ENVIRONMENTAL THRESHOLD DECISION

Activity Location: Haiti
Activity Title: Health and Nutrition Status of the Haitian Population Improved
Activity Number: Fixed Amount Award No. AID-521-F-15-00011
Life-of-Activity Funding: $406 million
Life-of-Activity: 1 October 2015 – 30 September 2018
IEE Prepared by: Stephane Morisseau, Natalia Machuca, Abdel Abellard
Reference Env. Threshold Decisions: None
Recommended Threshold Decision: Categorical Exclusion
Positive Determination
Bureau Threshold Decision: Concur

Comments:

A Categorical Exclusion is issued to AO1 Health and Nutrition Status of the Haitian Population Improved for the activities listed below, because no environmental impacts are expected as a result of these activities. Pursuant to 22 CFR 216.2(c)(2):

(i) Activities involving education, training, technical assistance or training programs except to the extent such programs include activities directly affecting the environment (such as construction of facilities, etc.);

(iii) Activities involving analyses, studies, academic or research workshops and meetings;
(v) Activities involving document and information transfers;

(viii) Programs involving nutrition, health care, or family planning services except to the extent designed to include activities directly affecting the environment (such as construction of facilities, water supply systems, waste water treatment, etc.);

(xiv) Studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment (such as construction of facilities, etc.).

For specific intervention areas, Categorical Exclusions are recommended, per the above, for:

- Prevention of Mother to Child Transmission (PMTCT) activities, except those that generate medical and biohazardous materials;
- Voluntary Counseling and Testing (VCT) activities, except those that generate medical and biohazardous materials;
- Clinical interventions, care or treatment, except those that involve human or animal trials or generate medical and biohazardous materials;
- Psychosocial support programs
- Orphans and vulnerable children (OVC) support;
- System strengthening, except those that could entail facility repair/rehabilitation and development of potable water supplies;
- Behavior change interventions (abstinence/faithfulness, etc.), information, education, and communications (IEC), etc.;
- Social marketing (condoms, other prevention), etc;
- Maternal and Child Health (MCH) and Reproductive Health programs, except those which support the provision of immunization and vaccination services.
- Services for person with disabilities (PWD) activities except those that generate medical and biohazardous material;

A Negative Determination with Conditions is issued to AO1 Health and Nutrition Status of the Haitian Population Improved for the activities listed below, pursuant to 22 CFR216.3 (a)(2)(iii), for Health Program activities that have potential for negative impact on the environment in the following categories:

- Procurement and management of public health commodities,
• Medical waste handling and management,
• Small-scale construction and renovation activities,
• Tuberculosis treatment in health care facilities,
• Point-of-use water treatment technologies,
• Small scaled development and rehabilitation of potable water supplies,
• Small scaled development and rehabilitation of sanitation facilities,
• Sub-granting activities for health actions, clinical or operational research concerning human research subjects.
• Nutrition and Health related agricultural activities such as: Establishment of a small seed bank to provide high quality seedlings for plants that are more difficult to grow and improve production of community residents cultivating home gardens.
• Establish small animal production units to increase access of families to animal-source proteins.

Conditions include:

• An Environmental Mitigation and Monitoring Plan (EMMP) shall be prepared by the Implementing Partners for the listed activities, or future activities that receive a Negative Determination with Conditions Threshold Determination. The EMMP shall be approved by the COR/AOR, MEO, and REA prior to any implementation. As well, the Health Team will work with its implementing partners in the following areas, in accordance with the following conditions and mitigation actions associated with the recommended Negative Determination with Conditions.

• The EMMP will incorporate key guidance and mitigation measures found in USAID Guidelines (to be discussed in more detail later in this narrative) and appropriate Government of Haiti guidelines (discussed in more detail later in this narrative):
  o Health;
  o Medical Waste;
  o Small-scale Construction;
  o Water and Sanitation;
  o Agriculture; and

• The Health Team Leader, in consultation with Mission CORs, activity managers and implementing partners, Mission Environmental Officers (MEO), Regional Environmental Advisors (REA), and/or Bureau Environmental Officers (BEO) as appropriate, will actively monitor and evaluate whether environmental consequences unforeseen under activities covered by this IEE arise during implementation, and modify or end activities as appropriate. If additional activities are added at the Program Area levels that are not
described in this document, an amended IEE must be prepared.

- Health Program procurements should include consideration of the offeror’s ability to perform the mandatory environmental compliance requirements as envisioned. The Contract/Grant Officer (CO) shall include required environmental compliance and reporting language into each implementation instrument, and ensure that appropriate resources (budget), qualified staff, equipment, and reporting procedures are dedicated to this portion of the project.

- Health Program implementing partners will complete an annual environmental mitigation and monitoring report of all activities unless specified otherwise. This reporting should be incorporated into pertinent Performance Monitoring and Evaluation Plans and annual work plans. The environmental monitoring report should be submitted to the COR or activity manager by the end of September each year. The COR or activity manager will compile these reports into an overall Health Program Area report so that the results can be included in the Operational Plan (OP) reporting process to Congress.

- For all Health Program activities entailing service delivery, including blood testing and laboratory support, implementing partners are required to complete the Healthcare Waste Management Minimum Program Checklist and Action Plan (Annex 2) annually.

- Any grants or fund transfers from the implementing partners to other organizations must incorporate provisions stipulating that:
  a. an annual environmental monitoring report will be completed, and
  b. activities to be undertaken will be within the scope of the environmental determinations and recommendations of this IEE. This includes assurance that any mitigating measures required for those activities be followed.
  c. Completion of EMMP Table 1, Environmental Risk Assessment. If environmental effects are expected, a full EMMP is required.

- The Health Team Leader, CORs and activity managers will undertake field visits and consultations with implementing partners to jointly assess the environmental impacts of ongoing activities, and associated mitigation and monitoring conditions.

- The implementers’ periodic reports to USAID will include a brief update on mitigation and monitoring measures being implemented, results of environmental monitoring, and any other major modifications/revisions in the development activities, and mitigation and monitoring procedures.

- The Health Team will ensure that implementing partners have sufficient capacity to complete the environmental screening process and to implement mitigation and monitoring measures.

- Implementation will in all cases adhere to applicable host country environmental laws and policies.
A Positive Determination is issued to AO1 Health and Nutrition Status of the Haitian Population Improved for large-scale construction (footprint of over 10,000 sq ft.) of health related facilities. This may include construction of facilities for the disabled. This IEE does not address the use of pesticides, support for which would require the development of/or to follow the Mission wide Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP).

General Implementation Conditions: Project-level Implementation Procedures

The following project-level implementation procedures are recommended as a general condition for approval of this IEE. Contingent upon such approval, their implementation will therefore be mandatory. They are intended to ensure that the IEE findings and conditions are implemented in project work plans, monitoring and reporting requirements. USAID/Haiti Health Office shall undertake the following for each project under this portfolio:

1. The Health Team Office Chief or A/COR will provide to the prime contractor for a project (“the contractor” or “implementing partner”) the IEE conditions and the activities to which they apply.

2. The contractor or Implementing partner(s) will develop an Environmental Mitigation and Monitoring Plan (EMMP) describing how the project will, in particular terms, implement those conditions in the IEE that apply to project activities, including monitoring to assure appropriate implementation and sufficiency of environmental compliance measures. This shall include training of contractor staff and partners, where appropriate. This EMMP shall be reviewed and approved by the A/COR, MEO, and REA before implementation begins.

3. The contractor or Implementing Partner(s) shall integrate these environmental compliance measures into the project work plan and reported on them in the normal basis of project reporting. The A/COR shall assure that this integration occurs.

4. The Implementing partner will notify USAID/Haiti’s Health Office of any work plan activities outside the scope of the IEE, and either the HIV or the Health Office Chief along with A/CORs and Activity Managers, will independently audit the work plan against the scope of the IEE.

5. Any activities NOT addressed within the IEE must be addressed with an IEE amendment or Environmental Assessment. This amendment must be approved before the activities in question can go forward.

6. The Health Office shall assure that these Implementing Partner’s responsibilities will be incorporated into contracts, grants or any other agreement and SOWs. The Health Office shall coordinate with the Contracting Officer to assure that the ETD/IEE is attached to all agreements and contracts, and that the environmental compliance language (ADS204sac) is used to incorporate necessary environmental compliance direction. ADS 204sac can be found here: http://www.usaid.gov/ads/policy/200/204sac
7. Prior to and during implementation, USAID/Haiti Health Office with the assistance of the Mission Environmental Officer and/or the Regional Environmental Advisor as necessary, will discuss IEE conditions with the contractor; and if and where necessary, come to appropriate agreement regarding the process for implementing these conditions as a mid-project adjustment.

8. As devising and implementing environmental compliance and implementation approaches should be an integral part of work plan development, these procedures place this responsibility principally on prime contractors. The A/COR and MEO shall conduct spot checks to monitor the implementation of the conditions and mitigation measures outlined in this IEE. Where such review and monitoring indicates unforeseen environmental impacts or that mitigation and control measures are insufficient, the Health Office will consult promptly with the Regional Environmental Advisor (REA) at USAID/Dominican Republic in Santo-Domingo.

9. In addition and as appropriate, the Health Office may facilitate the delivery of activity-specific environmental training to the contractor.

Amendments

- Amendments to Initial Environmental Examinations (IEE) shall be submitted for LAC Bureau Environmental Officer (BEO) approval for any activities not specifically covered in the IEE, which include:
  - Funding level increase beyond ETD amount,
  - Time period extension beyond ETD dates (even for no cost extension), or
  - A change in the scope of work, such as the use of pesticides or activities subject to Foreign Assistance Act sections 118 and 119 (e.g. procurement of logging equipment), among others.

- Amendments to IEEs include Environmental Assessments (EA or PEA) and approval of these documents by the LAC BEO could require an annual evaluation for environmental compliance.

Victor H. Bullen
Bureau Environmental Officer
Bureau for Latin America & the Caribbean

Copy to: Christian Barrett, Acting Mission Director
         Jennifer Graetz, D/MD
         Michelle Russell, H
         Stephane Morisseau, H
Brandy Witthoft, PCPS
Ryan Knight, MEO
Abdel Abellard, Dep MEO

Copy to: Michael Donald, Regional Environmental Advisor, USAID/DR

Copy to: Belinda Bernard, Gene George, LAC/CAR
Jennifer Slotnick, Natalia Machuca LAC/RSD

Copy to: IEE File

File: P:\LAC.RSD.PUB\ENV\Reg 216\IEE\IEE16\ LAC-IEE-16-14 ETD (HA – AO1 Health).docx
Pillar C (part 1)

Health

Initial Environmental Examination (IEE)
TABLE OF CONTENTS

Overview: Initial Environment Examination: Functional Objective “Investing in People-Program Area Health”

1. Summary of Findings 6
2. Threshold Environmental Determinations 6
   Categorical Exclusions 7
   Negative Determinations with Conditions 8
   Positive Determination 9
3. Summary of Monitoring and Reporting Measures 9

Initial Environment Examination: Functional Objective “Investing in People” Program Area Health”

   Acronym List 12

1. **Background and Project Description** 11
   1.1 Purpose and Scope of IEE……………………………………… 14
   1.2 Overview of USAID/ Haiti Health Program 15
   1.3 Program Description and Activities 17
   1.4 Program Geographic Focus 34
   1.5 Country and Environmental Information 34

2. **Country and Environmental Information (Baseline Information)** 34
   2.1 Overall Assessment of the Health System and Epidemiological Profile 37
   2.2 Medical Waste Disposal Regulations, Policies & Practices 37
   2.3 Haiti’s Environmental policies and procedures 38

3. **Evaluation of Programs with Respect to Environmental Impacts** 41
   3.1 Procurement and Management of Public Health Commodities 42
   3.2 Medical Waste Handling and Management 43
   3.3 Incineration process of medical waste 46
   3.4 Risks associated with TB screening process in clinics supported by USAID 47
   3.5 Small-scale and Large scale new Construction, Rehabilitation, and Renovation of Health Facilities 49
   3.6 Small-Scale Water and Sanitation Activities and Point-of-Use Water Treatment Technologies 50
   3.7 Environmental Impacts Reviewed by Program Elements and Sub-Elements 53

4. **Recommended Determinations and Mitigation Actions** 64
   4.1 Categorical Exclusions 65
   4.2 Negative Determinations with Conditions 66
   4.3 Positive Determination 67
   4.4 General implementation conditions: Project-level implementation Procedures 69
5. Monitoring and Reporting  82

ANNEXES:
   Annex 1: Environmental Mitigation and Monitoring Plan form  83
INITIAL ENVIRONMENTAL EXAMINATION (IEE)
SUMMARY PAGE AND RECOMMENDED ACTION

Pillar C – Priority 1: Health

Country: Haiti

Assistance Objective: Health and Nutrition Status of the Haitian Population Improved

Program Activity Title: Pillar C – Priority 1: Health

Program Area: 3.1: Health

Program Activities: HIV/AIDS; Tuberculosis (TB); Maternal and Child Health (MCH); Family Planning and Reproductive Health (FP/RH), Services for Persons with Disabilities, Construction/Reconstruction of Health Facilities, Health Systems Strengthening, Nutrition.

Funding Period: October 1, 2015 – September 30, 2018

Authorized Funding Level: $406,000,000

IEE Amendment? No


IEE Prepared Stephane Morisseau Public Health Advisor, USAID/Haiti
Nathalia Machuca,GHFP Technical Advisor,USAIDLAC/RSD/PHN

By: Abdel Abellard, Deputy MEO, USAID/Haiti

Date: November 19, 2015

<table>
<thead>
<tr>
<th>ENVIRONMENTAL ACTION RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Categorical Exclusion: ☒</td>
</tr>
<tr>
<td>Positive Determination: ☒</td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td>Deferral: ☐</td>
</tr>
</tbody>
</table>
Clearance Page:

MEO: Ryan Knight: __________________________ Date: 12/4/2015

REA: Bruce Bayle: __________________________ Date: 12/03/2015

Health Office Chief: Michele Russell: __________________________ Date: 12/4/15

PCPS A/Office Chief: Brandy Witthoft: __________________________ Date: 12/4/2015

A/DMD: Jennifer Graetz: __________________________ Date: 9/12/15

Approval: Jonathan Conly __________________________ Date: 12/17/15

Acting Mission Director
SUMMARY OF FINDINGS

This IEE addresses USAID/Haiti Health Program (Assistance Objective 3 “Health and Nutrition Status of the Haitian population Improved”, Program Area 3.1 “Health”) funded with Global Health Programs (GH-C and GH-C-POP) and HIV/AIDS funding under the President’s Emergency Plan for AIDS Relief (PEPFAR). The current health strategy covers the Program Elements 3.1.1 HIV/AIDS, 3.1.2 Tuberculosis (TB), 3.1.6 Maternal and Child Health (MCH), 3.1.7 Family Planning and Reproductive Health (FP/RH), services for persons with disabilities, and Construction/Reconstruction of health facilities health systems strengthening in Haiti. USAID/Haiti’s health strategy contributes to the use of HIV/AIDS and other primary health care (PHC) services, which significantly contribute to the reduced impact of the disease in Haiti.

The Health Program has a planned funding level estimated at $406,000,000 for FY16-FY18. If there are further changes in level of funding, a shift in the health strategy, changed time frame of project, changed geographic scope, or changed funding amounts, an amendment to this IEE will be submitted.

This IEE supersedes the current IEE (LAC-IEE-11-03) “Pillar C – Priority 1: Health”. The majority of the health program activities covered by the previous IEE will continue, including PEPFAR HIV/AIDS activities, small scale building renovations, and health service delivery.

For all Pillar C mechanisms that are not listed under this current IEE, an amendment to this IEE will be completed by the Health Team and submitted to the LAC Bureau Environmental Officer for the issuance of a new Environmental Threshold Decision (ETD).

SUMMARY of RECOMMENDED THRESHOLD ENVIRONMENTAL DETERMINATIONS
Recommended threshold determinations for activities under this program are summarized below.

1. **Categorical Exclusions**

A *Categorical Exclusion* is recommended for the activities listed below, because no environmental impacts are expected as a result of these activities. These fall under the following citations from Title 22 of the Code of Federal Regulations, Regulation 216 (22 CFR 216), subparagraph 2(c)(2) as classes of activities that do not require an initial environmental examination:

- (i) Activities involving education, training, technical assistance or training programs except to the extent such programs include activities directly affecting the environment (such as construction of facilities, etc.);
- (iii) Activities involving analyses, studies, academic or research workshops and meetings;
- (v) Activities involving document and information transfers;
- (viii) Programs involving nutrition, health care, or family planning services except to the extent designed to include activities directly affecting the environment (such as construction of facilities, water supply systems, waste water treatment, etc.);
- (xiv) Studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment (such as construction of facilities, etc.).

For specific intervention areas, *Categorical Exclusions* are recommended, per the above, for:

- Prevention of Mother to Child Transmission (PMTCT) activities, except those that generate medical and biohazardous materials;
- Voluntary Counseling and Testing (VCT) activities, except those that generate medical and biohazardous materials;
- Clinical interventions, care or treatment, except those that involve human or animal trials or generate medical and biohazardous materials;
- Psychosocial support programs
- Orphans and vulnerable children (OVC) support;
- System strengthening, except those that could entail facility repair/rehabilitation and development of potable water supplies;
- Behavior change interventions (abstinence/faithfulness, etc.), information, education, and communications (IEC), etc.;
- Social marketing (condoms, other prevention), etc;
- Maternal and Child Health (MCH) and Reproductive Health programs, except those which support the provision of immunization and vaccination services.
- Services for person with disabilities (PWD) activities except those that generate medical and biohazardous material;
2. Negative Determinations with Conditions

A Negative Determination with Conditions is recommended, pursuant to 22 CFR 216.3 (a)(2)(iii), for Health Program activities that have potential for negative impact on the environment in the following categories:

- Procurement and management of public health commodities,
- Medical waste handling and management,
- Small-scale construction and renovation activities,
- Tuberculosis treatment in health care facilities,
- Point-of-use water treatment technologies,
- Small scaled development and rehabilitation of potable water supplies,
- Small scaled development and rehabilitation of sanitation facilities,
- Sub-granting activities for health actions, clinical or operational research concerning human research subjects.
- Nutrition and Health related agricultural activities such as: Establishment of a small seed bank to provide high quality seedlings for plants that are more difficult to grow and improve production of community residents cultivating home gardens.
- Establish small animal production units to increase access of families to animal-source proteins.

An Environmental Mitigation and Monitoring Plan (EMMP) shall be prepared by the Implementing Partners for the listed activities, or future activities that receive a Negative Determination with Conditions Threshold Determination. The EMMP shall be approved by the COR/AOR, MEO, and REA prior to any implementation. As well, the Health Team will work with its implementing partners in the following areas, in accordance with the following conditions and mitigation actions associated with the recommended Negative Determination with Conditions.

