cultural norms coupled with gender inequalities greatly impact how food resources are obtained and distributed throughout the household. I*nterventions under Nobo Jatra are organized around three important themes: maternal and child health and nutrition, agriculture and economic development, and resilience. The goal of Nobo Jatra program is "Improved gender equitable food security, nutrition and resilience of vulnerable people in Bangladesh".*	Cooperative Agreement with World Vision. *This activity is covered by DCHA Bureau approved IEE for agreement # # AID-FFP-A-15-00012. Pursuant determinations and required Reg. 216 actions outlined there will be followed.* Any pesticide or chemical use for livelihood interventions and/or commodity storage should be in compliance with the DCHA Bureau approved Safer Use Action Plan (SUAP) and Pest Management Plan (PMP) of Nobo Jatra.	DRR activities under this large program includes: Training for disaster management committees, volunteers, students at Upazila and Union level and reparation of disaster management contingency plan with no effect on environment. Climate smart agriculture and alternate livelihoods has minor effect on environment. Small scale infrastructure works for installation of water pump; water filtration facility etc. will have minor effect on environment.	Categorically excluded. Negative determination with conditions. Negative determination with conditions. *Status: EMMP for NDC components as identified above has been produced following the best practice guidelines, which is still to be approved by USAID. Periodic monitoring is in place and as per the suggestion of REA; summary report will be included in the quarterly update to Activity Manager. Further, World Vision submitted ESR for FY17. .*
Sustainable Agriculture and Production Linked to Improved Nutrition Status, Resilience and Gender Equity (SAPLING) LOP: 2015 - 2020 LOP Budget: $3,000,000 Agreement: AID-FFP-A-15-00010	The SAPLING is being implemented in five upazilas of Bandarban district, located in Chittagong Hill Tracts. Throughout the life of the activity SAPLING anticipates assisting 55,925 households. *The overall goal of the SAPLING project is "improved gender equitable food security, nutrition and resilience of vulnerable people in the CHT region of Bangladesh.*	Cooperative Agreement with Helen Keller International. *This activity is covered by DCHA Bureau approved IEE for agreement # AID-FFP-A-15-00010. Pursuant determinations and required Reg. 216 actions outlined there will be followed.* Any pesticide or chemical use for livelihood interventions and/or commodity storage should be in compliance with the DCHA Bureau approved Pesticide Safer Use Action Plan Compliance Tracker of SAPLING. .	DRR activities under this large program includes: Training for disaster management committees, volunteers, students at Upazila and Union level and reparation of disaster management contingency plan with no effect on environment. Climate smart agriculture and alternate livelihoods has minor effect on environment. Small scale infrastructure works for installation of water pump, water filtration facility, soil erosion protection and drainage culvert etc. will have minor effect on environment.	Categorically excluded. Negative determination with conditions. Negative determination with conditions. *Status: EMMP for NDC components as identified above has been produced following the best practice guidelines. Periodic monitoring is in place and as per the suggestion of REA; summary report will be included in the quarterly update to Activity Manager. Further, HKI submitted ESR with the FY17 PREP.*

New Activities **Economic Growth Office**				
USAID/ Bangladesh Ecosystems Conserved/ *Sonrokkhito Protibesh* Activity LOP: 2019-2024 LOP Budget: $19,500,000 Contract No: TBD	This activity will improve both human and ecosystem wellbeing through improved governance in key biodiversity areas in Bangladesh. This activity will support the following activities: 1) implementation of a unified and inclusive Ecosystem-Based Management (EBM) policies and plans; 2) mobilize co-management organizations adjacent to forest parks and fisheries sanctuaries; 3) develop effective communication strategy on EBM to improve local awareness and reduce risks of human-wildlife conflict through a behavior change strategy; 4) conduct workshops and trainings to enable community champions and influencers; 5) work with law enforcement agencies and mobilize local communities to increase compliance; 6) facilitate learning exchanges among co-management organizations to build up its national coalition for advocacy; and 7) ensure government services and resource allocations are adequate to sustainably manage and protect key biodiversity areas of Bangladesh.	Contract	TA - no effect Procurement of equipment - no significant adverse effect Small scale Infrastructure, sub-grants, ecosystem projects - potential for an adverse effect Any pesticide or chemical use for livelihood interventions should be in compliance with Asia 16-003: Bangladesh Programmatic Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP/2015-n.d.)	CE for TA. Special Considerations specified in the Section 5.1 "Recommended Actions" to be followed. NDC for procurement of equipment. Actions specified in Table 2 Section 2 must be followed. NDC for infrastructure, grants, and ecosystem projects. Actions specified in Table 2 Section 3 must be followed.
Community Partnerships to Strengthen Sustainable Development (Compass) LOP: 2019 - 2024 LOP Budget:: $5,000,000 (TBD) Agreement: TBD	This planned activity will support: ● Partnering with NGOs and Community Based Organizations (CBOs) to improve forest resources; ● Urban and semi-urban forestry, ecology, and agriculture programs; ● Reforestation, afforestation, restoration, and urban greening activities; ● Alternative livelihood development for urban and rural communities; ● Conflict resolution and land use planning; ● Establishing a Youth Conservation Corps of Bangladesh; ● Rangeland management and field support; ● Capacity development for universities and research institutions; ● Direct support to Bangladesh Forest Department;	PAPA interagency agreement with United States Forest Service	TA - no effect Procurement of equipment - no significant adverse effect Small scale Infrastructure, sub-grants, ecosystem projects - potential for an adverse effect Any pesticide or chemical use for livelihood interventions should be in compliance with Asia 16-003: Bangladesh Programmatic Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP/2015-n.d.)	CE for TA. Special Considerations specified in the Section 5.1 "Recommended Actions" to be followed. NDC for procurement of equipment. Actions specified in Table 2 Section 2 must be followed. NDC for infrastructure, grants, and ecosystem projects. Actions specified in Table 2 Section 3 must be followed.

	• Piloting of innovative tools; and, • Communication, education, and public awareness.			
Local Works Bangladesh Activities LOP: 2019-2022 LOP Budget: $6,000,000 Agreement No. TBD	These activities will mitigate the impact of the Rohingya refugee displacement on the natural environment of Cox's Bazar by: • Reforestation and forest management systems support. • Assistance to social forestry, artificial natural regeneration, afforestation and agroforestry. • Participatory monitoring and capacity development of the stakeholders. • Promoting alternative energy sources. • Providing livelihoods support which may include cash grants, training and support for small business development. • Quick impact interventions through cash-for-work modalities which may cover improvements to small scale public infrastructures.	Milestone based Fixed Amount Awards (FAA) to Local NGOs *This activity is covered by PIEE E3-15-5 for E3 LS Small Grants Program. Pursuant determinations and required Reg. 216 actions outlined there will be followed.*	TA - no effect Procurement of equipment - no significant adverse effect Small scale Infrastructure, sub-grants, ecosystem projects - potential for an adverse effect Any pesticide or chemical use for livelihood interventions should be in compliance with Asia 16-003: Bangladesh Programmatic Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP/2015-n.d.)	CE for TA. Special Considerations specified in the Section 5.1 "Recommended Actions" to be followed. NDC for procurement of equipment. Actions specified in Table 2 Section 2 must be followed. NDC for infrastructure, grants, and ecosystem projects. Actions specified in Table 2 Section 3 must be followed.
DOJ Wildlife Protection/ *Bonnoprani Rokkha* Activity LOP: 2019-2023 LOP Budget: $3,000,000 Agreement No: TBD	USAID will leverage USDOJ's unique and inherent law enforcement expertise in building technical capacities of the police, prosecutors, judges and relevant law enforcement agencies such as the forestry and fisheries departments, customs, coast guard, etc. USAID will support conduct of trainings on wildlife crime investigations and detection to GoB enforcers. Purchase of equipment will be considered to beef up the GoB's forensics laboratory operations and field-level investigative procedures. Joint trainings and workshops with judges, prosecutors, and law enforcers will be implemented to increase rate of CWC conviction, improve policy integration, and enhance interagency coordination.	Interagency Agreement - Participating Agency Program Agreement	TA - no effect. Procurement of equipment - no significant adverse effect	CE for TA. Special Considerations specified in the Section 5.1 "Recommended Actions" to be followed. NDC for procurement of equipment. Actions specified in Table 2 Section 2 must be followed.
INTERPOL Transboundary Combating Wildlife	The INTERPOL activity will support GoB efforts to disrupt and dismantle transboundary wildlife trafficking operations in Bangladesh	Field Support - INTERPOL Public International Grant Agreement with USAID	TA - no effect. Procurement of equipment - no	CE for TA. Special Considerations specified in the Section 5.1 "Recommended Actions"

Trafficking (CWT) Activity LOP: 2019-2023 LOP Budget: $2,000,000 Agreement No: TBD	ports and border checkpoints. INTERPOL will improve GoB's surveillance, detection and investigative capacities through on-the-job trainings, workshops, mentoring, assessments, and technology acquisition along its borders and major ports. This activity will provide: technical assistance in reviewing national CWC policies; promote effective interagency cooperation in Bangladesh; produce public service announcements materials in port facilities and border checkpoints. Support will be extended for GoB participation in international CWC coordination meetings and forums.	Asia Bureau. This activity is also covered through the Asia Bureau's IEE Asia 16-027. *Pursuant determinations and required Reg. 216 actions outlined there will be followed.*	significant adverse effect	to be followed. NDC for procurement of equipment. Actions specified in Table 2 Section 2 must be followed.
New Activities **Food, Disaster, and Humanitarian Assistance (FDHA) Office**				
Multi-Purpose Cyclone Shelter (MPCS) LOP: 2019-2023 LOP Budget: $25,000,000 Agreement: TBD	The activity supports repair and refurbishment of 100 existing Multi-Purpose Cyclone Shelter (MPCS) and new construction of 25 MPCS in different sub-districts of Cox's Bazar and Bandarban districts of Bangladesh. The MPCS will serve as shelter for local people during the time of emergency. It will also serve as elementary school when not in use as emergency shelter. Project activities are separated as per following: ● Project planning and design ● Construction ● Repair and Refurbishment ● Operation and Maintenance	TBD This activity is also covered by IEE Asia 19-010. Pursuant determinations and required Reg. 216 actions outlined there will be followed.	Project planning and design that includes land survey, site selection, building design, materials supply & transportation route, debris disposal site determination, and permits has no effect on environment Site preparation for construction, repair and refurbishment and operation & maintenance activities such as land survey; preventative soil erosion measures; reestablishment of natural flora, operation and maintenance of the energy supply system (solar) and drainage system maintenance has minor to moderate effect Construction, repair and refurbishment activities of the buildings that have minor to moderate effect on environment are geotechnical investigation; construction of temporary site camp & office; site lay-out; earthwork (filling and grading); construction of sanitation system (septic tank, soak well, leach field); construction of water supply well; construction of retaining	Categorically Excluded. Negative determination with conditions as outlined in IEE Asia 19-010. Positive determination as outlined in IEE Asia 19-010. Environmentally and socially sound screening, site selection and design; completion of site specific environmental screening/review form/report (ESRFR) and preparation of EMMP as outlined in IEE Asia 19-010.

			wall; pilings and buildings; disposal of construction debris; preventative soil erosion measures; re-establishment of natural flora; operation and maintenance of the sanitary system; and drainage systems maintenance.	

4.0 Recommended Threshold Decisions and Mitigation Actions:

Most DO4 PAD (**Strengthening Bangladesh's Resilience to Natural Hazards)** interventions (est. 65%) are of a true technical assistance in nature and, therefore, will impart no negative impact on the physical or natural environment. These TA activities thus qualify for a ***Categorical Exclusion (CE)*** per 22 CFR 216.2 (c)(2)(i) as "education, technical assistance, or training programs except to the extent such programs include activities directly affecting the environment", 22 CFR 216.2 (c) (2)(iii) as "analyses, studies, academic or research workshops and meetings", and 22 CFR 216.2 (c)(2)(v) as "document and information transfers". 'Special Considerations' specified in the Section 5.1 "Implementer's Procedures" to be followed.

Procurement of computers and other electric and electronic equipment, and materials under all program tasks fall under ***Negative Determination with Conditions***. The proposed action is that the 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, 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.

A threshold decision of ***Negative Determination with Conditions*** pursuant to 22 CFR 216.3 (a) (2) (iii) is recommended for some (est. 35%) DO4 PAD (**Strengthening Bangladesh's Resilience to Natural Hazards)** activities, particularly with respect to ecosystems and habitats restoration activities, small scale infrastructure, alternative income generation/livelihoods activities, small grants, and others noted in Table 1 that may have negative impact on environment unless due diligence is followed.

Evaluation of potential environmental impacts and actions required from the DO4 activities is summarized in the Table 2 below:

Table 2:

No.	Activities	Effect on Natural/Physical Environment	Reg 216 Determinations and Actions Required
I	All activities that don't have an effect on the natural or physical environment. This includes: education, technical assistance, training programs except to the extent such programs include activities directly affecting the environment (such as construction of facilities, assistance in use of crop protection products, pesticide use demonstration, etc.); consultations, participant training, document transfers and information dissemination, analysis, studies, research workshops.	**No Effect**	**Categorical Exclusion:** Special Considerations specified in the Section 5.1 "Recommended Actions" to be followed.

	Examples of activities include: *Expanding the knowledge base for natural resource management and wildlife conservation; research on forestry practices and valuation of the ecosystems; capacity building for community based NRM, and livelihoods activities; strengthen the human and organizational capacity of the stakeholders; hands on training for FSCD urban volunteers on Collapsed Structure Search and Rescue, Firefighting and First Aid; provide training to vulnerable groups, communities and committees on DRR practices including early warning system to increase community disaster preparedness;*		
II	Procurement of computers and other equipment and materials. **Examples of activities include:** *Laboratories equipment upgrade, procurement of computers and other electric and electronic equipment and materials under all project tasks.*	**Insignificant**	**Negative Determination with Conditions:** 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, properly disposed of when applicable at the end of their useful life in a manner consistent GOB legislation and in their absence with best management practices according to USG, European Union or equivalent standards.
III	Ecosystem restoration, small-scale infrastructure, livelihood activities, sub-grants and subcontracts, and other activities that normally don't have a significant impact on the environment. **Examples of activities include:** *Livelihoods diversification activities; integrated pest management-based smallholder gardens and household-scale fish ponds; expansion and strengthening of value chain improvement program on local poultry, beef cattle, milk, vegetables and pond fish value chains; develop water, sanitation and hygiene facilities and support proper water management and hygiene practices;*	Minor to Moderate Effect	**Negative Determination with Conditions:** Environmental Due Diligence (EDD) in form of Environmental Review and Assessment Checklist (IEE Annex 2) is required to identify environmental effects, if required as a result of the EDD review develop Environmental Mitigation and Monitoring Plan (EMMP). EDD/EMMP shall integrate climate risk screening at activity level and shall be approved by COP & project environmental specialist, and A/COR and MEO/CIL If significant adverse effects are expected, 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 Mission Environmental Officer (MEO) and approved by Asia BEO. For details, please see Section 5.1 "Recommended Actions".