EMMP will incorporate key guidance and mitigation measures found in USAID Guidelines (to be discussed in more detail later in this narrative) and appropriate Government of Haiti guidelines (discussed in more detail later in this narrative):

- Health;
- Medical Waste;
- Small-scale Construction;
- Water and Sanitation;
- Agriculture; and

3. Positive Determination

A Positive Determination is recommended for large scale construction (footprint of over 10,000 sq ft.) of health related facilities. This may include construction of facilities for the disabled.

This IEE does not address the use of pesticides, support for which would require the development of/or to follow the Mission wide Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP).
See Section 4 of this IEE for a more detailed description of the recommended threshold determinations and associated conditions and mitigation measures.

**SUMMARY OF MONITORING AND REPORTING MEASURES**

1. The Health Team Leader, in consultation with Mission CORs, activity managers and implementing partners, Mission Environmental Officers (MEO), Regional Environmental Advisors (REA), and/or Bureau Environmental Officers (BEO) as appropriate, will actively monitor and evaluate whether environmental consequences unforeseen under activities covered by this IEE arise during implementation, and modify or end activities as appropriate. If additional activities are added at the Program Area levels that are not described in this document, an amended IEE must be prepared.

2. Health Program procurements should include consideration of the offeror’s ability to perform the mandatory environmental compliance requirements as envisioned. The Contract/Grant Officer (CO) shall include required environmental compliance and reporting language into each implementation instrument, and ensure that appropriate resources (budget), qualified staff, equipment, and reporting procedures are dedicated to this portion of the project.

3. Health Program implementing partners will complete an annual environmental mitigation and monitoring report of all activities unless specified otherwise. This reporting should be incorporated into pertinent Performance Monitoring and Evaluation Plans and annual work plans. The environmental monitoring report should be submitted to the COR or activity manager by the end of September each year. The COR or activity manager will compile these reports into an overall Health Program Area report so that the results can be included in the Operational Plan (OP) reporting process to Congress.

4. For all Health Program activities entailing service delivery, including blood testing and laboratory support, implementing partners are required to complete the Healthcare Waste Management Minimum Program Checklist and Action Plan (Annex 2) annually.

5. Any grants or fund transfers from the implementing partners to other organizations must incorporate provisions stipulating that:
   a) an annual environmental monitoring report will be completed, and
   b) activities to be undertaken will be within the scope of the environmental determinations and recommendations of this IEE. This includes assurance that any mitigating measures required for those activities be followed.
   c) Completion of EMMP Table 1, Environmental Risk Assessment. If environmental effects are expected, a full EMMP is required.

6. The Health Team Leader, CORs and activity managers will undertake field visits and consultations with implementing partners to jointly assess the environmental impacts of ongoing activities, and associated mitigation and monitoring conditions.

7. The implementers’ periodic reports to USAID will include a brief update on mitigation and monitoring measures being implemented, results of environmental monitoring, and any other major modifications/revisions in the development activities, and mitigation and monitoring procedures.
8. The Health Team will ensure that implementing partners have sufficient capacity to complete the environmental screening process and to implement mitigation and monitoring measures.
9. Implementation will in all cases adhere to applicable host country environmental laws and policies.

General Implementation Conditions: Project-level Implementation Procedures

The following project-level implementation procedures are recommended as a general condition for approval of this IEE. Contingent upon such approval, their implementation will therefore be mandatory. They are intended to ensure that the IEE findings and conditions are implemented in project work plans, monitoring and reporting requirements. USAID/Haiti Health Office shall undertake the following for each project under this portfolio:

10. The Health Team Office Chief or A/COR will provide to the prime contractor for a project (“the contractor” or “implementing partner”) the IEE conditions and the activities to which they apply.
11. The contractor or Implementing partner(s) will develop an Environmental Mitigation and Monitoring Plan (EMMP) describing how the project will, in particular terms, implement those conditions in the IEE that apply to project activities, including monitoring to assure appropriate implementation and sufficiency of environmental compliance measures. This shall include training of contractor staff and partners, where appropriate. This EMMP shall be reviewed and approved by the A/COR, MEO, and REA before implementation begins.
12. The contractor or Implementing Partner(s) shall integrate these environmental compliance measures into the project work plan and reported on them in the normal basis of project reporting. The A/COR shall assure that this integration occurs.
13. The Implementing partner will notify USAID/Haiti’s Health Office of any work plan activities outside the scope of the IEE, and either the HIV or the Health Office Chief along with A/CORs and Activity Managers, will independently audit the work plan against the scope of the IEE.
14. Any activities NOT addressed within the IEE must be addressed with an IEE amendment or Environmental Assessment. This amendment must be approved before the activities in question can go forward.
15. The Health Office shall assure that these Implementing Partner’s responsibilities will be incorporated into contracts, grants or any other agreement and SOWs. The Health Office shall coordinate with the Contracting Officer to assure that the ETD/IEE is attached to all agreements and contracts, and that the environmental compliance language (ADS204sac) is used to incorporate necessary environmental compliance direction. ADS 204sac can be found here: http://www.usaid.gov/ads/policy/200/204sac
16. Prior to and during implementation, USAID/Haiti Health Office with the assistance of the Mission Environmental Officer and/or the Regional Environmental Advisor as necessary, will discuss IEE conditions with the contractor; and if and where necessary, come to appropriate agreement regarding the process for implementing these conditions as a mid-project adjustment.
17. As devising and implementing environmental compliance and implementation approaches should be an integral part of work plan development, these procedures place this responsibility principally on prime contractors. The A/COR and MEO shall conduct spot checks to monitor the implementation of the conditions and mitigation measures outlined in this IEE. Where such review and monitoring indicates unforeseen environmental impacts or that mitigation and control measures are insufficient, the Health Office will consult promptly with the Regional Environmental Advisor (REA) at USAID/Dominican Republic in Santo-Domingo.

18. In addition and as appropriate, the Health Office may facilitate the delivery of activity-specific environmental training to the contractor.
<table>
<thead>
<tr>
<th>ACRONYM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC</td>
<td>Abstinence, Be Faithful, Use a Condom</td>
</tr>
<tr>
<td>ADS</td>
<td>Automated Directive Systems</td>
</tr>
<tr>
<td>ANC</td>
<td>Antenatal Care</td>
</tr>
<tr>
<td>ARV, ART</td>
<td>Anti-retroviral (therapy, treatment)</td>
</tr>
<tr>
<td>BEST</td>
<td>Byen Etre ak Sante Timoun</td>
</tr>
<tr>
<td>CBO</td>
<td>Community-Based Organization</td>
</tr>
<tr>
<td>CDC</td>
<td>U.S. Centers for Disease Control and Prevention</td>
</tr>
<tr>
<td>COR</td>
<td>Contracting Officer Representative</td>
</tr>
<tr>
<td>DOTS</td>
<td>Directly Observed Therapy, Short Course (strategy for therapy of TB)</td>
</tr>
<tr>
<td>DSD</td>
<td>Department of Social Development</td>
</tr>
<tr>
<td>EMPR</td>
<td>Environmental Mitigation Plan and Monitoring Report</td>
</tr>
<tr>
<td>EPI</td>
<td>Expanded Program on Immunization</td>
</tr>
<tr>
<td>EPTM</td>
<td>Environmental Procedures Training Manual</td>
</tr>
<tr>
<td>EPCMD</td>
<td>End Preventable Maternal and Child Deaths</td>
</tr>
<tr>
<td>FBO</td>
<td>Faith-Based Organization</td>
</tr>
<tr>
<td>FHI</td>
<td>Family Health International</td>
</tr>
<tr>
<td>GOH</td>
<td>Government of Haiti</td>
</tr>
<tr>
<td>HBC</td>
<td>Home-Based Care</td>
</tr>
<tr>
<td>HCW</td>
<td>Health Care Waste</td>
</tr>
<tr>
<td>HFG</td>
<td>Health Finance and Governance</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>IEC</td>
<td>Information, Education, Communication</td>
</tr>
<tr>
<td>IEE</td>
<td>Initial Environmental Examination</td>
</tr>
<tr>
<td>IMCI</td>
<td>Integrated Management of Childhood Illness</td>
</tr>
<tr>
<td>JHPIEGO</td>
<td>The Johns Hopkins Program for International Education in Gynecology and Obstetrics</td>
</tr>
<tr>
<td>LMG</td>
<td>Leadership Management and Governance</td>
</tr>
<tr>
<td>MCH</td>
<td>Maternal and Child Health</td>
</tr>
<tr>
<td>MCSP</td>
<td>Maternal Child Saving</td>
</tr>
<tr>
<td>MECs</td>
<td>Members of Provincial Executive Councils</td>
</tr>
<tr>
<td>MEO</td>
<td>Mission Environmental Officer</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
</tr>
<tr>
<td>NHLS</td>
<td>National Health Laboratory Services</td>
</tr>
<tr>
<td>NIH</td>
<td>U.S. National Institutes of Health</td>
</tr>
<tr>
<td>NVP</td>
<td>Nevirapine</td>
</tr>
<tr>
<td>OGAC</td>
<td>Office of the Global AIDS Coordinator</td>
</tr>
<tr>
<td>OI</td>
<td>Opportunistic Infection</td>
</tr>
<tr>
<td>OVC</td>
<td>Orphans and Vulnerable Children</td>
</tr>
<tr>
<td>OVH</td>
<td>Orphans and Vulnerable Households</td>
</tr>
<tr>
<td>PEPFAR</td>
<td>President’s Emergency Plan for AIDS Relief</td>
</tr>
<tr>
<td>PHC</td>
<td>Primary Health Care</td>
</tr>
<tr>
<td>PLWHA</td>
<td>People Living with HIV/AIDS</td>
</tr>
<tr>
<td>PMTCT</td>
<td>Prevention of mother-to-child transmission</td>
</tr>
<tr>
<td>QA</td>
<td>Quality Assurance</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>RBF</td>
<td>Results Based Financing</td>
</tr>
<tr>
<td>RH/FP</td>
<td>Reproductive Health/Family Planning</td>
</tr>
<tr>
<td>RHAP</td>
<td>Regional HIV/AIDS Program</td>
</tr>
<tr>
<td>RTKs</td>
<td>Rapid Test Kits</td>
</tr>
<tr>
<td>SCMS</td>
<td>Supply Chain Management System</td>
</tr>
<tr>
<td>STI</td>
<td>Sexually Transmitted Infection</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>UEP</td>
<td>Unite d’Etudes et de Programmation</td>
</tr>
<tr>
<td>UNAIDS</td>
<td>United Nations AIDS Program</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>VCT</td>
<td>Voluntary HIV Counseling and Testing</td>
</tr>
<tr>
<td>VRS</td>
<td>Verifications Des Resultats</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
SECTION 1: Background and Project Description

1.1 Purpose and Scope of IEE

The purpose of this IEE is to provide threshold determinations of environmental impact and conditions for mitigation for USAID/Haiti activities implemented in Haiti under the Assistance Objective “Investing in People”, Program Area “Health” (Health Program) with USAID GH-C and GH-C-POP, and HIV/AIDS funding under the President’s Emergency Plan for AIDS Relief (PEPFAR).

This IEE covers “Pillar C – Priority 1: Health” IEE, funding period Oct 1, 2015 to September 30, 2018. The three year timeframe aligns the IEE with the Health Office’s strategy outlined under “Pillar C: Health and Other Basic Services” activity approval document (AAD). This IEE covers select Health Program activities funded during the period FY 2016 through FY 2018. The funding for these actions falls within the LAC-IEE-11-03 project funding level.

Under this IEE, many activities (maternal and child health, tuberculosis, family planning, and health system strengthening) covered in the previous IEE (LAC-IEE-11-03) will continue. Health Program activities implemented with HIV/AIDS funding under PEPFAR fall under the areas of HIV/AIDS prevention, treatment, care and support, and support services for Orphans and Vulnerable Children (OVCs). In addition, this IEE will include the reconstruction and rehabilitation of health facilities and implementation of a small subgrants program.

The Health Program has a planned funding level estimated at $406,000,000, for 3 years (FY15-FY18). The following is a list of funding by activity:

- **HIV/AIDS $153,000,000**;
- **Tuberculosis $0,000,000**;
- **Maternal Child Health $5,000,000**;
- **Nutrition $20,000,000**;
- **Family Planning -POP- $37,000,000**;
- **Disability Care $5,000,000**;
- **Health Systems Strengthening $10,000,000**
  - **Physical Infrastructure $67,000,000**
  - **Health and Nutrition Service Delivery $60,000,000**.

Amendments to this IEE will be submitted if there are significant changes in the scope of the activities or major shift in the health strategy.

1.2 Overview of USAID/Haiti Health Program

USAID/Haiti targets and integrates investments across three geographic corridors identified by the Government of Haiti (GOH) as priority growth poles for development. These activities, implemented through new and existing procurements, emphasize the use and capacity-building
of local NGOs and firms, results-based financing, and programmatic innovations. Using a structural approach, that models how the Ministry of Health (MOH) system works at the local level, the USG will support a holistic model of service delivery under the decentralized leadership of the MOH, with the goal of increasing access to services for an additional ~20% of the population in priority corridors areas through an integrated package of essential services that includes activities in maternal and child health, family planning, nutrition, water, sanitation and hygiene practices, and prevention and control of diseases of major importance, including HIV/AIDS and tuberculosis. Outreach and health education at the community level, as well as social marketing activities, are essential elements of the holistic approach to ensure access to services in hard-to-reach and underserved populations.

**Geographic Scope**: The geographic scope of this program is based on our ADD that specifies that health activities should be concentrated in the three economic growth corridors. However, health activities are implemented nationwide. A more detail geographic implementation is detail in the description of the health activities. Implementation of the health activities are Haiti wide and further information regarding site specific project will be addressed in the EMMP.

Reports from the MOH and other observers indicate that health services are inadequate throughout the metropolitan area in three key MOH national programs: family planning, tuberculosis, and routine immunization. Therefore, current and future funding will be used to support the provision of maternal and child health, immunization, family planning, and tuberculosis services in public sector facilities in the Port-au-Prince metropolitan area to ensure the availability of needed commodities (contraceptives, TB drugs and screening supplies, and vaccines), adequate staffing, adequate training and supervision of staff, and regular reporting in hospitals and key community clinics to ensure wide access to these three national programs.

Current year and future year funding will also help rebuild health infrastructure, both physical and system strengthening. The USG is working on reconstruction and rehabilitation of health facilities throughout Haiti. These facilities will be strategically selected and placed, in consultation with the MOH, within the USG priority corridors to serve post-earthquake settlements or economic growth zones and expand access to services for underserved communities. When feasible, Haiti Health Infrastructure Program will incorporate sustainable features such as solar panels, solar water heating, etc. in designs for all construction and/or renovation programs. The ability for the MOH to operate and maintain such systems will be taken into consideration during the design and planning phases.

In terms of system strengthening, the USAID funding supports capacity building in three areas: (1) establishing a fully MOH-staffed governance unit to plan and manage performance-based contracting for services and manage external funds supporting service delivery; (2) consolidating administrative and management systems functioning under MOH supervision to address critical management systems and policy changes impeding priority services, covering: human resources; medicines and logistics; financing; information; quality improvement; and governance; and (3) training critically needed new medical, nursing, midwifery, allied health personnel, and community health workers and placing them under proper supervision and working conditions nationwide.
USAID funding will also increase access to quality services for persons with disabilities and establishing systems and programs within key government ministries and non-governmental organizations to ensure that government and civil society have the capacity to provide care and rehabilitation services for persons with disabilities and re-integrate them into society, as well as promote the inclusion of the disabled in all aspects of Haitian society.

While HIV/AIDS constitutes the bulk of the health portfolio, the Health Program continues to provide assistance in enhancing the delivery of primary health care services under the following four Program Elements. In accordance with the Foreign Assistance Framework, they are:

- 3.1.1 HIV/AIDS
- 3.1.2 Tuberculosis (TB)
- 3.1.6 Maternal and Child Health (MCH)
- 3.1.7 Family Planning and Reproductive Health (FP/RH)
  Access to Services for Persons with Disabilities
  Health System strengthening

In addition, the Health Program will also implement a sub grant component for health organizations and rehabilitation and reconstruction of health facilities.

Gender integration is a priority consideration in all USAID’s health programs to ensure the involvement of both women and men in leadership, planning, decision-making, implementation and assessment. Increasing male involvement in HIV prevention, treatment and care is also a key part of the USAID health program. Given the multi-faceted impact of the epidemic, the Health Program will continue to be multi-sectoral. The elements of USAID’s multi-sectoral approach are based on linkages between all Assistance Objectives of the Mission.

1.3 Program Description and Activities

Program Component I: Access to Essential Health, Nutrition, and Family Planning Services (Intermediate Result #1: Access to essential health, nutrition, and family planning services increased)

This component covers Maternal and Child Health (MCH) and Family Planning and Reproductive Health (FP/RH) Activities, HIV/AIDS, Tuberculosis and Nutrition.

In coordination with the MOH, NGOs, and other donors, USAID expects to improve health and nutrition status in Haiti by 1) supporting the provision of integrated essential health, family planning and nutrition programs and services in ten to twelve communes in the USG development corridors, with particular attention paid to populations affected by the January 2010 earthquake; 2) supporting continued coverage of essential health, nutrition and family planning to key vulnerable populations outside of the development corridors, and 3) ensuring targeted essential health care services for displaced populations in the greater Port-au-Prince area.

Higher-level outcomes for increased access to essential health, nutrition, and family planning services activities include reduced infant mortality rates, reduced maternal mortality ratio,
increased contraceptive prevalence, lower prevalence rates of infectious diseases (HIV, tuberculosis, and cholera), and reduced levels of wasting in children less than five years old and improved sanitation and hygiene practices.

Support for essential health, nutrition, and family planning services within development corridors: USAID works with the MOH at the departmental level to ensure continuity of services for the communities where USAID currently provides support (approximately 50% of the population.) USAID also supports the expansion of essential services to communities that have no access at this time, by focusing new investments in the USG development corridors and the planned settlements. The development corridor communes, where comprehensive health services will be delivered, lie within the North, North East, Artibonite and West Departments.

USAID will work with these MOH Departmental Health Directorates on planning and implementation of service expansion and systems strengthening. Improvements in healthcare delivery and increased access in cities and communes throughout the growth corridors will play a leading role in attracting people to these new resettlement areas.

Achieving full scale health, nutrition and family planning coverage for the communities in the targeted USG priority corridors will maximize the development impact of the inter-sectoral strategy. For example, envisioned improvements in nutrition security will be closely tied to expanded agricultural production/food security both through increased consumption of nutritious local foods and through overall increased food consumption tied to increased household income. Meeting the unmet demand for family planning services will be an important component of mid-to long-term economic development and improvement in reducing environmental degradation and will position Haiti for greater success in meeting the key education, health, and employment needs of its growing population. The involvement of key NGOs, and partnering with and under the leadership of the MOH, will be critical to the success of the strategy.

Support for continued coverage of essential health, nutrition, and family planning services outside the USG development corridors: USAID currently supports the provision of essential health, nutrition, and family planning services to approximately 50% of the Haitian population throughout all ten Departments. USAID will continue its support for services currently being provided outside the priority corridors, focusing on demographic targets of concern. Those targets include women, youth, orphans and vulnerable children; tuberculosis-infected and HIV-positive people in need of care; and January 2010 earthquake-displaced populations needing access to essential care. Important elements of ensuring access to services in hard-to-reach and underserved populations include outreach and health education at the community level and community-based approaches for a range of services (i.e., management of acute malnutrition, increased access to contraceptive services). These will include the MOH agreed upon “basic package” of health service including outreach and health education at the community level and community-based approaches for a range of services (i.e., management of acute malnutrition, increased access to contraceptive services) including P.L. 480 activities (health education to pregnant and lactating women, distribution of food rations, provision of immunization and vitamin A supplementation).
Support for immunization, tuberculosis services and family planning services in MOH hospitals and key health centers in the metropolitan Port au Prince area: While the large influx of health assistance for populations in the greater Port au Prince area following the January 2010 earthquake has resulted in increased access to essential care services, it is uneven and in some cases, diminishing as the months wear on. Reports from the MOH and other observers indicate that there are inadequate services available throughout the metropolitan area in three MOH programs: family planning, tuberculosis, and routine immunization. Each program’s services should be available in all MOH facilities. Support will be provided to the MOH to ensure the availability of needed commodities (contraceptives, TB drugs and screening supplies, and vaccines), adequate staffing, adequate training and supervision of staff, and regular reporting in hospitals and key community clinics to ensure wide access to these three national programs. Other donor partners are providing the same level of support for the other essential services in the metropolitan Port au Prince area (e.g., Doctors without Borders and Project Concern International for maternity care and Action Contra la Faim and others for nutrition activities.)

This Program Area also includes activities in HIV/AIDs support. In the prevention area, USAID assists government efforts to: (1) promote the Abstinence, Be faithful, and always use a Condom (ABC) message through mass and community based communication activities; (2) continue the provision of technical support for condom and PMTCT initiatives; and, (3) address the challenges of stigma and discrimination for those infected and affected by HIV/AIDS.

In the area of treatment and care, USAID assistance will support the government’s goal of providing quality ART services. USAID partners are providing a wide variety of care and treatment assistance in support of the implementation of the GOH’s strategic plan, including: 1) provision of trained doctors, nurses, and lay counselors to augment staff at facilities in the direct delivery of ART services; 2) community-based, mobile clinic and facility-based voluntary counseling and testing (VCT) services; 3) provision of community-based workers 4) technical assistance for support systems such as information systems, logistics systems, pharmaceutical systems, laboratories, and quality assurance.

The USG’s ongoing TB program in Haiti supports 1) expansion and enhancement of the Directly Observed Treatment Short-course (DOTS); 2) management of TB and HIV; 3) provision of TB care and support. The Health Program works with 10 health departments to ensure adherence to national guidelines and to create service delivery models for rapid DOTS expansion. At the national level, the USG is helping to integrate TB with HIV and other health services through functional systems that promote HIV counseling and testing to all TB patients, and screening for TB with all HIV-infected clients. To reduce treatment interruption rates and improve adherence, the USG is helping to build partnerships between health centers and community organizations supporting DOTS.

**Illustrative List of Activities for Program A/Intermediate Results**
- Routine immunization program
- Training of staff in health-related protection protocols, management services and supplies
- Training of service providers in a full package of pre-natal and post-partum care, reproductive health, EOC, and PMTCT services
- Technical assistance to build the capacity of local NGOs to implement effective and accountable health programs
- Strengthen referral systems to departmental hospitals
- Outreach and health education at the community level
- Social marketing at the community level
- Improvements in nutrition security
- Improving support services on tuberculosis, HIV/AIDS, nutrition, and family planning
- Training on increasing access to contraceptive services and management of acute malnutrition
- Support to MOH to ensure availability of contraceptives, TB drugs and screening supplies, and vaccines, adequate staffing
- Training on supervision of staff
- Renovation and/or construction of facilities related to health and/or disabilities

**HIV/AIDS activities financed through the Health Program will cover the following Sub-Elements:**
- Preventing Mother-to-Child Transmission (PMTCT)
- Abstinence/Be Faithful
- Medical Transmission/Blood Safety
- Medical Transmission/Injection Safety
- Condoms and Other Prevention Activities
- Palliative Care: Basic Health Care and Support
- Palliative Care: TB/HIV
- Orphans and Vulnerable Children (OVC)
- Counseling and Testing
- HIV/AIDS Treatment/ARV Drugs
- HIV/AIDS Treatment/ARV Services
- Laboratory Infrastructure
- Other/Policy Analysis and System Strengthening
- Host Country Strategic Information Capacity
- Program Design and Learning
- Administration and Oversight

**TB activities financed through the Health Program will cover the following Sub-Element:**
- Care and Support

**Program Component II: Access to Services for Persons with Disabilities (Intermediate Result #2 Services for Persons with Disabilities (PWD) increased)**

**Results Expected and Performance Indicators:** In coordination with the MOH, NGOs, and other donors, USAID expects to improve access to services for persons with disabilities in Haiti USAID through the achievement of four interrelated results: (1) provision of a wide range of services for persons with disabilities; (2) training of paramedical staff, including rehabilitation technicians, prosthetists/orthotists, and
physical/occupational therapists, to support health facilities and assisted living facilities that provide services to persons with disabilities; (3) technical assistance to the Ministries of Health and Social Affairs to build capacity in standard setting, accreditation, oversight and coordination of rehabilitation and reintegration programs, and (4) capacity building assistance to organizations for disabled people and local NGOs working for people with disabilities so that these organizations can support the rights of persons living with disabilities through advocacy and education.

Illustrative List of Activities for Program Component B Includes:

1- Service Chretien $465,519, from July 2015 to July 2017
   - Capacity building of organizations and NGOs to support services to disabled people

2- ST Boniface Haiti Foundation $1million, from October 2015 to September 2017
   - Management of patients with spinal cord injury
   - Provisions of physical rehabilitation services such as therapeutic interventions and community based care
   - Provision of mobility aids and devices and adaptive equipment
   - Psycho-social support programs for counseling
   - Referral services
   - Assisted independent living services

3- BPA, Infrastructure, October 2015 to September 2016
   - Renovation of schools and rehabilitation centers to have basic physical access for people with disabilities. (a total of 6 schools will be renovated from FY 2016)

4- Handicap International: $200 000 (PEPFAR OVC) from October 2015 to September 2016
   - Management of 200 Orphans and Vulnerable children
   - Awareness activities

Program Component III: Health Systems Strengthening and Health Governance
(Intermediate Result #3 Ministry of Health’s capacity in management and oversight of health care strengthened)

To raise access to and quality of essential public health and curative services, USAID will collaborate with other donors in assisting the MOH and NGOs to strengthen systems and build capacity in three areas: (1) establishing a fully MOH-staffed governance unit to plan and manage performance-based contracting for services and manage external funds supporting service delivery; (2) consolidating administrative and management systems functioning under
MOH supervision to address critical management systems and policy changes impeding priority services, covering: human resources; medicines and logistics; financing; information; quality improvement; and governance; and (3) training critically needed new medical, nursing, midwifery, and allied health personnel and community health workers and placing them under proper supervision and working conditions nationwide.

Building on Haiti’s innovative and pioneering use of performance-based contracting systems for NGO health services, during this strategy period USAID will support a phased-transfer from current donor and NGO management to MOH operational control. Within each critical health systems function, USAID will provide assistance to address system bottlenecks that limit access and reduce quality of priority health services. To address the huge gaps in human resources, USAID is committed to support training of new workers in the cadres of highest scarcity and to support improvement of supporting systems that ensure the workers’ effectiveness, personal safety and security, and long-term retention.

**Illustrative Activities for MOH Capacity Strengthened**

- Institutional audit of MOH
- Training mid-level personnel for task shifting
- TA to MOH to implement a common reporting platform for all service deliveries
- Establishing a governance unit with other donors within MOH that plans and coordinates all sources of external health funding and also governs, manages and supervises performance-based contracts with NGOs for service delivery, staffed initially with donor-provided TA during initial strengthening and training period.
- **Strengthen MOH systems** for human resources and assist in developing policies that support task shifting medicines and logistics; financing (mobilizing, pooling, and allocating funds), and addressing the living wage issue for medical professionals.
- Technical support to create health care workforce information systems
- Capacity building and training to analyze and plan for the needed cadres of health workers in the future.
- Technical assistance to MOH to address the need for medical products and essential commodity logistics systems by creating a new set of supply chain solutions and establish strong government-led information system resources (including integrated information networks leading from facilities up to headquarters to support drug selection, ordering, procurement, and distribution with modern, web-based systems).
- Strategic planning and implementation of a new, integrated supply system
- Pharmaceutical management capacity building in the MOH
- Capacity building for making and implementing policy, and development of data in health financing
- Develop individuals with specialized skills in health economics, finance, and insurance as a contribution to the country’s effort to achieve universal access to health services and financial protection.
- Capacity building in quality improvement for health services, which will consist of setting evidence-based standards of service, establishing problem-solving teams in health facilities and other key health-related functions.
- Technical assistance to health information systems in collaboration with CDC. USAID will continue supporting development of the other health sector information systems for
functions that are complementary to and not duplicating those under CDC support. Priority-setting for health information systems investments. Develop public health and medical care information reporting for management decisions and policymaking. Development of information systems for the key health system building block functions in the health sector, including but not limited to: human resources; finances and contracting; medical products, vaccines, and for other technologies; quality improvement; and leadership and governance (including regulatory oversight functions).

- Training programs for **health workforce development** for priority cadres at public health schools. Establishment of a second public health training program. Development of health worker cadres identified as being in particularly high need by the MOH: community health workers, midwives, and nurse anesthesiologists. Training capacity in nursing schools, allied health professions, community health agent program. Establish a mechanism to involve Diaspora medical and health care professionals in teaching and mentoring.

Program Component 4: Physical Infrastructure (Note: The following infrastructure actions are included Intermediate Results 1 and 3)

USAID expects to renovate and/or construct, as well as provide essential equipment for up to 20 health facilities in support of the MOH’s Interim Recovery Plan April 2010 – September 2011 for improving health service delivery. This will include contribution to the renovation or construction of the Haitian health system’s secondary/tertiary care health facility and selected Commune Reference Hospitals (HCR) and community health centers. These facilities will be strategically selected and placed, in consultation with the MOH, within the USG priority corridors to serve new settlements or economic growth zones and expand access to services for underserved communities.

**Illustrative Activities for Component 4 Infrastructure**

- Rehabilitation and/or renovation of hospitals, health clinics, and other health facilities including housing for health staff.
- Construction for the expansion of existing hospitals and health facilities.
- New construction of new tertiary care hospital, health centers, commune hospitals, housing for health staff, and/or facilities supporting people with disabilities.
- Rehabilitation and/or new construction of potable water supplies and sanitation facilities associated with the rehabilitation and construction of health facilities.

**Partnership for Supply Chain Management/SCMS**

The purpose of this task order is to maintain and operate a safe, secure, reliable, and sustainable Supply Chain Management System (SCMS) to procure pharmaceuticals and other products needed to provide care and treatment of persons with HIV/AIDS and related infections. While the USG will continue to work around the world to combat HIV/AIDS, the President’s Emergency Plan for AIDS Relief (PEPFAR) will focus significant resources on the most
afflicted countries in Africa, the Caribbean and Asia as designated by Congress, including, but not limited to, the original fifteen focus countries under PEPFAR.

One of the primary goals described in PEPFAR: U.S. Five-Year Global HIV/AIDS Strategy" is to ensure a secure and sustainable supply of quality essential drugs, materials, and equipment for HIV/AIDS programs. Under this Task Order, the Contractor will maintain a global and in-country supply chain, build the capacity of existing supply chains where requested, and improve global coordination and collaboration. Implementation is in all ten geographic departments

**Service de Sante de Qualite Haiti South Pathfinder**

The overall purpose of the three-year (with the option of a two-year extension) Services de Santé de Qualité pour Haïti (SSQH) Central and South contract is to improve the health status of the Haitian population. This shall be achieved by: (1) increasing utilization of the Ministère de la Santé Publique et de la Population’s (MSPP) integrated package of services at the primary care and community levels (particularly in rural or isolated areas); (2) improving the functionality of the USG-supported health referral networks; (3) facilitating sustainable delivery of quality health services through the institutionalization of key management practices at both the facility and community levels; and (4) strengthening departmental health authorities’ capacity to manage and monitor service delivery. The geographic coverage of the SSQH/South is the following departments West, Central, South-East, Nippes, South, Grande-Anse.

**Service de Sante de Qualité Haïti / North JHPIEGO**

The overall purpose of the three-year (with the option of a two-year extension) Services de Santé de Qualité pour Haïti (SSQH) Central and South contract is to improve the health status of the Haitian population. This shall be achieved by: (1) increasing utilization of the Ministère de la Santé Publique et de la Population’s (MSPP) integrated package of services at the primary care and community levels (particularly in rural or isolated areas); (2) improving the functionality of the USG-supported health referral networks; (3) facilitating sustainable delivery of quality health services through the institutionalization of key management practices at both the facility and community levels; and (4) strengthening departmental health authorities’ capacity to manage and monitor service delivery. The geographic coverage of the SSQH/North is the following departments North, North-East, North-Ouest, Artibonite.

**MCSP/EPCMD/JHPIEGO**

The goal of this project is to contribute to the improvement of health outcomes for high impact priority RMNCH services. To advance USAID Haiti’s and the MSPP’s goals to end preventable maternal and child deaths (EPCMD), MCSP’s approach across the project objectives will be organized into the following four program streams: (1) Enhancing the MSPP’s technical leadership and coordination; (2) Further developing, testing and perfecting the guidelines to operationalize functional MRNs in the three department areas supported by USAID; (3) Building the capacity of key national training institutions to support the development of and maintain high functioning health workers; and (4) Establishing the mechanism and tools for
knowledge sharing of best RMNCH practices at the community level in order to accelerate alignment to MSPP policies, and convergence of strategies toward best-fit and best-practices at scale.

**Objective 1:** Provide national technical assistance to the Ministry of Public Health and Population (MSPP) to create an enabling national policy and coordination environment for improved reproductive, maternal, newborn and child health (RMNCH) in Haiti.

**Objective 2:** Establish the guidelines and technical standards for the structure and operation of three model referral networks (MRNs)—Ouanaminthe, Matheux, St. Michel De L’Attalaye—and support the SSQHs’ initial implementation of the MRN guidelines.

**Objective 3:** Increase the capacity of the national RMNCH training and education system, specifically at three National Training Hospitals and in at least one midwifery pre-service education (PSE) institution, to support the development of a health provider workforce that is equipped with the knowledge and skills to effectively provide high impact priority RMNCH services.

**Byen Etre ak Santé Timoun (BEST)/ Caris Foundation International**

The Caris Foundation is currently responsible for the support and implementation of the Haiti National Early Infant Diagnosis (EID) service. As of November 2014, Caris teams support 122 clinical sites throughout Haiti to provide EID and to follow up HIV exposed infants. Currently Caris has offices in Port Au Prince, Gonaives, Cap Haitien, Jeremie Cayes and Port de Paix. Caris Foundation is headquartered in Colleyville, Texas, USA.

“BEST support children affected and infected by HIV/AIDS in Haiti to grow into healthy, educated young adults, free from violence and the ill-effects of HIV” Mission statement.

Orphans and vulnerable children, OVC, include “Children who have lost a parent to HIV/AIDS, who are otherwise directly affected by the disease, or who live in areas of high HIV prevalence and may be vulnerable to the disease or its socioeconomic effects.” This definition is broad and includes newborns to adolescents, boys and girls, HIV+ children and those free from the disease but vulnerable to its after effects. The BEST project encompasses all aspects associated with HIV infected/affected children and pregnant women as well as engaging the community in health education and activities. From ensuring healthcare needs are met to providing education for the OVC population, this project strives to ensure that families are more financially stable and healthy.

**Health Through Walls**

The overall purpose of the project – HIV/AIDS & Tuberculosis assistance to Prisons in Haiti (HATAPH) is to provide comprehensive care to the prisoners in Haiti’s National Penitentiary, women’s and children’s prisons for the purpose of first identifying, diagnosing, treating deadly and contagious diseases within the prison population and secondly to provide much needed education awareness in HIV/AIDS sexual prevention, Tuberculosis and in water sanitation. The geographic implementation of the project is the Penitencier National, Womens Prisons, Hinche prison, Cap Haitian Prisons, Les Cayes prisons located in the Central, Ouest, South and North Departments,
**FHI 360/Linkages**

Accelerate the ability of governments, key population (KP) organizations, and private sector providers to plan, deliver and optimize services that reduce HIV transmission among KP – men who have sex with men, sex workers, people who inject drugs, and transgender people – and extend life for those who are HIV-positive. The project is expected to address gaps and challenges within linkage and retention. This can include training facility outreach nurses, case managers and community health workers in the provision of KP friendly services, identification and mobilization of existing community groups in their catchment areas to support the uptake and retention of HCT, care and treatment and PMTCT services. With the establishment of community health teams linked to the facility, effective collaboration with clinical services partners will be essential. Similarly, these community based structures will require training and capacity building on referring clients, data management and patient confidentiality, especially for KPs. Both facilities and community structures will require capacity building on how to track data of their referrals on a monthly basis and identify gaps in services related to linkage, retention and referral. Implementation in all ten departments

**Health Information System Support to UEP/Palladium**

This project will support USG efforts to build strengthened and sustainable health information systems within Haiti, allowing for the Haitian government to effectively manage and monitor program resources (both host-country and donor) and monitor patient outcomes, as well as to ensure effective, routinized information use throughout the health sector. The project will support Government of Haiti strategic health information systems, focusing on four key objectives:

OBJECTIVE 1: Build the capacity of the MOH to effectively manage strategic information systems

OBJECTIVE 2: Develop an expanded and comprehensive Carte Sanitaire platform for the UPE

OBJECTIVE 3: Support the implementation of a comprehensive HMIS

OBJECTIVE 4: Improve data quality and applied data use within GOH data reporting chains

The geographic coverage is all ten departments of Haiti

**Health Finance and Governance (HFG)**

HFG organized the third quarterly quality control and participatory review of HRH and launched the EHRIS-2. Data collection is currently conducted in two departments.