5. Climate Risk Management Summary

Methodology

The climate risk management (CRM) process (Annex-1) helped to assess and addressing climate-related risks associated with Strengthening Bangladesh's Resilience to Natural Hazards Project. The CRM process followed six different steps: anticipated project element, climate risks, climate risk rating, opportunities, risk management options and next steps.

The anticipated project elements included purpose/sub-purpose, time-frame, and areas of focus, or activities/mechanisms that need to be screened. The climate risk profile described climate stressors and the major types of risks that climate change poses to the geographic focus of DO4 PAD. Climatic risk rating (qualitative) was done based on characterization of climate risk: low, moderate, or high. The level of risk increases both as the severity of negative impact increases and as the probability of negative impact increases. This risk management options depended on the degree of climate risk or rating. There is no action required to manage low climate risks. However, moderate to high climate risks management options have been addressed in the Column 6 of Table-3 based on the risk rating and available resources to address those risks during project or activity design and implementation. The next steps are a set of actions to be taken after finishing the project design (Column 7). It may include further analysis to be conducted prior to activity design or incorporation of detail risk management options in the project.

Result

The CRM process identified 'low climate risk' for the IR/sector - Disaster Management and Sustainable Energy use due to type of interventions planned under those which are largely preparedness, capacity building and creating enabling environment. Sea-level rise and Flooding have been recognized as 'moderate climate risk' for Ecosystem Conservation and Adaptation interventions - which are depended on livelihood based approach. Salinity intrusion (result of storm surge and sea-level rise) will deteriorate the freshwater fisheries and natural resources along the coast, especially in Sunderbans, in medium term (`50 years)[20]. The frequency and intensity of flooding will increase resulting loss of livelihoods, changed waterways and impacting aquatic resources[21].

Identified climate risks will be addressed through - assisting households living around vulnerable areas to practice climate/weather informed fishing and agricultural practices and/or undertake other alternative income-generating activities to strengthen resilience to environmental and economic shocks. Activity level desk-based climate risk screening will be done to identify the climate sensitive interventions, locations and beneficiaries to safeguard the investment, especially for activities which will have agro-based livelihood intervention. Further climate risk will be suggested to incorporate within monitoring and evaluation framework of activities.

DO4 PAD is 'accepting' any climate risk over the project period as by default climate-resilience is integrated into activities to enhance the absorptive, adaptive and transformative capacities of the target population. DO4 will continue to operate in the vulnerable zones (e.g., south-west, Sundarbans) to achieve multiple development effect (i.e., conservation and climate-resilience) as well as to maximize value for money. Though low adoption of climate smart technologies and processes, is a possibility, until the communities see the incremental economic and/or social benefits. Further 'non-climatic risk' such as high population pressure on natural resources and political and other instability may hinder achievement, this risk is unavoidable.

[20] Bangladesh CDCS Climate Change Risk Screening Desk Study, USAID/Bangladesh, March 2016.

[21] Climate Change Profile: BANGLADESH, the Dutch Sustainability Unit (DSU): Netherlands Commission for Environmental Assessment (NCEA), September 2016. https://goo.gl/jq3rrE.

5. 1 Recommended Actions:

Special Considerations

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.

Lessons Learned (success or failure) from Previous Activities:

It is important to review EMMP documents to ensure they help guide projects in positive ways including streamlining decision-making, *guiding and prioritizing project activities, minimizing adverse environmental, health and social impacts and supporting progress towards project outcomes and targets.* Specifically:

I. Environmental compliance can be streamlined, merged by standardizing construction designs and livelihood activities, and creating practical categories for these activities in the EMMP.
II. Effective compliance and the measurement and quantification of impacts must be built into the EMMP, project work plan and M&E Plan.
III. Access to compliance data must be continuous, and databases updated regularly, if adaptive management is to succeed.
IV. Compliance and mitigation should not be only meeting USAID requirements, but helping develop a better understanding of and future commitment to good practices by local stakeholders and partners after the project ends.

USAID Requirements

I. **Environmental Compliance Actions and Results in USAID Solicitations and Awards:** within the IGCE environmental compliance requirement needs to be addressed to integrate the proposed conditions and required budget**.** The Contract/Agreement Officer shall include all conditions language and reference to this IEE in appropriate solicitations and awards. MEO and REA will advise in this regard as warranted. Suggested language for use in solicitation and awards can be found at the following link: http://www.usaid.gov/ads/policy/200/204sac.
II. **Implementing Partner (IP) Briefings on Environmental Compliance Responsibilities:** all procurement instruments shall fully transposed approved environmental conditions, and approved IEEs/RCEs shall be part of documentation sample EMMP and Environmental Manuals from earlier activities. MEO/CIL together with A/COR shall explain all applicable conditions at the "post award conference" to the IP. During this briefing, the IEE conditions (Table 2) applicable to the IP's activities will be identified in consultation with MEO.
III. **Compliance Monitoring**: as required by ADS 204.3.4, USAID A/COR with assistance from the MEO/DMEO, and REA as warranted, shall actively monitor and evaluate, by means of desktop reviews and site visits, whether there are new or unforeseen consequences arising during implementation that were not identified and reviewed in accordance with 22 CFR 216 (Reg. 216). USAID will also monitor the need for additional review. If additional activities not described in this document are added to this program, an amended environmental examination will be prepared in a timely manner and approved.
IV. **Compliance Reporting:** a summary report of Mission's compliance relative to this IEE will be sent to the BEO on an annual basis, normally in connection with preparation of the Mission's annual environmental compliance report required under ADS 203.3.8.5 and 204.3.3. The BEO or his/her designated representative may conduct site visits or request additional information for compliance monitoring purposes.

Implementing Partner (IP) Requirements

I. **MEO-approved Environmental Impact Professional (EIP):** prior to the launch of each activity that received NDC determination in this IEE (Table 1 & Table 2 Section III) the implementer must recruit a qualified, A/COR and MEO-approved environmental impact professional(s) (EIP) who will conduct an Environmental Due Diligence (EDD) review described below and develop other required environmental compliance documentation, recommend environmental actions to be taken by the program, train project personnel (including sub-grantees and subcontractors), coordinate implementation of mitigation measures, monitoring, and reporting.

Should the EIP lack special technical knowledge to identify any special environmental impact, the implementer will consult with a specialist in the relevant area. (Sample TOR for the EIP is attached to this IEE at **Annex 3**)

II. **Conducting Environmental Due Diligence (EDD):** prior to the launch of each activity that received NDC determination in this IEE (Table 1 & Table 2 Section III) including sub-grants and subcontracts, the implementer's EIP will conduct an Environmental Due Diligence (EDD) review with the Environmental Review and Assessment Checklist (ER Checklist) (attached to this IEE at **Annex 2**) and Leopold Matrix (attached to this IEE at **Annex 4**) as an inherent part of the EDD. The EDD must be conducted by the MEO approved environmental expert. The EDD process will document existing environmental concerns and foreseeable environmental effects resulting from the 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. TOR for Scoping Statement and EA Report must be reviewed by MEO and approved by Asia BEO.