HFG provided continuous support to DFPSS to conduct reconnaissance visits in nine additional nursing schools. HFG developed an audio spot and launched the process to communicate reconnaissance results to potential students via radio and media; and an online reconnaissance management tools
The NHA 2012-2013 presentation/dissemination ceremony was held on September 17. The event was chaired by the MSPP, in the presence of the USAID/Haiti Deputy Director, WHO representatives, a representative from the Ministry of Economy and Finance (MEF), the President of the Supreme Audit Institution, and the MSPP’s Director General. In addition, HFG continued to participate in the technical committee for the development of the health financing strategy.

-- St. Damien Hospital’s Costing Update and Business Plan Development: Saint Damien Hospital (HSD) services costing ended in Y3Q3. The costing study report was submitted in August 2015. The next stage of the study, which consists of costing 14 pathologies, has started.

Sacre Coeur Hospital of Milot (HSCM): HFG team composed of the Country Manager, the Deputy Country Manager, the COP, the Costing Specialist, and USAID/Haiti Health Systems Strengthening Advisor visited Milot to meet with the CEO to discuss the need and objectives of costing the hospital’s services and of developing a business plan. HFG team developed the methodology and scope of work for costing and business planning.

Government to Government (G2G) Public Financial Management risks assessment: HFG developed the G2G risk assessment tool tailored to the MEF, MSPP, and Ministry of Planning with the objective of finding a funding mechanism to pilot a result-based financing (RBF) program for Haiti health facilities. HFG held introductory meetings with these ministries’ management and conducted their G2G PFM risk assessment. The draft assessment report was completed and submitted to USAID /Haiti Mission for review.

**Leadership Management and Governance (LMG)**

LMG/Haiti collaborated with the UC to conduct training on RBF implementation for the Direction Départementale Sanitaire (DDS) staff in the Nord-Ouest and Centre departments.

LMG/Haiti continues to support one department-level directorate (Nord-Est department), to implement the RBF strategy

LMG/Haiti completed he standardized referral and counter-referral tools, with the development of four tools which were produced and validated by the MSPP with LMG/Haiti technical support. The following forms were developed: referral forms and counter-referral forms for both the community level and the health facility level.

The Package of Essential Services (PES) is produced. The PES consultants submitted the first draft to the PES advisory committee during Q3, and are awaiting the Ministry of Health final validation.

LMG/Haiti supported the CCM to respond to questions from the Global Fund Country Team and mock Technical Review Panel (TRP) and finalize the malaria concept note.

LMG has Strengthen the strategic communication capacity of MSPP and local Haitian journalist and support USAID/Haiti to engage, inform, and elevate awareness of the Haitian public, diaspora, and US-based policy makers on key health issues for the country.

LMG/Haiti supported the CCM to organize an oversight meeting on June 17, 2015, to review the Principal Recipients’ (PR) dashboards and address specific issues in grant implementation.
ICF/MACRO/DHS

MEASURE DHS is USAID’s Bureau of Global Health’s primary source of nationally representative and cross-nationally comparable demographic and health survey data. As such, it addresses host countries’ emerging needs for data to guide policies and programs. The range of surveys available under this project include 1) the standard national DHS, which is conducted at intervals of four-to-five years; 2) AIDS Indicators Survey, which provides indicators used for monitoring and evaluating HIV/AIDS programs; 3) Malaria Indicator Survey, which collects data used for monitoring the performance of malaria programs; and 4) Service Provision Assessment, a facility-based survey that collects data on the cost, availability, functioning, and quality of various health services. Implementation is in all ten departments.

The sixth DHS survey is currently in planning stage and the final report is due in March 2017.

JSI-APC

Advancing Partners & Communities (APC) is a five-year cooperative agreement funded by the U.S. Agency for International Development under Agreement No. AID-OAA-A-12-00047, beginning October 1, 2012. APC is implemented by JSI Research & Training Institute, Inc., in collaboration with FHI 360. The project focuses on advancing and supporting community programs that seek to improve the overall health of communities and achieve other health-related impacts, especially in relationship to family planning. APC provides global leadership for community-based programming, executes and manages small- and medium sized sub-awards, supports procurement reform by preparing awards for execution by USAID, and builds technical capacity of organizations to implement effective programs. The APC project will provide capacity building support to the two local Haitian firms that were selected to verify results under the USAID service delivery project SSQH. APC will also support all the local health program launched under the local solutions program. The geographic Implementation is in all ten departments.

Verification des Resultats Pour la Sante/VRS south/Logik

The overall purpose of the Verification des Resultats pour la Sante (VRS) contract is to support verification of service delivery quantity and quality outputs at sites supported by the Services de Santé de Qualité pour Haïti (SSQH) contract. This contract shall provide external verification services to the service delivery contracts defined under the SSQH contract for the Central/South. All ten departments in Haiti will have health facilities under the USAID SSQH service delivery awards. Communal reference hospitals, health centers with and without beds and dispensaries will be included in the service delivery contract. The geographic implementation of the VRS/South award are the following departments: West, South-East, South, Nippes, Grande-Anse.

Verification des Resultats Pour la Sante/VRS North/SEFIS

The overall purpose of the Verification des Resultats pour la Sante (VRS) contract is to support verification of service delivery quantity and quality outputs at sites supported by the Services de Santé de Qualité pour Haïti (SSQH) contract. This contract shall provide external verification services to the service delivery contracts defined under the SSQH contract for the North.
Departments. All ten departments in Haiti will have health facilities under the USAID SSQH service delivery awards. Communal reference hospitals, health centers with and without beds and dispensaries will be included in the service delivery contract. The geographic implementation of the VRS/North award are the following departments: North-West, North-East, North and Grande-Anse.

**Zanmi La Sante/Border Health Activities**

The proposed collaboration aims to provide and reinforce integrated services for the prevention of HIV/AIDS and reduce the incidence of HIV infections in populations along the Haiti and Dominican Republic border while also integrating Family Planning (FP), Water, Sanitation and Hygiene (WASH) and Health System Strengthening (HSS). Zanmi Lasante (ZL), working under the leadership of the Département Sanitaire du Centre (DSC) has a longstanding relationship as well as respected expertise in supporting services for the prevention, treatment and care of HIV/AIDS and are long-time partners of Haiti’s Ministry of Health – Le Ministère de la Santé Publique et de la Population (MSPP) – and USAID. The project aligns with recommendations and prevention strategies outlined under Haiti’s national program against HIV/AIDS and will leverage outreach and communication strategies of the DSC. The project will be implemented over two years and will serve as a model for national projects at a larger scale.

Implementation area will be in the Central department focus on the Belladere commune.

**Zanmi La Sante/Cervical Cancer screening**

The cervical cancer screening implemented by Zanmi La Sante in support to the Department Sanitaire de l’Artibonite will ensure women have access to the resources they need to be healthy and prevent cervical cancer, ZL will aim to integrate low-cost, innovative prevention and screening methods into its comprehensive primary care platform. ZL’s approach in the St. Marc corridor will occur at both the community- and facility-levels, and include strategies to address HPV and cervical cancer directly. The program will address the following objectives:

**Objective 1:** vaccinate at least 6,000 girls between the ages of 9 and 13 against HPV in the St. Marc corridor.

**Objective 2:** conduct prevention activities with at least 80,000 women in communities in and around St. Marc.

**Objective 3:** conduct cervical cancer screening among at least 45,000 women of reproductive age.

**Objective 4:** implement and evaluate the use of a new mobile colposcopy for cervical cancer screening.

**Objective 5:** strengthen monitoring and evaluation systems involving cervical cancer screening and treatment activities.

**Objective 6:** conduct trainings and continuing education sessions with 200 health care staff in St. Marc.
Zanmi La Sante/Water and Sanitation

The Zanmi Lasante (ZL) Cholera Prevention through Improved Water, Sanitation, and Hygiene (WASH) in Schools project seeks to reduce the frequency and transmission of cholera and water-borne diseases in the Central Plateau, an area identified by Haiti’s Ministry of Health as having high cholera prevalence. Specifically, ZL proposes a package of interventions under three main objectives to be implemented over a one year period in up to 25 high-need primary schools in the Central Plateau. The program will cover the following areas

1) Improve access to water;
2) Minor renovation to sanitation facilities; and
3) Conduct hygiene promotion lessons.

Fonkoze

In the project the Fonkoze Foundation will address the community via the women enrolled in the credit program of Sèvis Finansye Fonkoze. They will receive thorough training to be the local actors who will introduce the project to their peers and neighbors, and who will facilitate its implementation. They will be volunteers soliciting community participation and engagement to arrive at total community participation. They will be the champions of the strategy. In the communities where there are Fonkoze credit centers, the target audience represents around 250 members per community. Even though there is little data on gender and sanitation in Haiti and throughout the world, Fonkoze is very interested to find gender responses to sanitation issues and will be documenting the whole process in order to ensure that toilets are built by community members not only to address the evident waterborne and diarrheal diseases but also other gender based problems in relation with toilets siting and Menstrual health Management. Expert staff at Fonkoze built the following assumptions based on secondary literature and discussions with clients:

Building from these assumptions, Fonkoze will build its intervention directed toward the following specific objectives:

1) To eliminate open defecation in targeted communities,
2) To improve hygiene and sanitation practices in households of participating communities,
3) To improve the local market availability of sanitation materials to build improved toilets,
4) To improve access to improved latrine building materials by testing a facilitated Rotating Savings and Credit Association (ROSCA) methodology; In order to reach the above objectives, this project methodology is based on the renowned CLTS methodology (community led total sanitation).

Fonkoze will pilot the sanitation program in the South department where they receive least sanitation interventions. Fonkoze branches have a large membership in various communities of the Greater South of Haiti. The specific branch will be decided upon in consultation with the branch staff and with DINEPA. We will look to go to remote localities where they have not had these services, and expectations of free latrines will not obstruct people’s willingness to engage in this project to improve their community.
The activities will be centered on 30 communities in the rural south in order to confirm the model. Then it will be extended to 2 branches, in 30 new localities per branch each year, covering a population of approximately 37,500 persons. (Assumption: 50 households of 5 members out of each of the 150 credit center. These communities will be identified in consultation with DINEPA once again, but we trust that we will be concentrating on some localities of the Grande Anse and the Greater South. 80% of these localities should reach the point of becoming Free of Open Defecation.

J/P HRO

J/P Haitian Relief Organization (J/P HRO) is Improving Sanitation Facilities in Delmas 32 Schools and Promoting Good hygiene Practices throughout the Community, a project that aims to dramatically improve the water and sanitation situation for 3,500 students at 25 schools in Delmas 32. Improving Sanitation Facilities in Delmas 32 Schools and Promoting Good Hygiene Practices throughout the Community stems from a specific request by the schools of Delmas 32 to J/P HRO for support to improve their water and sanitation situation. Under this project, J/P HRO will reinforce knowledge, attitudes and practices on hygiene and sanitation and construct and/or improve sanitation facilities in local schools and the wider community.

1.4 Program Geographic Focus

The USG health strategy supports the GOH's decision to encourage permanent re-settlement of displaced persons from Port-au-Prince to zones outside of the metropolitan area. Special attention will be placed on the government of Haiti three priority development corridors for the USG reconstruction and development strategy for Haiti—the Saint Marc Corridor, the Northern Corridor, and the Cul-de-Sac Corridor. The previous USAID’s 2005-2010 strategy supported the provision of essential health, nutrition, and family planning services to approximately 50% of the Haitian population throughout all ten Departments. While expansion of services under the new strategy will occur in the three priority geographical zones, USAID will continue its support for health services currently being provided outside the priority corridors, focusing on demographic targets of concern. Hospitals and key health centers in the metropolitan Port au Prince area will also be supported by the USAID/Haiti Health Program.

Section 2 Country and Environmental Information

Haiti’s Environmental policies and procedures

Chapter II of the Constitution of Haiti Republic, in its articles 253, 254, 255, 256, 257 and 258 states the following:

ARTICLE 253: Since the environment is the natural framework of the life of the people, any practices that might disturb the ecological balance are strictly forbidden.
ARTICLE 254: The State shall organize the enhancement of natural sites to ensure their protection and make them accessible to all.
ARTICLE 255: To protect forest reserves and expand the plant coverage, the State encourages the development of local sources of energy: solar, wind and others.
ARTICLE 256: Within the framework of protecting the environment and public education, the State has the obligation to proceed to establish and maintain botanical and zoological gardens at certain points in its territory.

ARTICLE 257: The law specifies the conditions for protecting flora and fauna, and punishes violations thereof.

ARTICLE 258: No one may introduce into the country wastes or residues of any kind from foreign sources.

In compliance with these articles stated above, Haiti encompasses two major undertakings: the elaboration and the validation of the multi-donors funded National Environmental Action Plan (NEAP) and the issuance of the General Decree on environment funded by the Interamerican Development Bank (IDB).

The NEAP includes all the facets and major issues of Haiti’s environmental degradation. The Ministry of Environment is responsible for overall coordination of environmental activities in Haiti including implementation of the NEAP.

The General Decree on Environment (Décret Cadre sur l’Environnement) prepared by the Ministry of Environment was approved by the Interim Government (November 2005) and promulgated to the Official Journal of the Haitian State, Le Moniteur, on January 26, 2006 (161th Year, Number 11). The approval of this Decree represents, in theory, a major step in terms of prospects to solve jurisdictional conflicts in environmental management in the country.

The initiative, which represents the legal foundation of the national policy of environment and provides regulation guidance for a responsible behavior of Haitian citizens in terms of sustainable development, will serve as a legal umbrella strategy for all sectors of the environment in Haiti, including biodiversity.

The General Decree on Environment contains specific Chapters dealing with:

- Biological Diversity (art 135 – 139). Art 136 stipulates: Authorities in the country should ensure in situ and ex situ biological diversity conservation.
- Environmental Planning (Chapter 2, art 29.4, 29.5),
- Land Use Planning (Chapter 3, Section related to Common regulations: art 33.b, art 34; Section 4 talking about protection of the natural and cultural heritage: art 43-art 47),
- Protected Areas (Chapter 3: in fact it should be Chapter 4: art 48 – art 55),
- Environmental Evaluation (art 56 – art 61),
- Environmental Surveillance (Chapter 5: art 62 - art 67),
- Environmental Education (Chapter 6: art 74 – art 76),
- Environmental Funds (Chapter 7: art 77 – art 79),
- Technical and Scientific Research (Chapter 9: art 87 – art 88),
- Common Norms (Title 4 and Chapter 1: art 89-art 93),
- Soils and Terrestrial Ecosystems (Title 4 and Chapter 2: art 94 – art 105),
- Fossils and Mineral Resources (Title 4 and Chapter 3: art 106),
- Continental Waters (Title 4 and Chapter 4 art 110, 111, 112,115, 116, 117.6, 121),
- Marine Waters and Associated Resources (Title 4 and Chapter Title 4 and Chapter 5 art 126 – art 132).
The Executive Order on mangroves exploitation prohibits any construction in mangroves areas. The same restriction also applies for cutting, sale and use of tree species forming the "Mangrove". Furthermore, the Order also prohibits fishing and hunting in those same areas.

Additional policies instruments that govern natural resources and environment in Haiti are as followed:

- The executive order creating the Three Bay Marine Protected Area (Parc des trois Baies), promulgated to the Official Journal of the Haitian State, Le Moniteur, (As of December 2013)
- The Rural Code of François Duvalier of 1962, which, among others, strictly controlled access to forest resources as well as activities in forest reserves.

The Watershed Management Policy of 1999 from the Ministry of Agriculture, Natural resources and Rural development.

The GOH has recently launched the first Bureau National d’Evaluation Environnementale (BNEE) whose role is to ensure that all plans, programs, projects and activities are implemented under clear environmental compliance rule and regulation.

The overall Assistance Objective for the Health Program is: Health and nutrition status of the Haitian population improved.

The following are the Intermediate Results (IR): IR 1: Access to essential health services increased; IR 2 Ministry of Health capacity to manage health care delivery strengthened ,and IR3 Services for persons with disabilities improved. The health programs will be implemented in urban and peri-urban area in a build environment.

2.1 Overall Assessment of the Health System and Epidemiological Profile in Haiti

The Health Care System in Haiti. The Government of Haiti (GOH) recognizes that the citizenry’s health is essential to its full participation in the development of a prosperous and stable Haiti. The earthquake struck a weak health system and weakened it further: 40% of the population has no access to basic health services. Infant mortality in Haiti is the highest in the Americas, at 59 deaths per 1,000 live births and approximately 88 in 1,000 children (live births) dying before reaching the age of five. The maternal mortality ratio is 380 deaths in 100,000 live births. Most maternal deaths in Haiti are due to complications, such as hemorrhage, infections, pre-eclampsia/eclampsia, obstructed labor, and complications resulting from unsafe abortions. Since up to 70% of women deliver at home, many do not access modern pre-natal services until late in their pregnancies if at all. Where maternity services do exist, they are often not accessible or poorly equipped with dilapidated infrastructure, such as access roads and electricity. While the proportion of Haitian children suffering from chronic malnutrition has significantly declined (22 percent of children under five, according to the 2012 DHS - a decrease from 29 percent in 2006), it still remains a significant cause of morbidity among children. Infectious and parasitic transmissible diseases, including acute respiratory infections, enteric or intestinal diseases, neonatal afflictions, and malaria, continue to cause approximately 54% of the deaths of children less than 12 months and 43% of deaths of children 1-5 years. Since the beginning of the cholera outbreak in 2010, and as of February 2015, Haiti has reported an estimated 734,526 cases of cholera and an estimated 8,900 deaths. With the highest rates of tuberculosis (TB) in the
Western Hemisphere, Haiti’s 2013 TB incidence rate was 206 cases per 100,000 people. HIV/AIDS prevalence was 2.2%. A health network capable of meeting basic primary care needs for the population does not exist and access to secondary and tertiary level care is extremely limited.

The deficiencies of the Haitian health system are directly responsible for many of these poor health outcomes. There are shortages of health workers, low retention, and low quality at all levels. The roles and responsibilities at different levels of care (primary, secondary, and tertiary) are poorly defined and often overlap. Procurement and distribution networks for medicines and medical supplies are unreliable and fragmented. The national health information system is inefficient because of the parallel systems linked to specific projects that are implemented by donors without any interaction with the Ministry of Health’s (MOH) information system. High-quality, intensive healthcare is hardly available outside Port-au-Prince. Haitian patients pay for most health services out of their own pockets, and insurance coverage is low.

2.2 Medical Waste Disposal Regulations, Policies & Practices in Haiti

The health medical waste disposal regulations is still in draft format however the MOH refers to the WHO guidelines for third world countries when dealing with medical waste. the pharmaceutical waste is addresses in the “Politique pharmaceutique nationale” (http://mspp.gouv.ht/site/downloads/PPN%20final%20mars%202015.pdf) and the “Normes et Procédures de Gestion des déchets issus des activités de soins”

Definition of expired product

1. Drugs whose expiration date has passed.
2. Syrups or packages whose packaging has been opened (expired or not)
3. Drugs not expired but damaged during the cold chain
4. Drugs not expired but degraded during storage
5. Tablets and capsules in bulk
6. Tubes of cream, ointment, etc. which the package is opened (expired or not)

Expired drugs or damaged must be kept under lock and key until they are officially destroyed

Processing expired products

Categories:

- Toxic drugs
- Controlled substances (narcotics, psychotropic)
- Anti-infective
- Antineoplastics
- Antineoplastic cytotoxic drugs
- Antiseptics and disinfectants

Dosage forms:
- Solid products, semi-solids and powder
  • Tablets, capsules, granules, powders for injection, mixtures, creams, lotions, gels, suppositories, etc.
- Liquid
  • solutions, suspensions, syrups, etc.
  • Bulbs
- Aerosol spray cans
  • Atomizers with propellant and inhalers

**Destruction of Expired products according to their category**

**Anti-infectious drugs regulated**
- Solidification: fix outdated product with a binder (cement, cement / lime, tar sand) in a hard material inside a drum clean plastic or steel.

**Antineoplastics**
- Solidification in steel drums filled to 50% of capacity, with a homogeneous mixture of lime, cement and water supply (15/15/5 by weight)

**Solid, semi-solids and powders**
- Excerpts from their outer packaging kept in their original packaging within
- Solidification: fix outdated product with a binder (cement, cement / lime, tar sand) in a hard material inside a drum clean plastic or steel.

**Liquids**
- Low or no toxicity (organic matter readily biodegradable, eg vitamins)
  • Discharge to sewer
  - Bulbs
  • crushed on inert surfaces (concrete)
  • never incinerated

**Controlled drugs**
- Destroyed under the supervision of the regulatory authority
- Solidification: fix outdated product with a binder (cement, cement / lime, tar sand) in a hard material inside a drum clean plastic or steel.

- **Disinfectants**
  - Reused if possible to clean

**Aerosols**
- Discharge, scattered among the urban solid waste (not incinerated or burned)

**ENVIRONMENTAL COMPLIANCE FROM 2010 – 2015:** Pursuant to 22 CFR 216.2(c)(2), activities implemented by USAID/Haiti Pillar C Health from 2010 to 2015 fell under the following ETD categories: Categorical Exclusion, Negative Determination with Conditions, and
Positive Determination. An Environmental Assessment was prepared and approved for the reconstruction of Hospital de l’Université d’Etat d’Haiti (HUEH) as well as the National Campus of Health Sciences (NCHS). So far, No significant environmental issues have been reported during construction phase. In addition, in order to mitigate all potential environmental impacts, EMMPs or EMPRs were drafted and approved respectively by the MEO and REA for activities under the following programs: Service de Santé de Qualité pour Haiti (SSQH), Management Science for Health (MSH)/Santé pour le development et le Development d’Haiti(SDSH), TRAINING and support to Orphans and Vulnerable Children (OVC), and the Spinal Cord Injury project under, Supply Chain Management System (SCMS),Nutrition Security Project (NSP), Maternal and Child Survival Program(MCSP), as well as the Small Renovation Projects under the Haiti Health Infrastructure Projects (HHIP). Monitoring reports (were submitted for activities following site visits by Health team members. Additionally, the environmental compliance team made periodic spot checks. No significant environmental issues have been observed or reported, with the exception of deficiencies in medical waste management under the MSH/SDSH program and its follow-on activity, SSQH. More field monitoring visits were and are being conducted in order to make sure that proper guidelines and protocols are being followed by SSQH implementers. In addition, the Health Pillar IEE is under revision in order to include more pragmatic mitigation measures in response to medical waste management issues.

SECTION 3: Evaluation of Project/Program Issues with Respect to Environmental Impact

The majority of activities under the Health Program will not have direct adverse environmental impacts, as they focus on community mobilization, planning, management, training, and technical assistance for scaling up the national and provincial capacities for HIV/AIDS and STI prevention and response, emphasizing their integration into PHC services (e.g., maternal and child health, family planning, reproductive health). However, some activities pose threats to the biophysical environment and implementing partners are expected to take advantage of opportunities to incorporate and improve means of addressing environmental health issues into health service delivery systems.

Potential direct and indirect environmental impacts resulting from activities supported by the Health Program fall into the following three categories:

1. Procurement, storage, management and/or disposal of public health commodities, including pharmaceutical drugs, immunizations and nutritional supplements (e.g., ARVs)
2. Generation, storage and disposal of hazardous or highly hazardous medical waste (e.g., HIV/AIDS testing, TB screening, urine or stool specimens and other biological samples); and
3. Small-scale or new larger scale construction/rehabilitation of health facilities.

Each of these potential impacts is discussed in detail below, followed by specific implications of all Program Elements and Sub-Elements covered under the Health Program. Sub-granting activities and considerations pertaining to clinical or operational research are also discussed in this section.
3.1 Procurement and Management of Public Health Commodities

Public health commodities include pharmaceutical drugs and vaccines, condoms, laboratory and medical supplies, basic medical equipment and personal protective gear. Pharmaceutical drugs, including vaccines, have specific shelf-life and storage temperature requirements, and may expire or lose efficacy before they are able to be used, particularly in remote areas where demand is low and/or infrequent. Pharmaceutical waste may also accumulate due to inadequacies in stock management and distribution, and lack of a routine system of disposal.

The effects of pharmaceuticals in the environment are different from conventional pollutants. Drugs are designed to interact within the body at low concentrations to elicit specific biological effects in humans, and which may also cause biological responses in other organisms. There are many drug classes of concern, including antibiotics, antimicrobials, antidepressants, and estrogenic steroids. Their main pathways into the environment are through household use and excretion, and through the disposal of unused or expired pharmaceuticals.

Effects on aquatic life are a major concern in disposal of pharmaceuticals. A wide range of pharmaceuticals have been discovered in fresh and marine waters globally, and even in small quantities some of these compounds have the potential to cause harm to aquatic life. Exposure risks for aquatic organisms are much greater than those for humans because aquatic organisms have continual (and multi-generational) exposure, may be exposed to higher concentrations, and may be sensitive to low-doses.

Traditional environmental toxicology focuses on acute effects of concentrated exposures rather than chronic effects of low level exposures. Measured toxicities of some tested pharmaceuticals have shown that acute effects from a single substance in the aquatic environment are very unlikely. However, effects of pharmaceuticals may be subtle because they occur in the environment in low concentrations. Some tests with combinations of various pharmaceuticals have revealed stronger effects than expected from the effects measured singly. More research is needed on the synergistic effects from the combination of multiple substances and the effects of chronic exposure to drug residues. Certainly pollution prevention (e.g., source elimination or minimization) is preferable to remediation or restoration to minimize both public cost and human/ecological exposure.

Additional health risks related to disposal include burning pharmaceuticals and plastic medical supplies (including new or used condoms) at low temperatures or in open containers which results in release of toxic pollutants into the air. Inefficient and insecure sorting and disposal may also allow expired drugs to be diverted for resale to the general public.

Health Program contractors or their implementing partners should insure that all drugs, vaccines, nutritional supplements, laboratory reagents and supplies, or condoms are stored, dispensed and disposed of properly in accordance with mitigation plans addressing these commodities. All health activities will follow the sector environmental guidelines on healthcare waste management, although not completed. GOH has a the following draft guidelines from the MOH that should be strongly considered by implementing partners when dealing with
pharmaceutical waste the “politique pharmaceutique nationale”

3.2 Management and Disposal of Hazardous Medical Waste

The mismanagement of health-care waste (HCW) poses considerable risks to people and the environment. Improper handling, storage and disposal of the waste generated in healthcare facilities can spread disease through several mechanisms. Transmission of disease through infectious waste is the greatest and most immediate threat from healthcare waste. If waste is not treated in a way that destroys the pathogenic organisms, dangerous quantities of microscopic disease-causing agents—viruses, bacteria, parasites or fungi—will be present in the waste. These agents can enter the body through punctures and other breaks in the skin, mucous membranes in the mouth or nose, by being inhaled into the lungs, being swallowed, or being transmitted by a vector organism.

The Global Health Programmatic Initial Environmental Examination related to the supply chain management system approved on the September 22, 2015, That PIEE provides general recommendations for HCW management under all SCMS mechanisms.

People who come in direct contact with the waste are at greatest risk. Examples include healthcare workers, cleaning staff, patients, visitors, waste collectors, disposal site staff, waste pickers, drug addicts and those who knowingly or unknowingly use “recycled” contaminated syringes and needles or otherwise come into contact with sharps, chemicals, and other special HCW.

Healthcare wastes generally fall into three categories in terms of public health risk and recommended methods of disposal:

- **General** healthcare waste, similar or identical to domestic waste, including materials such as packaging or unwanted paper. This waste is generally harmless and needs no special handling; 75–90% of waste generated by healthcare facilities falls into this category, and it can be burned or taken to the landfill without any additional treatment.

- **Hazardous** healthcare waste including infectious waste (except sharps and waste from patients with highly infectious diseases), small quantities of chemicals and pharmaceuticals, and non-recyclable pressurized containers. All blood and body fluids are potentially infectious. Used condoms can also contain infectious body fluids, and fall into this category. They should be removed carefully, wrapped so that there is no risk of exposure by waste handlers, and disposed of either by burying in a properly constructed system, burnt in an incinerator, or placed in a trash receptacle marked as hazardous waste. They should not be flushed down the toilet into either a septic or municipal system, because the rubber, vinyl or natural products can clog the piping and interfere with the sewage treatment.

- **Highly hazardous** healthcare waste, which should be given special attention, includes sharps (especially hypodermic needles), highly infectious non-sharp waste, highly infectious physiological fluids, pathological and anatomical waste, stools from cholera patients, and bodily fluids of patients with highly infectious diseases. They also include large quantities of expired or unwanted pharmaceuticals and hazardous chemicals, as well as all radioactive or genotoxic wastes.
Healthcare waste is most appropriately identified by color-coding bags and containers. In addition, the following are well-established practices in the safe handling, storage, and transportation of health-care waste:

- Sharps should be collected together (regardless of whether or not they are contaminated), and stored in puncture-proof, impermeable, and tamper-proof containers with fitted covers. If plastic or metal containers are unavailable, then containers made of dense cardboard are recommended.
- On-site collection of waste should be handled at frequent intervals to avoid accumulation, and an adequate supply of fresh collection bags/containers should be available for replacement.
- Waste should be stored in a room with adequate space and protection from sunlight.
- In any area that produces hazardous waste - hospital wards, treatment rooms, operating theatres, laboratories, etc., three bins plus a separate sharps container will be needed to separate these types of waste. (If hazardous and highly hazardous waste will be disposed of in the same manner, they should not be collected separately.)
- For hazardous waste and highly hazardous waste the use of double packaging, e.g. a plastic bag inside a holder or container is recommended for ease of cleaning.
- To make separate collection possible, hospital personnel at all levels, especially nurses, support staff, and cleaners, should be trained to sort the waste they produce.

Although sharps pose an inherent physical hazard of cuts and punctures, the much greater threat comes from sharps that are also infectious waste. Infections of particular concern for healthcare workers, waste handlers, waste-pickers, drug addicts and others who handle sharps are hepatitis B (HBV), hepatitis C (HCV), and HIV. HBV, for example, can remain infectious for a week, even dried at room temperature, and the probability that a single needle stick will result in sero-conversion is approximately 30 percent. For HIV and HCV, the probability that a single needle stick will result in sero-conversion is 0.3-0.5 percent and two to five percent, respectively (WHO, 1997). In the healthcare sector alone, the WHO estimates that unsafe injections cause approximately 30,000 new HIV infections, eight million HBV infections, and 1.2 million HCV infections worldwide every year. Other risks arise from reagents (particularly laboratory reagents), drugs, and mercury thermometers.

Contamination of water supply from untreated healthcare waste can also have devastating effects. If infectious stools or bodily fluids are not treated before being disposed of, they can create and extend epidemics.

Improper disposal of special HCW, including open dumping and uncontrolled burning, increases the risk of spreading infections and of exposure to toxic emissions from incomplete combustion. Incineration of waste can create a chemical pollution and public health problem, especially if low-temperature incineration is involved and where large quantities of HCW are burned. Medical waste incineration is considered a leading source of dioxin and mercury emissions. These emissions contaminate fish, meat and dairy foods, and when ingested, the dioxin and mercury is stored in fatty tissues. Dioxin has been linked to endometriosis, learning disabilities, birth defects, infertility, nervous system disorders and cancer. Mercury is a potent
neurotoxin and reproductive toxin. Environmental and health problems are also associated with incinerator ash, which needs special disposal, often as a hazardous waste.

**Proper disposal of contaminated blood within Haitian health clinics** affiliated with the Mission’s health program. In general, USAID follows WHO guidelines for the proper disposal of medical wastes, including contaminated blood. Incineration being the primary disposal method (autoclave and/or infectious waste incinerators). All USAID health programs world-wide that have an Environmental Threshold Decision (IEE) of "Negative Determination with Conditions" for the disposal of medical wastes must adhere to "conditions"; a primary "condition" being adherence to USAID environmental guidelines found in:

http://www.usaidgems.org/Sectors/healthcareWaste.htm - "Healthcare Waste" - this URL/line contains many references. The primary reference for these guidelines is titled "Healthcare Waste", a 36 page document that includes many references, including 4 in French.


Four French language references that are listed on the Healthcare Waste "tab":

- Directives environnementales, sanitaires et sécuritaires pour les établissements de santé. La Société financière internationale. 30 Avril 2007.


- Manuel de gestion des déchets médicaux. Comité international de la Croix-Rouge

- Gestion des déchets d’activité de soins. Pour réduire la charge de morbidité, la gestion des déchets d’activité de soins doit être rationnelle et recourir à d’autres techniques que l’incinération. Aide-mémoire N°281 Octobre 2011.

  http://www.who.int/mediacentre/factsheets/fs281/fr/index.html

### 3.3 Incineration process of medical waste

Medical wastes generated under USAID health programs will need to be disposed on an environmentally safe manner, which in many cases involves the use of an incinerator. Nevertheless, it is our responsibility as gatekeeper and promoter of sound environmental management to point out some issues which are admittedly beyond the immediate manageable interest of the USAID/Haiti’s Functional Objective team for Health. The treatment of waste to solve a potential biological problem can actually create a very real chemical pollution and public health problem, especially if low-temperature incineration is involved, large numbers of incinerators are used, and large quantities of health care waste are generated. Dioxin and mercury emissions resulting from medical waste incineration can be a significant problem, if
difficult to measure. Medical waste incineration is considered a leading source of dioxin and mercury emissions. These emissions contaminate fish, meat and dairy foods. Human consumption of foods containing dioxin and mercury results in these contaminants being stored in fatty tissues. Dioxin has been linked to endometriosis, learning disabilities, birth defects, infertility, nervous system disorders and cancer. Mercury is a potent neurotoxin and reproductive toxin. Likewise, problems can also be associated with incinerator ash, which needs special disposal, often as a hazardous waste.

USAID strongly discourages the incineration of the following types of HCW:

- Pressurized gas containers.
- Large amounts of reactive chemical waste.
- Silver salts and photographic or radiographic wastes.
- Halogenated plastics such as polyvinyl chloride (PVC).
- Waste with high mercury or cadmium content, such as broken thermometers, used batteries, fluorescent light bulbs or tubes, and lead-lined wooden panels.
- Sealed ampoules or ampoules containing heavy metals.

The health Implementers will refer for proper guidance on how to dispose of the previous types of HCW in the sector environmental guidelines on healthcare waste management: GEMS health care waste management

References for this section include:
http://www.who.int/water_sanitation_health/medicalwaste/167to180.pdf
http://www.bchealthguide.org/healthfiles/hfile29.stm
http://www.who.int/water_sanitation_health/Environmental_sanit/MHCWHanbook.htm.%20English
Essential environmental health standards in health care, WHO
http://apps.who.int/iris/bitstream/10665/43767/1/9789241547239_eng.pdf

3.4 Risks associated with TB screening process in clinics supported by USAID

Efforts involving diverse TB education, MOH awareness-raising activities, and IEC campaigns have no potential for causing harm to the biophysical environment. However, expanded TB screening and treatment programs pose potential unintended negative impacts due to the risks involved in handling, transport, and disposal of biological specimens used in TB screening. TB screening involves transfer of sputum for laboratory testing.

*M. tuberculosis* is carried in airborne particles, or droplet nuclei, that can be generated when persons who have pulmonary or laryngeal TB sneeze, cough, speak, or sing. The particles are an estimated 1-5 μm in size, and normal air currents can keep them airborne for prolonged time periods and spread them throughout a room or building. Infection occurs when a susceptible person inhales droplet nuclei containing *M. tuberculosis*, and these droplet nuclei traverse the mouth or nasal passages, upper respiratory tract, and bronchi to reach the alveoli of the lungs. Once in the alveoli, the organisms are taken up by alveolar macrophages and spread throughout
the body. Usually within 2-10 weeks after initial infection with M. tuberculosis, the immune response limits further multiplication and spread of the tubercle bacilli; however, some of the bacilli remain dormant and viable for many years. This condition is referred to as latent TB infection. Persons with latent TB infection usually have positive purified protein derivative (PPD)-tuberculin skin-test results, but they do not have symptoms of active TB, and they are not infectious.

Transmission of *M. tuberculosis* is a recognized risk to patients and health care workers in health-care facilities. Transmission is most likely to occur from patients who have unrecognized pulmonary or laryngeal TB, are not on effective anti-TB therapy, and have not been placed in TB isolation. Several recent TB outbreaks in health-care facilities, including outbreaks of multidrug-resistant TB, have heightened concern about nosocomial transmission. Patients who have multidrug-resistant TB can remain infectious for prolonged periods, which increase the risk for nosocomial and/or occupational transmission of *M. tuberculosis*.

The magnitude of the transmission risk varies considerably by the type of health-care facility, the prevalence of TB in the community, the patient population served, the health care worker’s occupational group, the area of the health-care facility in which the health care worker works, and the effectiveness of TB infection-control interventions. The risk may be higher in areas where patients with TB are provided care before diagnosis and initiation of TB treatment and isolation precautions (e.g., in clinic waiting areas and emergency departments) or where diagnostic or treatment procedures that stimulate coughing are performed. Nosocomial transmission of *M. tuberculosis* has been associated with close contact with persons who have infectious TB and with the performance of certain procedures (e.g., bronchoscopy, endotracheal intubation and suctioning, open abscess irrigation, and autopsy). Sputum induction and aerosol treatments that induce coughing may also increase the potential for transmission of *M. tuberculosis*. Personnel of health-care facilities should be particularly alert to the need for preventing transmission of *M. tuberculosis* in those facilities in which immunocompromised persons (e.g., HIV-infected persons) work or receive care -- especially if cough-inducing procedures, such as sputum induction and aerosolized pentamidine treatments, are being performed.