III. **Development of Environmental Mitigation and Monitoring Plan (EMMP):** based on EDD results implementer will develop an Environmental Mitigation and Monitoring Plan (EMMP) for activities that may have negative environmental impact for USAID C/AOR review and approval, documenting how their project will implement and verify all IEE conditions that apply to their activities. Implementer will follow sample EMMP and sector specific Environmental Manuals developed by earlier activities, as a guideline, when shared by USAID. The EMMP will also identify how the IP will assure that IEE conditions that apply to activities supported under subcontracts and sub-grants are implemented (in the case of large sub-grants or subcontracts, the IP may elect to require the sub-grantee/subcontractor to develop their own EMMP). This documentation (template at **Annex 5**) will then be approved by the A/COR and MEO, in consultation with the Regional Environmental Advisor for Asia (REA/Asia). Standard conditions for small-scale constructions have been provided in **Annex 6.**

IV. **Integration and Implementation of EMMP:** the IP will integrate the EMMP into their project work plan and budgets, implement the EMMP, and report on its implementation as an element of regular project performance reporting. The IP will ensure that subcontractors and sub-grantees integrate implementation of IEE conditions, where applicable, into their own project work plans and budgets and report on their implementation as an element of sub-contract or grant performance reporting.

V. **Integration of Environmental Compliance Responsibilities in Sub-contracts and Grant Agreements:** the IP will ensure that subcontracts and sub-grant agreements reference and require compliance with relevant elements of the IEE and any attendant conditions. Sub-contracts or grants from the implementing partner to other organizations must incorporate provisions stipulating compliance with 22 CFR 216 and ADS 204 and the IEE.

VI. **Assurance of Sub-grantee and Sub-contractor Capacity and Compliance:** the IP will ensure that sub-grantees and subcontractors have the capability to implement the relevant requirements of this IEE. The IP will, as and if appropriate, provide training to sub-grantees and subcontractors in their environmental compliance responsibilities and in environmentally sound design and management (ESDM) of their activities.

VII. **New or Modified Activities:** as part of its initial Work Plan, and all Annual Work Plans thereafter, the IP, in collaboration with their C/AOR, shall review all planned and ongoing activities to determine if they are within the scope of this IEE. If any IP activities are planned that would be outside the scope of this IEE, an amendment to this IEE addressing these activities will be prepared for USAID review and approval. No such new activities will be undertaken prior to formal approval of this amendment. Any ongoing activities found to be outside the scope of the approved Reg. 216 environmental documentation will be halted until an amendment to the documentation is submitted and written approval is received from USAID. This includes activities that were previously within the scope of the IEE, but were substantially modified in such a way that they move outside of the scope.

VIII. **Compliance with Host Country Requirements and Ratified International Environmental (and ILO, WHO) Conventions:** nothing in this IEE substitutes for or supersedes IP, sub-grantee and subcontractor responsibility for compliance with all applicable host country laws and regulations for all host countries in which activities will be conducted under the USAID activity. The IP, sub-grantees and subcontractor must comply with each host country's environmental regulations unless otherwise directed in writing by USAID. However, in case of conflict between host country and USAID regulations, the latter shall govern. In all cases, implementation will adhere to corresponding host country environmental laws and policies, generally outlined in the Bangladesh Environment Conservation Act, 1995 (amended in 2010) and the accompanying 1997 Rules; National Environmental Policy of 1992, the National Environmental Management Action Plan of 1995 (and its 2000 and 2002 amendments), and the National Conservation Strategy of 1992. National environmental policies are available at the following link: http://www.moef.gov.bd/html/policy/policy.html

IX. **Compliance Monitoring and Reporting:** IPs will report on environmental compliance requirements as part of

their routine project reporting to USAID. Monitoring will be conducted during the project (beginning with a baseline) to determine the environmental impact (positive and/or negative) of all project activities. The implementer shall use **only qualified staff** for overseeing the mitigation and monitoring work. Monitoring shall occur as defined in the EMMP and 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.

Mitigation and Monitoring reports will be submitted to the Agreement/Contracting Officer's Representative (A/COR) and MEO prior to and at the completion of each relevant activity at every affected project site, and not at the end of the project or not on a semi-annual or 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.

The implementer's performance reports to USAID shall contain a section specific to Environmental Compliance and include 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, mitigation measures or monitoring procedures. If the activities implemented do not have any negative impact on the environment, this should be documented as well. The implementer's annual report will include an annex containing a table indicating the title, date of award, and category of each activity.

Resource Allocation, Training and Reporting Requirements:

- The DO4 team will work with the USAID contracting office to include environmental compliance requirements specified in this IEE into RFA/RFPs to ensure that applicants and bidders budget for appropriate resources, staff, mitigation and monitoring, and reporting procedures. The IEE shall be included in the RFA/RFP package.
- Agreement/contract with the implementing partner shall include environmental compliance and reporting language per the IEE.
- A/CORs together with MEO or his/her designee will explain all environmental conditions to the implementers at the post-award conference.
- The A/COR of each project, in consultation with the MEO or REA and corresponding implementing partner(s), will actively monitor and evaluate whether environmental consequences not foreseen by this IEE arise during implementation, and will modify or halt activities as appropriate. If additional activities are added to a project but are not described in this IEE, an amended IEE must be prepared.
- It is A/COR responsibility to ensure that Implementing Partners follow the environmental compliance requirements specified in this IEE.

6.0 Limitations of the IEE

This IEE covers all known or unknown activities under the USAID/Bangladesh DO4 portfolio through CY 2023 as long as the nature of the activities and DO4 LOP budget remain as described in this 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 it is covered by the Asia 16-003: Bangladesh Programmatic Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP/2015-n.d.) and is approved by the Bureau Environmental Officer.
- Activities involving support to wood processing, agro-processing, industrial enterprises, and regulatory permitting. A Pollution Prevention Assessment is necessary if the project goal is to have environmentally sustainable production and sales of value-added agricultural products by enabling producers and processors to get ISO, HACCP and other certifications which will be a key factor for the enterprise in competing regionally and globally. The PPA will be reviewed and approved by the Bureau Environmental Officer prior to start of activities.
- Assistance, procurement or use of genetically modified organisms (GMOs) will require preparation of biosafety assessment (review) in accordance with ADS 201.3.12.2(b) in an amendment to the IEE approved by the Asia BEO.
- DCA or GDA programs
- Procurement or use of Asbestos, Lead and Mercury Containing Materials (ALMCM) (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 Asia BEO.

Revisions:

Pursuant to 22CFR216.3(a)(9), if new information becomes available which indicates that activities to be funded under the DO4 portfolio might have "major" and "significant" effect, or if additional activities are proposed that have not been assessed under this IEE that might be considered "major" and their effects significant, this categorical exclusion and negative determination will be reviewed and revised and submitted to the Bureau Environmental Officer (BEO) for approval and, if appropriate, an environmental assessment will be prepared. It is the responsibility of the USAID Agreement/Contracting Officer's Representative (A/COR) to keep the Mission Environmental Officer and the BEO informed of any new information or changes in the activity that might require revision of this IEE.

Initial Environmental Examination (IEE) for USAID/Bangladesh Strengthening Bangladesh's Resilience to Natural Hazards Project Appraisal Document (PAD)

Clearances:

EG Office Director: **Thomas Pope** Date: 12.20.18

FDHA Office Director: **Paul Mason** Date: 12 10 18

Mission Environmental Officer (A): **Mahbub Zaman** Date: 12/10/2018

Program Office Director: **Todd Andrews** Date: 12/13/18

Regional Environmental Advisor: /SCA & OAPA — Concurred by E-mail (see attached) **Andrei Barannik** Date: 12/19/18

Resident Legal Advisor: Clearance by E-mail (see attached) **James Noel** Date: 12/19/18

John Niemeyer

Deputy Mission Director: ~~Arellia Camera~~ Tom Page Date: 12.20.18

Mission Director: **Derrick Brown** Date: 12/27/18

Concurrence:

Bureau Environmental Officer: **Will Gibson** Date: January 28, 2019

Approved: X

Disapproved:

Cced:

Project(s) files
MEO 22 CFR 216 Tracking
OAA
RLO

Annex-I: Strengthening Bangladesh's Resilience to Natural Hazards PAD Climate Risk Management Summary Table

PROJECT CRM TOOL OUTPUT MATRIX: CLIMATE RISKS, OPPORTUNITIES, AND ACTIONS

* = A required element, according to the Mandatory Reference

Project elements may include Purpose / Sub-purpose, Areas of Focus, or Activities / Mechanisms, etc.