TB outbreaks among persons in health-care facilities have been reported in Haiti. Many of these outbreaks involved transmission of multidrug-resistant strains of *M. tuberculosis* to both patients and HCWs. Most of the patients and some of the health care workers were HIV-infected persons in whom new infection progressed rapidly to active disease. Mortality associated with those outbreaks was high (range: 43%-93%). Furthermore, the interval between diagnosis and death was brief (range of median intervals: 4-16 weeks). Factors contributing to these outbreaks included delayed diagnosis of TB, delayed recognition of drug resistance, and delayed initiation of effective therapy -- all of which resulted in prolonged infectiousness, delayed initiation and inadequate duration of TB isolation, inadequate ventilation in TB isolation rooms, lapses in TB isolation practices and inadequate precautions for cough-inducing procedures, and lack of adequate respiratory protection.
3.5 Small-scale and Large scale new Construction, Rehabilitation, and Renovation of Health Facilities

New construction or rehabilitation of health facilities poses potential environmental impacts, depending on the local circumstances, including:

- Location of the facilities including damage to sensitive or valuable ecosystems from construction of infrastructure, associated temporary worker dwelling, or construction storage units for personnel or equipment
- Removal of vegetation and/or compaction of the soil and grading of the site, altering drainage patterns and water tables, changing access to water by animals, people and vegetation, or degrading water resources
- Sedimentation of surface waters through removal of natural land cover, excavation, extraction of construction materials and other construction-related activities that result in soil erosion
- Contamination of groundwater and surface water supplies through improper disposal of human and other biological wastes during the construction period
- Contamination of ground and surface water supplies through improper disposal or handling of toxic materials used in construction (e.g., solvents, paints, vehicle maintenance fluids such as oil and coolant, and diesel fuel)
- Adverse social impacts due to displacement of local inhabitants, influx of outside workers or new residents, inequitable distribution of economic benefits of construction, etc.
- Spread of disease, especially sexually transmitted diseases such as HIV/AIDS, through migration of construction workers from other regions or through increased access due to construction of a new road
- Damage to aesthetics of site/area
- Improper extraction of construction materials such as wood, stone, gravel, or clay that damages terrestrial ecosystems (e.g., wood may come from relatively intact or natural forests)

3.6 Small-Scale Water and Sanitation Activities and Point-of-Use Water Treatment Technologies

Sector environmental guidance for Water and Sanitation can be found here:
http://www.usaidgems.org/Sectors/watsan.htm

3.6.1 Point-of-use Water Treatment Technologies:

Material Safety Data Sheets (MSDS) indicate that most point-of-use water treatment technologies use a diluted sodium hypochlorite solution (NaOCl), which is promoted by CDC as part of its safe water system (SWS) program. These water treatment technologies are readily available at the household level, are affordable for low-income families, and their use increases
awareness of and commitment to water treatment and hygiene improvement across all income strata.

Where a household treatment system is not feasible and boiling is not practical, certain chemicals will kill most harmful or disease-causing organisms. For chemical disinfection to be effective, the water must be filtered and settled first. Chlorine and iodine are the two chemicals commonly used to treat water in this way. They are somewhat effective in protecting against exposure to *Giardia*, but may not be effective in controlling more resistant organisms like *Cryptosporidium*. Chlorine is generally more effective than iodine in controlling *Giardia*, and both disinfectants work much better in warm water.

Disinfection with aggressive chemicals like chlorine is normally the last step in purifying drinking water. Water is disinfected to destroy any pathogens which passed through the filters. Possible pathogens include viruses, bacteria (including *Escherichia coli* and *Shigella*), and protozoans (including *Giardia lamblia* and *Cryptosporidium*). Many water systems intentionally leave residual disinfection agents in the water after exiting the plant so it travels throughout the distribution system. The most common disinfection method is some form of chlorine such as chlorine gas, sodium hypochlorite, chloramine or chlorine dioxide. The water and chemical mix are allowed to sit in a large tank, called a clear well. The water must sit in the clear well to ensure that the water is in contact with the disinfectant for a minimum amount of time because it takes time to inactivate the harmful microbes. Chlorine is a strong oxidant that kills many microorganisms and remains in the water to provide continuing disinfection. Other disinfection methods include using ozone which acts very rapidly or Ultra Violet light that is almost instantaneous.

Chlorine gas and sodium hypochlorite are the most commonly used disinfectants, because they are inexpensive and easy to manage. They are effective in killing bacteria, but have limited effectiveness against protozoans that form cysts in water (*Giardia lamblia* and *Cryptosporidium*, both of which are pathogenic). Chlorine gas and sodium hypochlorite both have strong residuals in the water once it enters the distribution system.

The main drawback in using chlorine gas or sodium hypochlorite is that these react with organic compounds in the water to form potentially harmful levels of the chemical by-products trihalomethanes (THMs) and haloacetic acids, both of which are carcinogenic and regulated by the U.S. EPA. The formation of THMs and haloacetic acids is minimized by effective removal of as many organics from the water as possible before disinfection and/or by adding ammonia immediately after chemical disinfection is completed. Formerly, it was common practice to chlorinate the water at the beginning of the purification process, but this practice has mostly been abandoned to minimize the production of THMs.

Chloramines are not as effective disinfectants compared to chlorine gas or sodium hypochlorite, but do not form THMs or haloacetic acids. They are typically used only in stored and distributed treated water. An example of this sort is processes using ozone for primary disinfection which is very quickly accomplished then using monochloramine to create a residual level of disinfectant in the water. Chlorine dioxide is another rapid acting disinfectant against bacteria but unlike ozone it leaves a long lasting residual in the water. Despite these beneficial characteristics, it is
rarely used because it may create excessive amounts of chlorate and chlorite, both of which are regulated to low allowable levels.

Sodium hypochlorite comes in the form of an aqueous liquid and is active at concentrations greater than or equal to 53 chlorometric degrees. The common name for this solution is bleach, 50 degrees chlorometric.

Sodium hypochlorite is a green/yellow liquid with the characteristic smell of chlorine. It was first used as a bleaching agent and was then discovered to be effective in controlling wound infections. Subsequently, it is most commonly known as household bleach and as a disinfectant, a bleaching agent, in medical treatments and used in the disinfection of drinking water.

Today, approximately 70% of the total amount of sodium hypochlorite produced is used to make bleach used in household cleaners and laundry additives, or is used for disinfection. Household bleach usually contains approximately 5 % sodium hypochlorite although some may contain up to 10 %. Industrial bleaches are usually more concentrated, containing up to 50 % sodium hypochlorite. It is also used for a number of industrial processes such as for commercial laundering, in the manufacture of paper and pulp, for industrial chemical synthesis and disinfection of swimming pools.

Perhaps one of the most important applications of sodium hypochlorite is in the disinfection of public water supplies to prevent the transmission of waterborne diseases such as cholera and typhoid.

Much of the general population is exposed to very low levels of hypochlorite via drinking-water. Accidental or deliberate ingestion is the most frequent route of poisoning, followed by breathing in gases produced due to the mixing of sodium hypochlorite with acid or alkaline products. Accidental skin or eye exposures are also quite common.

Drinking small volumes (below approximately 200 ml in adults and 40-50 ml in children) of sodium hypochlorite solution may cause burns to the mouth, throat and stomach, nausea and vomiting, but is unlikely to cause serious injury. Ingestion of large amounts may cause vomiting, drooling, abdominal pain, diarrhea and burns to the mouth and throat. Sodium hypochlorite is irritating to the skin and eyes, causing burns, inflammation and blistering.

Sodium hypochlorite itself may be toxic if ingested, or by dermal or ocular exposure. If mixed with acidic solutions, chlorine gas is produced, and mixing with ammonia-based solutions gives rise to chloramine solution, both of which contribute to the toxic effects.

Ingestion of small volumes of sodium hypochlorite causes burns to the mouth and throat, gastrointestinal irritation, nausea and vomiting. Larger volumes (approximately 300 ml in adults; 100 ml in children) may also cause abdominal and retrosternal pain and diarrhea. Aspiration of liquid may lead to pulmonary complications such as Acute Respiratory Distress Syndrome (ARDS).
Inhalation of chlorine gas causes burning of the throat and lungs, eye and nose irritation, chest tightness and coughing. At higher levels of exposure, tachypnea, cyanosis and swelling of the airway may occur. Pulmonary edema and respiratory failure may arise in severe cases, the onset of which may take up to 36 hours.

Sodium hypochlorite is corrosive and may irritate the skin or cause burning pain, inflammation and blisters. Ocular exposure can cause irritation, pain, lacrimation and photophobia. Hypochlorite salts have been classified as Group 3 by International Agency for Research on Cancer (IARC), i.e. compounds that are not classifiable as to their carcinogenicity in humans.

**Fire**
- Non-combustible under normal conditions
- Emits toxic fumes of chlorine and sodium oxide when heated to decomposition
- In the event of a fire involving sodium hypochlorite, use fine water spray and liquid-tight protective clothing with breathing apparatus

**Health**
- Exposure may arise due to ingestion, inhalation of fumes from the stomach, skin contact or splashes in the eye
- Inhalation of fumes arising from mixing bleaches with hot water or toilet cleaners may occur
  - Toxic by all routes
  - Corrosive
  - Ingestion may cause burns in the mouth and throat and vomiting
  - Inhalation may cause irritation of eyes and nose, sore throat, cough, chest tightness, headache, ataxia and confusion. Pulmonary edema may occur up to 36 hours after exposure
  - Eye exposure may cause pain, lacrimation, conjunctivitis and photophobia
  - Damage to intact skin by household products is highly unlikely

**Environment**
- Excessive release of sodium hypochlorite (NAOCl) can be dangerous for the environment.

### 3.6.2 Construction and Rehabilitation of Small-Scale Water Supplies

Water and sanitation projects are intended to improve environmental health conditions for beneficiaries. However, poor design, construction, or implementation of activities in this sector can result in environmental failures that eliminate or offset the intended benefits. These failures range from heightened risks to human health, to damage to ecosystems and economic activities, to depletion and degradation of water resources available to neighboring and downstream communities. Environmentally sound design and management (ESDM) of activities in the water & sanitation sectors requires design and management to anticipate and avoid or otherwise mitigate these impacts.
Potential environmental impacts of poorly-designed potable water supply:

• The human health benefits of water and sanitation activities are enormous, and generally far outweigh any potential negative impacts of such activities. Still, the potential for adverse environmental impacts from water and sanitation activities exists, and it is the responsibility of program designers and implementers to avoid such impacts to the extent possible. All design and site plans shall be approved by a certified engineer.

• USAID-funded water supply activities are likely to include the following: pond and spring improvements, hand-dug wells, small-diameter boreholes, wells with hand pumps, roof rainwater catchments, small dams and seasonal impoundments, rivers and streams, simple spring-fed gravity feed water distribution systems, well or surface water source pump with storage tank and piped distribution to stand-posts or individual yard taps or connections, extensions of existing urban water lines into un-served or under-served peri-urban zones. In some limited situations, the list may include: showers, clothes-washing basins, cattle troughs and hand washing taps.

• Debilitating disease and death: Water supply projects may cause increased incidence of infectious water-borne diseases such as cholera, non-infectious disease such as arsenic poisoning, and water-enabled diseases such as malaria, schistosomiasis or bilharzia.

  1. Contamination of surface and groundwater supplies with infectious organisms from human excreta is especially serious. Contamination may be caused by poorly designed, operated or maintained sanitation facilities, such as sanitation systems that transfer sewage to receiving waters without treatment, or pit latrines located in areas with high water tables.
  2. Infectious diseases may also be spread by improper use of wastewater to grow food crops.
  3. Failure to test new sources of water, especially groundwater, for possible natural or industrial chemical contaminants, such as arsenic, mercury, fluoride and nitrate, can have devastating consequences.

These adverse impacts may occur in both urban and rural areas. Increased population densities and the lack of facilities can increase the negative impact in peri-urban areas.

Possible impacts on native plants, animals and associated land, water, and coastal ecosystems: These impacts most often arise from water diversion, construction or decommissioning activities in or near a watercourse, or from fecal contamination of water. Numerous impacts on ecosystems are possible:

 a) Construction of facilities in sensitive areas (wetlands, estuaries, etc.) can destroy flora or fauna or their habitats, leading to loss of biodiversity, reduction of economic productivity and loss of aesthetics and recreational value.
 b) Water-supply projects can also deplete fresh water. Increased consumption of water can reduce water flows and cause loss of habitat, wetlands and wildlife downstream.
c) Water supply projects can erode soil from pipe leakage or poor drainage at taps. Soil erosion from construction actions may cause sedimentation in receiving waters, which may reduce the capacity of ponds and reservoirs, increase flooding, or substantially alter aquatic ecosystems by changing streambed, lakebed and estuary conditions.

d) Contamination of receiving waters with human excreta or animal manure can cause nutrient enrichment, depletion of dissolved oxygen and other changes that disturb natural ecosystems and reduce the vigor, abundance, and/or diversity of plants and animals that live either in the water or on land. Disease-causing microorganisms from excreta and manure may also contaminate fish or shellfish, creating health hazards.

**Impacts on fresh-water resources:** This may occur when projects do not adequately assess the quantity of available surface and groundwater (including typical seasonal and annual variations). Other causes include poor mechanisms for regulating withdrawals and use of water, and insufficient monitoring and maintenance of leaks. The following are the environmental impact of depletion of fresh water sources:

a) Depletion of surface water sources destroys the resource itself, damages aquatic life, reduces economic productivity, diminishes downstream use, and curtails recreational possibilities.

b) Overdrawing wells and boreholes can alter groundwater flows, reduce groundwater levels, or cause aquifers in coastal or island areas to experience salt-water intrusion. All can lead to loss of drinking water sources and reduced economic productivity. Aquifer depletion and falling water tables can also lead to land subsidence (sinking of the land’s surface).

Both these situations increase the cost of future water supply systems. In addition, depletion of water resources may lead to poorer water quality, health impacts, and elevated costs of potable water supplies in downstream or down-gradient locations.

**Increased disease transmission from standing, stagnant water:** Poor design, operation and/or maintenance of water supply improvements can lead to pools of stagnant water near water taps, water pipes and storage tanks. Improper or ineffective practices for disposing of excreta and solid waste make this problem worse.

These pools form an excellent breeding place for disease vectors (mosquitoes that carry malaria, etc.). They can also increase transmission of water-related diseases, especially when the wet spots are clogged or contaminated with solid waste or excreta.

The following table summarizes critical impacts from potable water supply activities, specifically, hand dug wells, ponds, stand pipes:

<table>
<thead>
<tr>
<th>Activity/Technology</th>
<th>Potential Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td><em>The activity or technology may...</em></td>
</tr>
</tbody>
</table>
| Site selection (P&D) | ● Damage sensitive ecosystems or endangered species.  
                         ● Contaminate water due to poor location (i.e. placement downhill from latrines). |
### Construction of buildings and structures (C)
- Damage sensitive ecosystems or endangered species.
- Cause erosion and sedimentation.

### Soakways and drains
- Cause erosion.
- Alter the natural flow of rainwater runoff.
- Create pools of stagnant water.

### Water Supply Facilities

#### Hand-dug wells, seasonal ponds, improved springs, ground-level catchment and similar structures
- Contaminate water with human pathogens.
- Contaminate water with animal manure.
- Create pools of stagnant water.
- Exhaust water supply (not applicable to improved springs or hand-dug wells).

#### Wells
- Provide water contaminated with nutrients and bacteria from animal waste.
  - Create pools of stagnant water.
  - Change groundwater flow.
  - Create saltwater intrusions.
  - Deplete aquifer (groundwater).
  - Cause land subsidence (impact from many wells).

#### Standpipes
- Create pools of stagnant water.
- This problem can be more severe when water table is high, clay soils are present, or population/tap density is high.

All of these impacts may strike both urban and rural areas. Increased population densities and the lack of facilities can increase the impact in peri-urban areas.

USAID/Haiti’s Health Program and activities which will involve development and rehabilitation of water sources shall adhere to ADS 303 - “USAID Implementation of Construction Activities”, USAID/Haiti Mission Order 3 “Implementation of projects/programs with Engineering and/or Construction Activities” and ensure that the USAID GEMS guidelines and checklists for Small-scale Construction and renovation activities are incorporated into mitigation and monitoring plans with implementing partners.

#### 3.6.3 Construction of Sanitation facilities:

The promotion of pit latrines in Haiti has traditionally been done with very little knowledge of its impact on the quality of groundwater. The presence of poorly designed pit latrines as well as poor and inadequate groundwater protection has led to contamination of spring water and shallow water wells in many rural areas in Haiti, leading to outbreaks of water bone diseases, especially diarrhea, cholera and typhoid.

Without latrines, the population in rural and some urban areas in Haiti disposes of sanitary waste in the open environment. This type of disposal increases the opportunity for vector transmission through flies, rats, insects, human contact (directly and through contamination of the soil and...
vegetation including annual food crops). During the rainy season, the sanitary waste runs directly off the soil to the surface water or infiltrates through the ground where plants potentially use the nutrients or the effluent enters the groundwater table. If sanitary waste enters the drinking water supply or surface waters, the population and aquatic life could be exposed to the sanitary waste. Sanitary waste contains nutrients that increase biological oxygen demand (BOD) and can also contain pathogens.

The construction of latrines is likely to have negative environment impacts that can affect the health and well-being of the populations in rural areas, if not implemented according to best practices. Without proper location and sufficient distance between the seasonal water table and the bottom of the pit, human waste including bacteria or pathogens can percolate directly to the aquifer and eventually into the surface water. Although overall, the risk of disease transmission and surface water contamination are reduced with latrines, the use of latrines increases the risk of contaminating groundwater at more concentrated levels than traditional waste disposal methods. This is a particular risk for any drinking water wells near the latrines. Also, if the effluent infiltration rate exceeds the percolation rate of the soil (especially in clay soil), the soil around the latrine will become waterlogged with the sanitary effluent. Waterlogged soil is unsanitary and provides a media for the proliferation of mosquitoes.

Poorly designed sanitation facilities can lead to insect-borne diseases: There are two groups to consider. Firstly, *Culex* mosquitoes, which do not transmit malaria but can transmit filariasis, breed extensively in septic tanks and flooded latrines. Secondly, flies and cockroaches often thrive on excreta and have been implicated in some transmission of faecal-oral disease. Mosquitoes, flies, and cockroaches all constitute a great nuisance, and poor urban households have consistently been shown to spend substantial amounts of their scanty household income on using control coils and nets.

All of these impacts may strike both urban and rural areas. Increased population densities and the lack of facilities can increase the impact in peri-urban areas.

The following table summarizes possible critical impacts stemming from poorly-designed sanitation facilities:

| Pit Latrine                          | • Increase transmission of vector-borne diseases.  
|                                     | • Contaminate groundwater with pathogens.  
|                                     | • Contaminate water supplies, damage water quality and/or transmit disease at other locations if waste is not properly handled and treated during or after servicing.  
|                                     | • Cause injury to people and animals  
| Composting toilets                  | • Increase transmission of vector-borne diseases.  
|                                     | • Contaminate groundwater with pathogens.  
|                                     | • Cause disease transmission to field workers and consumers of agricultural products.  
| Dry toilets                         | • Increase transmission of vector-borne diseases.  
|                                     | • Cause disease transmission to field workers and consumers of agricultural products.  

50
## Nature of the Potential Impacts

<table>
<thead>
<tr>
<th>Contamination of surface water, groundwater, soil, and food by excreta, chemicals and pathogens</th>
<th>Potential Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Increased disease transmission associated with excreta (diarrheal, parasitic, etc.).</td>
<td></td>
</tr>
<tr>
<td>● Malnutrition caused by above diseases.</td>
<td></td>
</tr>
<tr>
<td>● Higher infant mortality.</td>
<td></td>
</tr>
<tr>
<td>● Reduced economic productivity.</td>
<td></td>
</tr>
<tr>
<td>● Health problems from use of chemically contaminated water.</td>
<td></td>
</tr>
<tr>
<td>● Increased cost of down-gradient water treatment for domestic and industrial uses.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Degradation of stream, lake, estuarine and marine water quality and degradation of land habitats</th>
<th>Potential Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Health problems from contact with contaminated water.</td>
<td></td>
</tr>
<tr>
<td>● Fish or shellfish contamination (health hazards, lost economic productivity).</td>
<td></td>
</tr>
<tr>
<td>● Nutrient contamination (eutrophication of lakes or other water points).</td>
<td></td>
</tr>
<tr>
<td>● Alteration of ecosystem structure and function; loss of biodiversity.</td>
<td></td>
</tr>
<tr>
<td>● Reduced economic productivity.</td>
<td></td>
</tr>
<tr>
<td>● Erosion and sedimentation.</td>
<td></td>
</tr>
</tbody>
</table>

Enclosed composting toilets and biodigesters are environmentally friendly alternatives to pit latrines if located and constructed properly based on certified engineering designs.

### 3.7 Environmental Impacts Reviewed by Program Elements and Sub-Elements

#### Program HIV/AIDS

**Preventing Mother-to-Child Transmission**

Most PMTCT activities entail counseling, referral services, and care for family members. These activities will not affect the environment. However, PMTCT also involves blood testing and ARV therapy (Nevirapine) for HIV+ pregnant women, which could have environmental impacts and will therefore require procedures and protocols for the safe handling and disposal of medical and bio-hazardous materials, including blood and other body fluids. In addition, the Health Program may provide funding for construction and/or rehabilitation of health facilities which provide PMTCT services. Compliance with guidelines for small-scale construction and rehabilitation found in Annex 2 is required for such activities, as is compliance with DOH guidelines which are based on internationally-accepted standards.

#### Abstinence/Be Faithful

There are no anticipated negative environmental consequences related to abstinence/faithfulness activities. However, they present an opportunity to deliver positive messages about hygiene, sanitation, and proper disposal of condoms and other potentially harmful materials.
Medical Transmission/Blood Safety

Environmental issues associated with blood safety activities center on the collection, handling, and disposal of blood and laboratory products such as sharps and syringes. To the extent that USAID supports activities involving blood products, there is potential for environmental harm. The Health Program should ensure that provision is made, to the extent practicable, for the incorporation of standard practices and protocols for safe handling and disposal of these materials, in accordance with MOH guidelines.

Medical Transmission/Injection Safety

Environmental and human health impacts could occur during collection, handling, and disposal of medications and laboratory products such as sharps and syringes. In that case, the Health Program should ensure provision is made for the incorporation of standard practices and protocols for safe handling and disposal of these materials, in accordance with the Haitian MOH and the USAID GEMS guidelines.

Condom Advocacy and Other Prevention Activities

With the expansion of community-based distribution of contraceptives, the disposal of condoms and plastics poses a potential concern for the environment. Condom Advocacy and Other Prevention activities could indirectly harm the environment if materials are not disposed of properly. Health Program delivery partners should ensure, to the extent practicable, that provision is made for disposal of these materials.

With respect to social marketing and other prevention activities, no negative environmental consequences are anticipated. These activities present an opportunity to deliver positive messages about personal and household hygiene, sanitation, and proper disposal of condoms and other potentially harmful materials.

Palliative Care: Basic Health Care and Support

Expanded community-based home visiting and HBC, including palliative care, often occurs through NGOs and FBOs with a mix of direct provision and grants to multiple CBOs. Palliative care will not normally result in environmental impacts, as it involves mainly provision of a range of counseling, information, training, and referral services, none of which entail the use or generation of medical or hazardous products. To the extent that it may involve administration of HIV testing or provision of medical supplies and equipment, infection prevention and appropriate waste disposal messages should be disseminated. Provisions should be made for necessary disposal facilities for home-based and community-based situations.

Activities under this sub-element may include construction and/or rehabilitation of health facilities. Implementing partners shall follow guidance for small-scale construction and rehabilitation found in http://www.usaidgems.org/Sectors/construction.htm and comply with the Haitian MOH guidelines which are based on internationally-accepted standards.
Palliative Care: TB/HIV

Treatment for opportunistic infections such as TB has the potential to cause harm to the physical environment and human health due to the risks involved in handling, transport, and disposal of biological specimens used in TB screening. TB screening involves transfer of sputum for laboratory testing. The Health Program shall make provision for the incorporation of standard practices and protocols for the safe handling and disposal of these specimens, in accordance with MOH guidelines.

Activities under this sub-element may include construction and/or rehabilitation of health facilities. Implementing partners shall follow guidance for small-scale construction and rehabilitation found in http://www.usaidgems.org/Sectors/construction.htm and comply with MOH guidelines which are based on internationally-accepted standards.

Orphans and Vulnerable Children (OVC)

There are no obvious anticipated negative environmental consequences related to OVC activities. The priority is on assuring access to a basic package of care that includes treatment of TB, treatment and prevention of other opportunistic and AIDS related illnesses, and the provision of palliative care to reduce suffering and enhance the quality of life. NGOs and FBOs supported by the Health Program will work closely with local social service agencies such as health, education, and social development to ensure that vulnerable households and children have access to the social grants and support services to which they are entitled (e.g., foster care grants, child support grants, disability grants, etc.). These grants will not involve biophysical interventions apart from the provision of healthcare products and services.

Counseling and Testing

The counseling component of the Voluntary Counseling and Testing (VCT) program does not raise environmental concerns, and in fact presents an opportunity to deliver positive messages regarding the need to properly dispose of potentially harmful materials (such as condoms).

The testing component of the VCT program could have an effect on the environment related to the collection, handling, storage, and disposal of biological specimens which can be used for HIV biological surveillance: whole blood, plasma, serum, oral fluids, and urine. The choice of specimen collected depends on logistics, populations and sites selected, and the HIV testing strategy. Blood (whole blood, serum, plasma) is the preferred specimen for testing because it has a higher concentration of HIV antibodies than urine or oral fluids.

VCT programs have been transformed by the availability of Rapid Test Kits (RTKs), which provide results in minutes. Formerly, blood had to be drawn in some quantity and sent to be tested at the centralized blood testing service. The introduction of RTKs has supplanted the need to ship blood, and thus greatly reduced the risks involved in handling and transport.

Given the potential for contamination while testing whole blood, any HIV testing materials that could be used under this program, with their packaging of various plastics, foils, reagents,
capillary pipettes, etc, are also considered hazardous waste and are subject to appropriate disposal procedures. All testing sites must comply with the international or PEPFAR Rapid HIV/AIDS Testing Protocol. The Health Program should make provision for the incorporation of standard practices and protocols for the safe handling and disposal of these materials, in accordance with MOH guidelines. Management, treatment and disposal of special Health Care Waste (HCW) such as RTKs needs to be conducted in conjunction with an overall waste management program for each locality.

Additionally, any construction and/or rehabilitation of health facilities including counseling and testing centers must comply with the guidance for Small-scale Construction and rehabilitation found in http://www.usaidgems.org/Sectors/construction.htm

**HIV/AIDS Treatment/ARV Drugs**

Activities which involve procurement, storage, management, and/or disposal of ARV drugs may negatively impact the environment as described in Section 3.1. The Health Program should ensure that provision is made for the incorporation of standard practices and protocols for safe handling and disposal of ARV drugs, in accordance with MOH guidelines.

**11 HIV/AIDS Treatment/ARV Services**

Environmental issues associated with ARV Therapy center on the collection, handling, and disposal of blood products, other body fluids, medications, and laboratory products such as sharps and syringes. The Health Program should ensure training is provided and provision is made for the incorporation of standard practices and protocols for safe handling and disposal of these materials, in accordance with MOH guidelines.

In addition to support for ARV delivery, the Health Program provides technical and financial support to intervention-linked clinical research and pilot innovative treatment modalities to treat STDs and reduce their prevalence, with special emphasis being given to studies that can be replicated and/or taken to scale. This set of activities may result in environmental impacts since medical waste will be generated and will require disposal and appropriate mitigation measured should be applied.

Finally, activities under this sub-element may include construction and/or rehabilitation of health facilities. Implementing partners shall follow guidance for small-scale construction and rehabilitation found in http://www.usaidgems.org/Sectors/construction.htm

**Laboratory Infrastructure**

Activities under this sub-element may include construction and/or rehabilitation of health facilities. Implementing partners shall follow guidance for Small-scale Construction and rehabilitation found http://www.usaidgems.org/Sectors/construction.htm and comply with MOH guidelines which are based on internationally-accepted standards.

**Other/Policy Analysis and System Strengthening**
Activities which fall under the Health Program’s technical assistance at the national and departmental level to implement national policies, guidelines and strategies for care and support and its efforts to strengthen the local health system as the vehicle to provide both PHC and HIV/AIDS services do not have potential for direct harm to the biophysical environment.

However, efforts to improve the quality of vaccination services and immunization coverage, as well as expansion of VCT and PMTCT services, call for a heightened level of responsibility for compliance with MOH standards and guidelines.

**Host Country Strategic Information Capacity**

Support to strengthen information systems has no potential for causing harm to the biophysical environment.

**Administration and Oversight**

Support to strengthen administration and oversight has no potential for causing harm to the biophysical environment.

**Care and Support**

The Health Program will provide support to improve TB case detection and/or treatment compliance. Mitigation and monitoring for bio-hazardous waste management will be carried out in conjunction with support for TB research.

**Maternal and Child Health (MCH)**

**Administration and Oversight**

Support to strengthen administration and oversight has no potential for causing harm to the biophysical environment. However, Nutrition and Health related agricultural activities such as: the establishment of a small seed bank to provide high quality seedlings for plants and the establishment of small animal production units to increase access of families to animal-source proteins may have potential negative impacts. Given the agricultural nature of those activities, recommendations from LAC-IEE-11-14 and LAC-IEE-10-40 may also apply. The Health Program shall ensure that the LAC Environmental Mitigation & Monitoring Plan (EMMP) process is applied as well as the use of the USAID GEMS Environmental Guidelines for related activities. A full set of the environmental guidelines is at:

[http://www.usaidgems.org/sectorguidelines.htm](http://www.usaidgems.org/sectorguidelines.htm)

**Reproductive Health and Family Planning (RH/FP)**

**Sub-Element 3.1.7.1 Service Delivery**
Support for any RH/FP center services related to drugs other agents that could be introduced into the environment could result in environmental impacts and raise human health concerns. Environmental and human health impacts could occur during collection, handling, and disposal of medications and laboratory products such as sharps and syringes. The Health Program should ensure provision is made for the incorporation of standard practices and protocols for safe handling and disposal of these public health commodities, pharmaceuticals, and bio-hazardous materials in accordance with DOH guidelines.

SECTION 4: Recommended Determinations and Mitigation Actions

Based on the analysis presented in Section 3, this IEE recommends threshold decisions and conditions for implementation of USAID/Haiti’s Health Program activities. The Health Team acknowledges that the environmental screening and review procedures described here do not substitute for the host country’s own environmental laws and policies.

4.1 Categorical Exclusions

A Categorical Exclusion is recommended for the activities listed below, because no environmental impacts are expected as a result of these activities. These fall under the following citations from Title 22 of the Code of Federal Regulations, Regulation 216 (22 CFR 216), subparagraph 2(c)(2) as classes of activities that do not require an initial environmental examination:

(i) Activities involving education, training, technical assistance or training programs except to the extent such programs include activities directly affecting the environment (such as construction of facilities, etc.);

(iii) Activities involving analyses, studies, academic or research workshops and meetings;

(v) Activities involving document and information transfers;

(viii) Programs involving nutrition, health care, or family planning services except to the extent designed to include activities directly affecting the environment (such as construction of facilities, water supply systems, waste water treatment, etc.);

(xiv) Studies, projects or programs intended to develop the capability of recipient countries to engage in development planning, except to the extent designed to result in activities directly affecting the environment (such as construction of facilities, etc.).

For specific intervention areas, Categorical Exclusions are recommended, per the above, for:

- Prevention of Mother to Child Transmission (PMTCT) activities, except those that generate medical and biohazardous materials;
- Voluntary Counseling and Testing (VCT) activities, except those that generate medical and biohazardous materials;
- Clinical interventions, care or treatment, except those that involve human or animal trials or generate medical and biohazardous materials;
- Psychosocial support programs
● Orphans and vulnerable children (OVC) support;
● System strengthening, except those that could entail facility repair/rehabilitation and development of potable water supplies;
● Behavior change interventions (abstinence/faithfulness, etc.), information, education, and communications (IEC), etc.;
● Social marketing (condoms, other prevention), etc;
● Maternal and Child Health (MCH) and Reproductive Health programs, except those which support the provision of immunization and vaccination services.

CAVEAT

While the above activities are categorically excluded from further environmental scrutiny, this IEE nevertheless recommends that environmental health and quality considerations be incorporated into all relevant steps along the health care continuum, as part of quality assurance and infection prevention approaches. To this end, the Health Program has an opportunity to include healthcare waste (HCW) management messages, and to provide for appropriate disposal facilities in home-based and community-based situations. Positive messages about personal and household hygiene, sanitation, and proper disposal of condoms and other potentially harmful materials should be delivered, as appropriate, along with standard health care messages, and these messages should be included in training, protocols, and guidelines and the success of such messages should be monitored. Examples of opportunities are the training plans for healthcare clinic staff on VCT and PMTCT services, and assistance to Ministry of Health (MOH) to develop and implement guidelines for quality measures.

4.2. Negative Determinations with Conditions

- A Negative Determination with Conditions is recommended, pursuant to 22 CFR216.3(a)(2)(iii), for Health Program activities that have potential for negative impact on the environment in the following categories:
  - Procurement and management of public health commodities,
  - Medical waste handling and management, small-& scale construction and renovation activities,
  - Tuberculosis treatment in health care facilities,
  - Point-of-use water treatment technologies,
  - Small scaled development and rehabilitation of potable water supplies,
  - Small scaled development and rehabilitation of sanitation facilities,
  - Sub-granting activities for health actions, clinical or operational research concerning human research subjects.

Nutrition and Health related agricultural activities such as: Establishment of a small seed bank to provide high quality seedlings for plants that are more difficult to grow and improve production of community residents cultivating home gardens. Establish small animal production units to increase access of families to animal

An Environmental Mitigation and Monitoring Plan (EMMP) shall be prepared by the Implementing Partners for the listed activities, or future activities that receive a Negative
Determination with Conditions Threshold Determination. The EMMP shall be approved by the COR/AOR, MEO, and REA prior to any implementation. As well, the Health Team will work with its implementing partners in the following areas, in accordance with the following conditions and mitigation actions associated with the recommended Negative Determination with Conditions.

Possible Impacts of Sub-grant Activities;

Sub-granting activities may or may not have any negative environmental impact depending on how the sub-granted funds are used. USAID/Haiti’s Health Program may in the course of implementation administer small grants to CBOs, NGOs, and FBOs for a range of activities to address these possible objectives: to provide palliative care to households with HIV/AIDS family members, to improve and expand TB programs via DOTS programs in rural, urban and peri-urban areas, to support community governance structures, to train youth organizations in prevention of HIV/AIDS/STDs and TB, and to strengthen HIV/AIDS CBOs and smaller NGOs. None of these grants are expected to have an adverse impact on the environment.

However, given that the nature of activities to be funded under sub-grants are not known and that the details of the proposed activities are not yet fully developed (e.g., the location, scope and nature), the Health Program shall ensure that the LAC Environmental Mitigation and Monitoring Plan (EMMP) process is applied for all sub grants as well as the related sector environmental guideline located at the following link: http://www.usaidgems.org/sectorguidelines.htm.

All grantee recipients shall complete the EMMP form for their project. The grantee will submit the completed EMMP to the USAID Haiti A/COR who has the responsibility of reviewing and approving the EMMP together with the USAID Haiti MEO. The grant activities can not be implemented until the EMMP has been approved by the AOR and MEO. As stated above, the GEMS USAID Environmental Guidelines should be used by the grantee to assist in the identification of potential impacts and necessary mitigation measures. The grantee is responsible for the monitoring of the environmental mitigation measures as identified in Tables a and 3 of the EMMP. The grantee will report on the implementation and effectiveness of the mitigation measures as per the award reporting schedule.