1.1: Defined or Anticipated Project Elements*	1.2: Time-frame	1.3: Geography	2: Climate Risks*	3: Adaptive Capacity	4: Climate Risk Rating* [Enter rating for each risk: High, Moderate, or Low]	5: Opportunities*	6.1: Climate Risk Management Options	6.2: How Climate Risks Are Addressed in the Project*	7: Next Steps for Activity Design/Implementation*	8: Accepted Climate Risks*
Ecosystem Conservation (Forest Ecosystems; Inland Water Ecosystems; and Coastal and Marine Ecosystems) ***through*** ***(a) enhanced ecosystem management (promoting agroforestry and community-based NRM; technical assistance and training to build capacity)*** ***and*** ***(b) mitigated threats to biodiversity (protect and restore wildlife habitats; combat poaching and trafficking of wildlife)***	*10-20 years*	*South Region (Sundarbans);* *Northeastern Region (Sylhet, Moulavibazar, Habiganj, and Sunamganj districts);* *Southeastern Region (Chittagong and Cox's Bazar districts)*	**Sea-level Rise** Forest resources, important for the livelihoods of the poor especially in the Sundarbans area, are likely to be affected by salinity intrusion and storm surge. Sea-level rise likely to lead to saltwater intrusion into freshwater wetlands thus impairing ecosystem services such as fish production from coastal wetlands. Habitat suitability will be shifted. Specialist species can be lost / in risk of migration. **Temperature** Prolonged droughts will prevent the growth of trees in long run. Lower dissolved oxygen levels due to higher water temperature will harm aquatic ecosystems and likely to reduce the abundance of important fishery species. Reduced abundance and diversity of coral reefs due to more frequent bleaching and coral die-offs caused by higher ocean temperatures and ocean acidity. **Flooding** Increased erosion with heavy rain. Potential for increased siltation of waterways. Changing salinity of estuary ecosystems. More intense or shifting monsoons impacting rural livelihoods. Altered natural flow regimes with concomitant loss of aquatic species	**Information Capacity** - Stakeholders are aware about the impacts of climate change in general and have moderate capacity to apply that during decision making. - There is not sufficient information about vulnerable ecosystems and species (ecological processes, life histories, habitat requirements, etc.) to take actions to reduce that vulnerability. - Effective environmental and climate monitoring systems is not in place. - Climate data and information are occasionally used to inform natural resource management and conservation. - Unique indigenous knowledge exists about natural resource use and management specially in CHT but occasionally being collected and used. **Social and Institutional Capacity** - Relevant institutions specially GOB has taken robust coordinated approach to address additional stresses from changing climate during planning process (7th Five Year Plan, CIP for EFCC Sector). - Through Delta Plan 2100 GOB is taking an ecosystem-based management approach for enhancing climate resilience. - Prioritizing the needs of women in order to prevent further gender inequality from impacts of climate change is still under-addressed. - Ecosystem-based approaches to adaptation have been successfully tested and adopted to reduce vulnerability and achieving co-benefits (e.g., CBA-ECA Project, Mangroves for the Future Project). **Human Capacity** - NRM dependent communities recognize the impacts of climate change in general and but are not aware of the opportunities from that. - Individuals and communities are moderately sensitized about potential climate impacts on the environment but need support / capacity building to tackle that. **Financial Capacity** - Domestic sources (GOB revenue budget) finance over 80 percent of climate-related projects/programs, while foreign sources (grants) finance only about 20 percent. - CIP EFCC identified roughly $1B gap (74%) in investment to achieve the stated target by 2021 for Sustainable Development and Management of Natural Resources. - Stakeholders have null or limited capacity to access climate funds.	**Moderate** **Low** **Moderate**	Build on existing knowledge and moderate awareness level to move activities from coping strategies to adaptation practices. Well-functioning biodiverse ecosystems ensures co-development gains via poverty alleviation, food and water security, and human health. Promoting ecosystem-based approaches to adaptation that reduces vulnerability of people to climate impacts, while providing co-benefits for ecosystems, other ecosystem services, and species. Adopting agroforestry techniques or other methods of climate-smart or regenerative agriculture to increase production while also enhancing carbon sequestration. Promote management approaches and policies that maximize resilience of exploited fish species (e.g., no-take zones). Reducing other, non-climate threats to biodiversity and ecosystems (e.g. Hunting, Pollution, Habitat Fragmentation). Combatting Wildlife Trafficking will indirectly rectify the enabling environment for Violent Extremism. Rural livelihood diversification to reduce non-climate stresses on natural resources and biodiversity. Higher-efficiency cook stoves or lower-emissions alternatives to firewood use. Supporting REDD+ to help achieve climate change mitigation goals while also providing conservation-based income-generating opportunities. Gender sensitive programming to look out for unintended consequences, such as increasing women's unpaid work burden and/or increasing the length of their work day due to climate change impacts (i.e., collecting potable water).	Incorporating climate information into landscape-level conservation and land-use planning and protected area management. Increase conservation outside of protected areas, and incorporate mixed natural systems (e.g. agroforests). Promote climate-smart agricultural practices, including agro-forestry systems.	Building the capacity of beneficiaries to absorb, withstand and adapt to environmental and climatic shocks and variability. Addressing the drivers of deforestation and forest degradation, consequently mitigating greenhouse gas emissions through improving sustainable forest management, promoting agroforestry systems and community-based natural resource management. Assisting households living around forests and wetlands to improve fishing and agricultural practices and/or undertake other alternative income-generating activities to reduce reliance on forests and wetlands and strengthen resilience to environmental and economic shocks	Supporting research that assesses future potential impacts of climate change to biodiversity. Seeking information from women, indigenous peoples, and other marginalized populations who are often the custodians of local knowledge about elements of biodiversity. Account for predicted changes in demand for ecosystem services that may exacerbate climate impacts. Consider whether human adaptation to climate risks is going to increase or create new stresses on ecosystems and biodiversity. Incorporate climate risk into monitoring and evaluation of activities.	**None** Accepted non-climatic risks: High population pressure on natural resources. Low adaption of climate smart technologies and processes is a possibility until the communities see the incremental economic and/or social benefits. Political and other instability may disrupt program implementation. This risk is unavoidable.

Improved Adaptation to Shocks and Stressors ***through*** ***(a) increased use of science and analysis for decision-making (hydro-meteorological and other sciences and services to increase resilience in the agriculture and other key development sectors)*** ***and*** ***(b) enhanced livelihoods (technical assistance for income generation and enhancing the livelihoods of ultra-poor)***	*10-20 years*	*South Region (Sundarbans);* *Northeastern Region (Sylhet, Moulavibazar, Habiganj, and Sunamganj districts);* *Southeastern Region (Chittagong and Cox's Bazar districts)*	**Sea-level Rise** Reduced harvests and lower incomes from nearshore fisheries and aquaculture due to saltwater intrusion into freshwater wetlands from sea level rise and greater storm surge. Natural resources, important for the livelihoods of the poor, especially in the coastal area, are likely to be affected by salinity intrusion and storm surge.	**Information Capacity** - Stakeholders are aware about the impacts of climate change in general and have moderate capacity to apply that during decision making. - There is not sufficient information about climate-resilient seeds, livestock, or fishes to take actions to reduce vulnerability. - Accurate and timely weather/seasonal forecasting and early warning systems for severe weather events is not available to farmers for decision-making. - Effective monitoring systems is not in place to provide context-specific information on changes to agricultural systems. - Unique indigenous knowledge exists about agriculture specially in CHT but occasionally being collected and used. **Social and Institutional Capacity** - Government institutions and leaderships have taken robust coordinated approach to support the planning and implementation of actions to address potential climate impacts and opportunities (e.g., National Adaptation Plan, Delta Plan, CIP for EFCC Sector). - Linkages between national and sub-national governments exist but not strong enough to promote responses around climate change impacts. - Prioritizing the needs of women in order to prevent further gender inequality from impacts of climate change is still under-addressed. **Human Capacity** - Agriculture dependent individuals and communities are moderately sensitized about the potential climate impacts on livelohoods but need support / capacity building to tackle through climat-smart practices. - Farmers have started on pilot basis to incorporate new techniques into their agricultural management practices to reduce climate risk, such as integrated pestmanagement, control of soil erosion, and soil health management. **Financial Capacity** - Domestic sources (GOB revenue budget) finance over 80 percent of climate-related projects/programs, while foreign sources (grants) finance only about 20 percent, majority of them focused on infrastructure development. - CIP EFCC identified roughly $1B gap (28%) in investment to achieve the stated target by 2021 for Adaptation and Resilience to climate change. - Financial products and services (e.g., insurance) are currently not available to address increasing climate risk on livelihoods. Though some pilot experiments are in place.	**Moderate**	Leveraging political will of GOB being the pioneer around the world in terms of formulating plans and allocating domestic resources to deal with climate change impacts. Build on existing knowledge and moderate awareness level to move activities from coping strategies to adaptation practices. Support research that assesses potential impacts of climate change to livelihoods (e.g., agriculture, fishing) with the aim to integrate climate smart practices, improved climate information and early warning. Promoting ecosystem-based approaches to adaptation that reduces vulnerability of people to climate impacts, while providing co-benefits for ecosystems, other ecosystem services, and species. For some agricultural varities taking the advantage of changes in temperature or precipitation that will extend the growing season and allow for additional harvest Development and promotion of salt, drought, and heat tolerant varieties. Soil carbon and Nitrogen sequestration to mitigate climate change through conservation agriculture practices: low till rotations, tree and shrub crops. Village Savings and Loan Associations (VSLAs), and microfinance can help build the adaptive capacity of smallholders who otherwise lack access to financial services.	Support research regarding climate-resilient agriculture, livestock, or fishes. Building capacity for weather and climate forecasting, and making it readily accssible to the target group. Train farmers in basic techniques of sustainabl and climate-smart agriculture, such as soil health, integrated pest management (IPM), and crop rotation. Develop and provide advice to farmers and access to modern information and communication technologies. Develop new insurance instruments to address climate risks on livelihoods.	Engaging with local research institutions to conduct demand-driven and gender-responsive climate research and building the capacity of researchers. Partnering with global institutions to share hydro-meteorological and other sciences and services with Bangladesh agencies and institutions to increase resilience in the agriculture and other key development sectors. Supporting the building of an information system accessible to all relevant stakeholders. Providing training in the use of weather/climate information for decision making and development of adaptation plans at the community and household levels. Provide training and technical assistance for income generation, food, and resilience in target communities with emphasis on enhancing the livelihoods of ultra-poor and vulnerable Bangladeshis. Partnering with other donors, NGOs, academia, and media organizations to co-create a grant-making challenge fund mechanism focused in the area of climate resilience innovation and enterprise (e.g., insurance).	Activity level desk-based climate risk screening will be needed to identify the climate sensitive interventions, locations and beneficiaries to safeguard the investment, especillay for activities which will have agro-based livelihood intervention. Integration of FTF and FFP activities - a key bridge in building rural livelihoods resilience within communities at ZOI. Incorporate climate risk into monitoring and evaluation of activities.	**None** Accepted non-climatic risks: High population pressure on natural resources. Low adaption of climate smart technologies and processes is a possibility until the communities see the incremental economic and/or social benefits. Political and other instability may disrupt program implementation. This risk is unavoidable.
			Temperature Damage to crops and livestocks resulting reduced productivity due to heat stress and changes in rainfall. Reduced availability of fish and shellfish due to damage to coral reef habitat caused by higher temperatures and ocean acidification.		**Low**					
			Flooding Damage to crops, reduced productivity, and increased economic losses due to increased flooding in river basins, resulting higher level of food insecurity. Increased soil erosion with heavy rain reducing soil fertility. Potential for increased siltation of waterways, creating barriers for transporting agricultural product.		**Moderate**					
Improved Disaster Management through ***a) enhanced disaster preparedness (development of long-range early warning systems***		*North Central (char areas)*	**Storm Surge / Flooding / Sea Level Rise** Damage to embankments, settlements and cyclone shelters if not properly sited from storms including transportation systems and sanitation infrastructure. Which can disproportionately impact marginalized populations by reducing access to basic services (e.g., health centers). Extreme weather events (e.g., storm surges, floods) and climate change may affect people's livelihoods (e.g., disruption of markets and value chains) and may contribute to increased temporary displacement or permanent migration.			Develop and strengthen early earning systems, disaster risk reduction, and preparedness at all levels. Provide timely weather information to farmers using results of monitoring from early warning systems. Diversification of livelihood strategies and increased acess to savings/finance to cope with the shocks and stresses. To ensure co-benefit from DRR approach, using natural resource based management approaches to reduce pressure on natural resources while	Building capacity to incorporate and update disaster readiness plans with information on extreme weather and climate, and ensuring that plans are gender-informed. Enhancing early warning systems and ensuring it reaches to the most vulnerable.	Improving disaster preparedness as well as access to improved climate information and disaster warnings. Looking for opportunities	A compilation of climate change risk assessments will	**None** Accepted non-climatic risks: Political, social and economic

for flood; strengthen community-based and local-level Disaster Management Committees) ***and*** ***b) improved disaster response and recovery (support GOB to develop an IMS)***	*0-5 years*	*South-west (coastal areas)* *Southeastern Region (CHT)* *Dhaka (Earthquakes)*	Reduced supply of freshwater due to inundation of coastal aquifers from sea-level rise, resulting increased workload, time burden, and caloric expenditure for women and girls. Increased need for early warnings and early action due to increasing frequency and intensity of extreme weather events. Need for a greater number of trained responders due to increasing frequency and intensity of extreme weather events. Need for disaster readiness plans, systems, and operations to be informed by weather/climate information, forecasts, and warnings. Trends in hydro-meteorological data and urbanization rate predicts increased frequency and risks from landslides and earthquakes.	This step in the Tool is less relevant to the sector, since disaster readiness is a form of adaptive capacity.	**Low**	strengthening their resilience to climate-related economic shocks. Establish or conserve natural buffers and ecosystems (e.g. Mangroves Along the Coast) to protect communities that are exposed to storms. Climate-resilient specification inclusion in the post-disaster reconstruction of infrastructures (e.g., cyclone shelters, embankments). Construct/retrofit agricultural infrastructure for changing climate conditions when it is necessary to rebuild following extreme events. Leveraging political will to strenthen the Disaster Management System as illustrated in 7th Five Year Plan (2016-2020) and National Plan for Disaster Management (2010-2015). Gender sensitive DRR programming to look out for unintended consequences, such as increasing women's unpaid work burden and/or increasing the length of their work day due to climate change impacts (i.e., collecting potable water).	Enhancing support for information-sharing systems and services, which may involve strengthening networks and promoting dialogue and cooperation among scientific communities and practitioners. Further incorporating resilience measures into recovery to mitigate negative impacts in the future disasters. For example, planting appropriate vegetation on coastlines that would protect from storm surges or integrating disaster awareness and education projects.	for longer term risk reduction and resilience through links with other programs. Supporting the capacity and capabilities GOB agencies to respond at national and local levels by strengthening the Incident Management System for seismic and climate-affected hazards.	be conducted to better understand climate change vulnerability and the risks associated with natural hazards and disasters. The assessment will inform plans that complement scientific knowledge with local knowledge.	vulnerability of chars, haors, south west coastal districts and CHT with low resources coupled with remoteness and inaccessibility. Mission is accepting the above risks due to program/operate in the most suitable target areas characterized by multiple development effect as well as to maximize value for money.
Improved use of Sustainable Energy through ***(a) improved enabling environment for sustainable energy (strengthening the enabling, policy, and regulatory investment environments for sustainable energy and efficient energy use)*** ***and*** ***(b) increased use of energy efficiency technologies (scaling up adoption of energy efficient technologies and sustainable energy sources)***	*SHORT to LONG (up to 50 years)*	*Nation-wide, with particular focus on off-grid locations, industry-heavy zones and locations vulnerable to natural hazards*	**Extreme Events (Flood/Cyclone/Storm Surge)** Damaged electricity infrastructure, inhibited facility access, and creation of high repair costs due to **Tempararture/Wind** Increased burden on electricity infrastructure due to increasing demand for air conditioning and cooling caused by heat stress. Decreased generated wind power due to increases in air temperature. Reduced generation efficiency affected by reduced thermal gradient caused by warmer intake temperatures of cooling water in thermal power generation units. Decreased solar power cell efficiency and energy output due to temperature increase.	**Physical Capacity** - Low capacity of electricity infrastructure system to retain or restore service followed by an extreme event. **Information Capacity** - Effective systems are not in place to monitor and identify damages and disruptions to electricity infrastructures from extreme weather and climate variability. - Climate change information currently not being incorporated into strategic planning of resources (e.g., maintenance and operations, infrastructure improvements, personnel, and training) for electricity infrastructure services. **Social and Institutional Capacity** - Institutions, systems, and processes are not flexible and robust for managing electricity infrastructures to accommodate additional stresses on infrastructure from a changing climate. **Human Capacity** - Technical and research organizations are not well quiped to train and support communities to adjust to climate impacts on electricity infrastructure services. **Financial Capacity** - Funding sources to address climate risks to electricity infrastructure assets and services are not available at present.	Low Low	Investments in climate-resilient energy could support GOB in meeting national NDC commitments. Investments in climate-resilient energy generation networks could encourage national governments to invest in sustainable renewable energy sources and distributed networks. This also creates opportunities to engage the private sector. Projects to reduce energy system black-outs during extreme weather events through investments in more resilient generation and transmission systems and back-up generation could attract support from local businesses dependent on electricity supply. Investments in new or renovated infrastructure could provide opportunities to expand services to rural communities and provide jobs to women and other marginalized groups. The need to rebuild infrastructure after extreme events could provide an opportunity to relocate communities from high-risk locations and convert those areas to ecosystem/biodiversity restoration zones. Training and capacity building for local government staff on conducting climate vulnerability assessments and adaptation planning can be used to build technical skills in applying and accessing climate data, using geospatial platforms, and writing effective proposals. Collecting climate projections and observational data for infrastructure planning could also support information and data needs for early warning and emergency response. Incorporating more energy efficient and sustainable elements in new or existing industrial facilities will improve factory performance and overall energy management. Opportunities to reduce emissions by increasing Energy Efficiency (e.g. incentivizing the use of building materials that reflect heat and faciliate cooling efficiency). Demand-side management programs which can reduce energy consumption.	Locate electricity infrastructure systems in more protected areas. Change the frequency of repair schedules of electricity infrastructure and implement changes in maintenance protocols. Develop contingency plans in the event of electricity disruption and install redundant systems to back up a primary system. Provide education and training for staff to effectively respond to electricity disruptions or emergency events. Upgrade design standards and codes and their implementation for both new construction and renovation.	Ensuring that relevant GOB decision makers are aware of clean energy priorities and climate risks, while also ensuring that Promoting use of sustainable renewable energy resources, thereby reducing pressure on conventional thermal power generation. Capacity building on smarter energy management for targeted population group.	Activity level desk-based climate risk screening to safeguard the energy infrastructure and to offset the impact of climatic pattern (e.g., wind direction, heat) on the renewable energy options. Creating enabling environment (i.e. research, capacity building) for climate sensitive energy investment.	**None** Accepted non-climatic risks: High population pressure. Low adaption of technologies and processes is a possibility until the communities see the incremental economic and/or social benefits. Political and other instability may disrupt program implementation. This risk is unavoidable.

ANNEX 2

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 Representative (A/COR) 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 detailed description for environmental impact analysis)*

Baseline Environmental Conditions: ***This section will serve as EDD*** *(Provide site specific environmental conditions due to onsite & offsite sources details for impact analysis;* *****Note: This portion covers only the baseline conditions, any impacts resulting from reconstruction/

construction/rehab will be covered under sections A through D.*)*

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 under1 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 unmitigatable adverse environmental effects. Mitigation is insufficient to eliminate these effects and alternatives are not feasible. The project is not recommended for funding.

[INSERT ORGANIZATION LOGO]

ANNEX 3

TERMS OF REFERENCE / JOB DESCRIPTION

POSITION TITLE: Environmental Impact Specialist, [INSERT PROJECT NAME]

LOCATION: Dhaka, Bangladesh

REPORTS TO: [INSERT THE POSITION, CHIEF OF PARTY or OTHER]

PERFORMANCE PERIOD: [INSERT PERIOD, SPECIFY WHETHER IT IS A FULL OR PART TIME POSITION]

ELIGIBILITY: [US or LOCAL HIRE]

PROGRAM SUMMARY:

[INSERT PROGRAM ACTIVITY SUMMARY]

POSITION SUMMARY:

USAID policy requires implementing organizations to ensure their program activities do not have a negative impact on the environment. This is done primarily through detailed analyses of program activities to identify potential impacts, and the development and implementation of mitigation and monitoring measures to minimize and monitor these risks.

[PROJECT X] is required to follow environmental determinations specified in the USAID approved IEE [INSERT IEE DCN NUMBER], which outlines the activities with the potential for negative environmental impacts, and specifies actions to minimize the risk of these activities. The Environmental Impact Specialist will be responsible to ensure that the IEE requirements are implemented by the project team, including sub-contractors and grantees if applicable, and that all environmental impact analyses are completed as required by the IEE.

ESSENTIAL RESPONSIBILITIES [THIS IS AN ILLUSTRATIVE LIST, IT SHOULD BE COMPLETED BASED ON THE REQUIREMENTS OF THE IEE]:

- Work with program staff to implement the measures outlined in the [PROJECT X] IEE [INCLUDE ALL APPLICABLE], that includes develop, implement, monitor, report on, and update, as appropriate, the:
    - Environmental Due Diligence report (EDD)
    - Environmental Monitoring and Mitigation Plan (EMMP) and Environmental Manual (EM)
    - Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP)
    - Scoping Statement (SS) and Environmental Assessment (EA)

- Ensure that all program activities consider potential environmental impact and address any environmental concerns;
- Conduct evaluation of potential environmental impacts in …[e.g. construction], and ensure detailed engineering studies are completed for structures address environmental concerns;
- Coordinate as necessary with the GOB to process all documents required to obtain required environmental clearances and ensure compliance with relevant GOB environmental protection regulations;
- Work with the [PROJECT X] grant and contracts team to incorporate required environmental mitigation measures into grant and sub-contract documentation and project implementation;
- Assist [PROJECT X] staff in monitoring the implementation of [INSERT EMMP, PERSUAP or EA] during operation of the program, including regular visits to …[agricultural, rehabilitation and/or construction sites];
- Report on the implementation of [EMMP, PERSUAP, EA] as part of program quarterly reports, and as otherwise appropriate;
- Ensure timely completion of all EMMP related deliverables and periodic reporting required by the EMMP;
- Develop training materials and provide training to and build the capacity of local implementing partners (including sub-contractors, grantees, community based organizations, project staff, and GOB counterparts, as necessary) on the requirements of the [EMMP, PERSUAP, EA] and national environmental regulations and how to comply with mitigation measures specified;
- Lead the inclusion of environmental compliance tasks, e.g. training, monitoring, reporting, updates, etc., in the annual implementation plan; and,
- Carry out other tasks as designated by COP.

QUALIFICATIONS AND REQUIREMENTS:

Education: Bachelor's degree in Environmental Science and/or Management or Environmental Engineering or related field**.** Master's degree preferred.

Experience:

- At least 5 years of experience working as environmental specialist, with a focus on regulatory compliance, environmental monitoring methods, impact analysis and assessment;
- Experience in conducting trainings;
- Experience in writing Environmental Impact Assessment(s) (EIA);
- Experience working in ….[e.g. parks or protected area infrastructure; conducting environmental assessments in the agriculture sector; and/or natural resource management];
- Knowledge of biological, water sciences, and/or the earth-sciences ;
- Knowledge of Bangladesh environmental regulations required;
- Previous experience with donor funded projects preferred;
- Familiarity with USAID environmental guidelines is preferred

Skills:

- Proficiency with Microsoft Office;
- Should have strong analytical skills, be gender sensitive, and possess a proven track record of working successfully in a variety of cultural contexts;
- Excellent interpersonal and community consultation skills;
- Excellent writing skills;
- Fluent Bangla and English language skills [speak, read, write]

Leopold Matrix – *Insert Project Type* Potential Impacts **Name of Reviewer:** **Date:** **ANNEX 4**

Environmental component / Project 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 5

EMMP TEMPLATE

PROJECT/ACTIVITY DATA

Project Tracking ID:	
EMMP Tracking ID:	
Project/Activity Name:	
Implementing Partner(s):	
EMMP date:	
Submitted by:	

PURPOSE OF EMMP

Environmental Mitigation and Monitoring Plans (EMMPs) are required for USAID-funded projects when the 22CFR216 documentation governing the project impose conditions on at least one project element. EMMPs are a vehicle for translating IEE conditions (which are often very general) into specific, implementable, verifiable actions.

The following EMMP documents the mitigation measures planned, establishes the monitoring protocols, indicators to be tracked, identifies responsible parties, and schedule of activities.

The undersigned commits to ensure that all foreseeable significant adverse effects on the environment have been adequately and effectively mitigated by the attached EMMP to be implemented at [specify site, activity number]. If new adverse effects or the need for new or improved mitigation measures are identified, I will immediately notify the USAID activity manager/AOR/COR.

Signed:

_____

Name, COP/Implementer

USAID APPROVAL OF EMMP

[Include signature blocks in accordance with Bureau and/or Mission policy. At a minimum include the noted required signatures.]

Approval: _____ _____

[Name], Activity Manager/A/COR (required) Date

Approval: _____ _____

[Name], Regional Environmental Advisor (as appropriate) Date

_____

Approval: _____ Date

[Name], Mission Environmental Officer (required)

Approval: _____ _____

[Name], Asia Bureau Environmental Officer (as appropriate) Date

[The EMMP is composed of a brief narrative as well as a summary table. The content of the EMMP should provide enough details to document the mitigation measures planned, monitoring protocols, indicators to be tracked, and responsible parties.]

1.0 PROJECT/ACTIVITY SUMMARY

[This should be a summary of activity and information in the IEE, modified to site-specific circumstances.]

2.0 REGULATORY FRAMEWORK (BANGLADESH AND UNITED STATE)

3.0 SUMMARY OF ENVIRONMENTAL CONDITIONS IN RELATION TO OVERALL PROJECT IMPLEMENTATION/SCREENING

[This should be a summary of information in the IEE, expanded to site specific circumstances. A detail of each of the activities and sub activities and Environmental screening (Threshold Decision) of each sub-activity under project/activity is very much needed to justify the Threshold Decision]

Defined or Anticipated Project Elements		

4.0 MITIGATION ACTIVITY NARRATIVE

[In this section short down the NDC activities and briefly describe each required mitigation proposed, how it will be implemented, how it will be integrated into overall project activities, and timing with the activity implementation.]

5.0 MONITORING ACTIVITY NARRATIVE

[In this section briefly describe the monitoring indicators, monitoring protocols, individuals/entities responsible for monitoring, and timing of monitoring with respect to activity implantation. Also specify how monitoring indicators are integrated with the overall project monitoring, evaluation, and learning (MEL).]

6.0 REPORTING ACTIVITY NARRATIVE

[In this section briefly describe the reporting related to the mitigation and monitoring, planed protocols, and individuals/entities responsible, and timing of reporting with respect to activity implementation.]

7.0 DESCRIPTION OF EMMP MONITORING PROTOCOL (OPTIONAL SECTION)

[In this section briefly explain the process to ensure the EMMP is being implemented and effective. Define the process engaging USAID (A/COR and BEO) to adjust EMMP if necessary.]

8.0 OTHER ENVIRONMENTAL ANALYSIS REQUIREMENTS

[In this section briefly explain timing and plan to undertake other environmental analyses required such as PER, SUAP, WQAP, CRM.]

9.0 ENVIRONMENTAL COMPLIANCE STAFFING (OPTIONAL SECTION)

[In this section briefly describe the staffing plan and expertise to ensure mitigation and monitoring is adequately addressed.]

10.0 ANNUAL BUDGET

Estimated budget for 22CFR216 compliance measures	
Cost of EMMP development	
Cost of Mitigation activities	
Cost of Monitoring activities	
Cost of reporting activities	

11.0 EMMP SUMMARY TABLE FOR [PROVIDE NAME OF ACTIVITY]

Defined or Anticipated Project Elements	Identified Environmental Aspects or Impacts	Environment and Climate Mitigation Measure(s)	Monitoring Indicator(s)	Monitoring and Reporting Frequency	Responsible Parties
Planning and Design (if applicable)					
Mobilization (if applicable)					
Sourcing of Materials & Equipment (if applicable)					
Rehabilitation works (if applicable)					
Construction Demobilization (if applicable)					
Testing, Operation, and Maintenance (if applicable)					

ANNEX 6

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 un-irrigated 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, flow 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 to 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 reseeding or re-vegetation to reduce soil erosion, prevent gullying 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 fueling.
- 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 reseeding or re-vegetation to reduce soil erosion, prevent gullying 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 insle, 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.

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 fueling.
- 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.