4.2.1 Procurement and Management of Public Health Commodities:

Mitigating Measures & Conditions:

a) For Health Program-supported activities involving procurement, storage, management and/or disposal of public health commodities, including pharmaceutical drugs, immunizations and nutritional supplements, the team must work with its implementing partners to ensure that the medical facilities and operations involved have adequate procedures and capacities in place to properly manage and dispose of such commodities.

b) Consignees for any pharmaceutical drugs procured under this funding will be advised to store the product according to the information provided on the manufacturer’s Materials Safety Data Sheet (MSDS). These are supplied by the manufacturer, and can also be found
on the internet by using the active ingredient and MSDS as search terms. If disposal of any of these pharmaceutical drugs is required, due to expiration date or any other reason, the consignee will be advised that the preferred method of disposal is to return to the manufacturer. If this is not possible (for example if the expired or spoiled pharmaceuticals are considered hazardous and as such are subject to the Basel Convention on the Tranfrontier Shipment of Hazardous Wastes) then follow the guidelines in the Ministry of Health “Normes et Procedures de la direction de la Pharmacie, du medicaments et de la medcine traditionnele” and the “the traitement des produits perimes” found at http://mspp.gouv.ht/site/downloads/Normes%20et%20Procedures%20de%20la%20DPMMT.pdf and WHO handbook health care waste management https://noharm-global.org/articles/news/global/new-who-handbook-healthcare-waste-management_USAID Guidelines addressing Healthcare Waste are located at: http://www.usaidgems.org/Sectors/healthcareWaste.htm; these guidelines address the proper disposal of unwanted pharmaceuticals.

c) At the request of the Mission, the implementing partner will facilitate the disposal of expired drugs under this activity to mitigate the impact of medical waste. The following guidelines shall apply http://www.usaidgems.org/Sectors/healthcareWaste.htm; these guidelines address the proper disposal of unwanted pharmaceuticals. And the Global Health Programmatic Initial Environmental Examination related to the supply chain management system approved on the September 22, 2015

d) Implementing partners will work with the Haitian Ministry of Health on all aspects of essential medicine supply chain management, including estimating demand, distribution, and storage issues of time and temperature.

e) Commodities that, during use, become hazardous or highly hazardous waste, are managed under the conditions in the following section “Activities that involve the collection, safe handling and disposal of hazardous and highly hazardous medical waste”

f) Packaging and disposal of all other public health commodities will be treated using the guidelines provided in the USAID GEMS guideline: http://www.usaidgems.org/Sectors/healthcareWaste.htm

The following are illustrative activities being implemented under the Health Program that need to ensure proper management and disposal of health care commodities:

● Support for purchase and use of ARV drugs, TB drugs, and other drugs for the treatment of sexually-transmitted infections (STIs); and
● Support for purchase of drugs for immunization and vaccinations.

4.2.2 Medical Waste Handling and Management:
Mitigating Measures & Conditions:

a. For Health Program-supported activities including blood testing, laboratory support and other support which may directly or indirectly result in generation of biohazardous health care waste, the team must work with its implementing partners to ensure, , that the
medical facilities and operations involved have adequate procedures and capacities in place to properly handle, label, treat, store, transport and properly dispose of blood, sharps and other medical waste. Appropriate guidance is articulated in USAID GEMS guideline: http://www.usaidgems.org/Sectors/healthcareWaste.htm and WHO blue book https://noharm-global.org/articles/news/global/new-who-handbook-healthcare-waste-management contains guidance which should inform the Health Program activities to promote proper handling and disposal of medical waste, particularly for small facilities.

a) Other important references to consult in establishing a waste management program are “WHO’s Safe Management of Wastes from Healthcare Activities” http://www.who.int/water_sanitation_health/medicalwaste/wastemanag/en/.

b) Ensure that a medical waste management program is developed and implemented at the relevant facilities supported by USAID. As appropriate, the Health Program should use the guidance in Annex 2 for Healthcare Waste Management for Small-Scale Facilities to ensure proper waste management at Health Program-supported facilities.

c) Ensure precautions are taken for prevention of transmission of HIV, hepatitis B virus, and other blood-borne pathogens in health-care settings.

d) Ensure that training and technical assistance in the management of HCW appropriate to the Haitian environment is provided where appropriate, and assistance is provided to develop disposal mechanisms that are cost effective and safe. Refer to the USAID GEMS guideline: http://www.usaidgems.org/Sectors/healthcareWaste.htm

e) Ensure that blood safety issues are incorporated into the training and technical assistance for USAID-supported activities, where appropriate, especially for health workers whose work may expose them to blood and other body fluids.

f) Incorporate environmental health and quality considerations into all relevant steps along the health care continuum, as part of the quality assurance and infection prevention approaches.

g) Promote clinical guidelines used by providers that include specific measures to deal with bio-hazardous waste.

h) At facilities receiving USAID support, encourage implementation of the Haitian Quality Assurance System, which inspects selected health facilities, to ensure that healthcare waste issues are properly dealt with. Capitalize upon the integration of the HCW management issue into the mainstreamed “access, demand, quality, and management” approach to USAID’s Quality Assurance health program delivery.

i) Make provision for the incorporation of standard practices and protocols for the safe handling and disposal of bio-hazardous materials, in consultation and coordination with Ministry of Health (MOH) and other partners.
The following are illustrative activities being implemented under the Health Program that need to ensure proper disposal:

- Support (direct or indirect) for blood testing, screening or treatment for HIV, STIs, and TB which may occur as part of Voluntary Counseling and Testing (VCT), Antenatal Care (ANC), STIs, or Prevention of Mother-to-Child Transmission (PMTCT) programs;
- VCT and PMTCT services at clinical/treatment sites
- VCT and PMTCT at PHC and Antenatal Clinic (ANC) clients
- STI screening, prevention, and treatment services
- Sputum transfer programs that aim to facilitate an accurate TB diagnostic process.
- Support for Regional Training Centers that train health care professionals in AIDS services
- TB screening conducted as part of VCT, PMTCT, and ANC activities
- Clinical interventions or treatment that may entail indirectly the testing of human or animal subjects;
- Laboratory support which may directly or indirectly result in generation and disposal of bio-hazardous health-care waste;
- TB screening and treatment (Directly Observed Therapy, Short Course—DOTS strategy)
- Support for community-based home visiting and HBC, including palliative care, implemented through sub-grants to multiple community based organizations (CBOs)
- Expanded Program on Immunization (EPI) and Integrated Management of Childhood Illness (IMCI) interventions
- Other immunization and vaccination services which directly or indirectly result in generation and disposal of bio-hazardous health-care waste.

All USAID activities shall include appropriate procedures to reduce and dispose of waste materials properly. This mitigation measure is pro-active in nature and designed to further support Haiti’s application of its procedures.

4.2.3 Small-scale Construction and Renovation Activities:

Mitigating Measures & Conditions:

a) All construction activities will be conducted following principles for environmentally sound construction, as provided in http://www.usaidgems.org/Sectors/healthcareFacilities.htm and the USAID GEMS guideline at http://www.usaidgems.org/Sectors/healthcareWaste.htm and http://www.usaidgems.org/Sectors/construction.htm

b) For the rehabilitation of existing facilities, and for construction of facilities in which the total surface area disturbed is less than 10,000 square feet, the Condition is that these activities will be conducted following principles for environmentally sound construction, as provided in the USAID GEMS guideline for Healthcare.
facilities at: http://www.usaidgems.org/Sectors/healthcareFacilities.htm

c) Construction of any facilities in which the total surface area disturbed exceeds 10,000 square feet (about 1,000 square meters) will fall under a Positive Determination and require an Environmental Assessment before any construction may occur (see below in Positive Determination section).

d) Majority of materials used will be of local origin and will not contain any hazardous materials (e.g., asbestos or lead). Some of the buildings to be renovated may contain asbestos or related products; therefore, we recommend that the building be tested for the presence of asbestos-based compounds before the rehabilitation works began. Should asbestos be present in the facilities to be renovated, then the contractor(s) shall ensure that proper Haitian regulations for dealing with asbestos removal are implemented to ensure worker safety during the rehabilitation works. Results of the testing for asbestos shall be communicated to the Health Program team leader for proper decisions.

e) Excess construction material will be recycled wherever possible and disposal of unusable material will be done in an environmentally-sound manner;

f) Construction will not require the use of any heavy equipment, or in the unlikely event it does, proper safeguards will be taken to prevent destruction of vegetation and soil erosion (e.g., runoff from the construction site which may be high in suspended solids or which may cause disruption to local drainage patterns will be monitored by the responsible implementing partner site supervisor and will be addressed);

g) No lead-based paint shall be used. Empty paint cans will be disposed of in an environmentally safe manner away from areas where contamination of water sources might occur; and the empty cans will be broken or punctured so that they cannot be reused as drinking or food containers;

h) Measures will be taken to minimize standing water;

i) No pesticides will be used without the application of the Mission wide PERSUAP or development of a PERSUAP for pesticide analysis per 22 CFR 216.3(b)(1), (In case the Mission wide PERSUAP is sufficiently covering requested pesticide);

j) Where water supplies for drinking or washing patients or laundry are upgraded or provided, measures will be taken to ensure that drainage from laundry and bathing facilities does not affect the water supply nor pose threats for transmittal of infectious diseases; and

k) Provision of potable water supplies and/or latrines will follow the Republic of Haiti or WHO standards concerning the appropriate separation of wells.
and latrines and measures to avoid contamination of water sources. USAID’S Global Environmental Management System URL provides direction for the development of potable water systems; ref. - http://www.usaidgems.org/Sectors/watsan.htm

The following are illustrative activities under the Health Program that need to ensure that adverse environmental effects do not occur:

- Small-scale construction/rehabilitation at clinical/treatment sites in association with TB, VCT, PMTCT, ANC and other PHC services;
- Installation of small scaled homes for provision of TB, VCT, PMTCT, ANC and other PHC services and/or housing for medical staff;
- Support for reconstruction of Regional Training Centers that train health care professionals in AIDS services;
- Support for construction or rehabilitation of facilities associated with community-based OVC projects.

Consequently, the Health Program will ensure compliance with the guidance and checklists. The Umbrella EMMP for small scale construction developed for USAID Haiti serves as another tool for the Implementing Partner to use in developing the required site specific EMMP. The Umbrella EMMP for small scale construction is available from the USAID HAITI MEO and DMEO.

4.2.4 Tuberculosis treatment in health care facilities

Mitigating Measures & Conditions:
Due to the sudden rise of extensively drug-resistant tuberculosis (XDR-TD) and Multi-Drug Resistant TB (MDR TB), special precautions are recommended. USAID/Haiti Health Offices and their implementing partners must ensure that steps are taken to protect the public and their staffs when dealing with TB culture laboratory services under USAID/Haiti Health Program Area. It behooves to USAID, its partners other donor organizations to ensure that sound smear microscopy, and all aspects of quality assurance and training are in place to reduce the potential of broad contamination of the population by TB.

Although completely eliminating the risk for transmission of *M. tuberculosis* in all health-care facilities supported by USAID/Haiti may not be possible at the present time, adherence to the following guidelines issued by US CDC for Preventing the Transmission of Tuberculosis in Health-Care Facilities, with Special Focus on HIV-Related Issues should reduce the risk to persons in these settings:

Health- care facilities supported by USAID/Haiti should be particularly alert to the need for preventing transmission of *M. tuberculosis* in settings in which HIV-infected persons work or receive care.
An effective TB infection-control Plan requires early identification, isolation, and treatment of persons who have active TB.

TB infection-control measures for each health-care facility should be based on a careful assessment of the risk for transmission of *M. tuberculosis* in that particular setting. **The first step in developing the TB infection-control Plan** should be to conduct a baseline risk assessment to evaluate the risk for transmission of *M. tuberculosis* in each area and occupational group in the facility.

The primary emphasis of TB infection-control plans in health-care facilities should apply a hierarchy of control measures, including a) the use of administrative measures to reduce the risk for exposure to persons who have infectious TB, b) the use of engineering controls to prevent the spread and reduce the concentration of infectious droplet nuclei, and c) the use of personal respiratory protective equipment in areas where there is still a risk for exposure to *M. tuberculosis* (e.g., TB isolation rooms);

The second level of the hierarchy is the use of engineering controls to prevent the spread and reduce the concentration of infectious droplet nuclei. These controls include a) direct source control using local exhaust ventilation, b) controlling direction of airflow to prevent contamination of air in areas adjacent to the infectious source, c) diluting and removing contaminated air via general ventilation, and d) air cleaning via air filtration or ultraviolet germicidal irradiation (UVGI);

**Specific measures to reduce the risk for transmission of *M. tuberculosis* include the following:**

- Supervisory responsibility for a TB infection-control program should be assigned to a designated person or group of persons who should be given the authority to implement and enforce TB infection-control policies,
- Conducting a risk assessment to evaluate the risk for transmission of *M. tuberculosis* in all areas of the health-care facility, developing a written TB infection-control program based on the risk assessment, and periodically repeating the risk assessment to evaluate the effectiveness of the TB infection-control program. This Plan shall be submitted to USAID/Haiti A/COR or Activity manager within three months of program’s start up. USAID/Haiti would then send this plan to the Regional Environmental Advisor and the LAC Bureau Environmental Officer in Washington for review and clearance.
- Assessing adherence to the policies of the TB infection-control program should be part of the USAID/Haiti Performance Evaluation process. This assessment should be performed on a regular basis and whenever an increase occurs in the number of TB patients or HCW PPD test conversions within the HealthCare facilities supported by USAID/Haiti.
- Developing, implementing, and enforcing policies and protocols to ensure early identification, diagnostic evaluation, and effective treatment of patients who may have infectious TB.
- Providing prompt triage for and appropriate management of patients in the outpatient setting who may have infectious TB.
● Promptly initiating and maintaining TB isolation for persons who may have infectious TB and who are admitted to the inpatient setting.
● Effectively planning arrangements for discharge.
● Developing, installing, maintaining, and evaluating ventilation and other engineering controls to reduce the potential for airborne exposure to *M. tuberculosis*.
● Developing, implementing, maintaining, and evaluating a respiratory protection program.
● Using precautions while performing cough-inducing procedures,
● Educating and training HCWs about TB, effective methods for preventing transmission of *M. tuberculosis*, and the benefits of medical screening programs.
● Developing and implementing a program for routine periodic counseling and screening of HCWs for active TB and latent TB infection.
● Promptly evaluating possible episodes of *M. tuberculosis* transmission in health-care facilities, including PPD skin-test conversions among HCWs, epidemiologically associated cases among HCWs or patients, and contacts of patients or HCWs who have TB and who were not promptly identified and isolated.
● Coordinating activities with the local public health department, emphasizing reporting, and ensuring adequate discharge follow-up and the continuation and completion of therapy.

4.2.5 Point-of-Use Water Treatment technologies: with NAOCI as Active Principle

**Mitigating Measures & conditions:**

The chlorine contained in NaOCl needs time to kill infectious organisms and oxidize organic matter. The rule of thumb is add the proper dose of chlorine, wait 30 minutes. If you have a good filter, putting chlorine in the water before filtering it would be redundant. If you are using chlorine, filtering will remove grit, organic matter and particles and make the water more pleasant to drink.

If the smell/taste of the chlorine is all you find objectionable, this can be removed by letting the chlorinated water "stand" and evaporate some chlorine several hours, or aerating the water by pouring it back and forth between two containers for a while to liberate some of the chlorine. So you do not need to filter the water unless you want to.

Sodium hypochlorite is one of the most commonly used disinfectants, because it is inexpensive and easy to manage. It is effective in killing bacteria, but has limited effectiveness against protozoans that form cysts in water (Giardia lamblia and Cryptosporidium, both of which are pathogenic). Sodium hypochlorite has strong residuals in the water once it enters the distribution system.

**General Chemical Water Treatment Procedures:**

● The effectiveness of all chemical treatment of water is related to the temperature, pH level, and clarity of the water. Cloudy water often requires higher concentrations of chemical to disinfect.
● If the water is cloudy or filled with large particles, strain it, using a cloth, before treatment. Large particles, if swallowed, may be purified only "on the outside."
● Add the chemical to the water and swish it around to aid in dissolving. Splash some of the water with the chemical onto the lid and the threads of the water bottle so that all water areas are treated.
● The water should sit for at least 30 minutes after adding the chemical to allow purification to occur. If using tablets, let the water sit for 30 minutes after the tablet has dissolved.
● The colder the water, the less effective the chemical is as a purifying agent. Research has shown that at 50° F (10° C), only 90 percent of Giardia cysts were inactivated after 30 minutes of exposure. If the water temperature is below 40° F (4° C), double the treatment time before drinking. It is best if water is at least 60° F (16° C) before treating. You can place the water in the sun to warm it before treating.

Chemically treated water can be made to taste better by pouring it back and forth between containers, after it has been adequately treated. Other methods include adding a pinch of salt per quart or adding flavorings (e.g., lemonade mix, etc.) after the chemical treatment period.

4.2.6 Development and rehabilitation of Potable Water Supplies

Mitigating measures & conditions:

USAID recommends that implementing follow the water, sanitation and hygiene guidelines set forth by the global environmental management support http://www.usaidgems.org/Sectors/watsan.htm

Factors and Best Management Practices (BMPs) to consider for locating wells

Location:
● Locate the well at the highest point on the property.
● Avoid positioning down slope from potential sources of contamination, including surface water flows and flooding conditions.
● Locate the well in a site easily accessible for maintenance.
● Define a sanitary protective area around the wellhead that is kept in its natural state.

Potential Contaminants:
● Yield and quality of water supply will depend on soil type (which determines filtering capability and transmissivity).
● Course gravel, limestone, and disintegrated rock can allow contaminants to travel quickly with little opportunity for natural purification.

Distance to nearest point of potential contamination is site and aquifer specific:

The following MINIMUM distances from potential sources of contamination are best practice for sites with sand-like filtering capabilities:
• 150 ft (45.7 m) from a preparation area or storage area of spray materials, commercial fertilizers, or chemicals that may cause contamination of the soil or groundwater.
• 100 ft (30.5 m) from a below-grade manure storage area.
• 75 ft (22.9 m) from cesspools, leaching pits, and dry wells.
• 50 ft (15.2 m) from a buried sewer, septic tank, subsurface disposal field, grave animal or poultry yard or building, privy, or other contaminants that may drain into the soil.
• The distance between a septic tank leach field and a down-gradient well should be greater than 100 ft (30.5 m) if the soil is coarser than fine sand and the groundwater flow rate is greater than 0.03 ft/day (0.01 m/day).

Potable Water supply and sanitation activities under this program should be conducted in a manner consistent with the good design and implementation practices described in The USAID GEMS Environmental Guidelines for Water and Sanitation http://www.usaidgems.org/Sectors/watsan.htm. The Team and implementing partners should closely examine this chapter, as it provides a thorough discussion of program design and implementation issues that can help avoid numerous preventable problems. In synthesis, to mitigate environmental aspects related to construction and rehabilitation of water supply projects, implementing partners need to take these aspects into consideration in different phases of project development.

4.2.7 Development and rehabilitation of Sanitation facilities (latrines)

Mitigating Measures & conditions:
The Implementing Partners shall follow the USAID GEMS Guidelines for - Water and Sanitation Activities Best Practices for any sanitation facility work (http://www.usaidgems.org/Sectors/watsan.htm). The Implementing partners shall also execute the following mitigating measures to the utmost:

Identification of social barriers: Devote adequate attention to identifying and addressing social barriers to using latrine.

Evaluate depth to water table, including seasonal fluctuations and groundwater hydrology.
The size and composition of the unsaturated zone determine the residence time of effluent from the latrine, which is the key factor in removal and elimination of pathogens. Pit latrines should not be installed where the water table is shallow or where the composition of the overlying deposits makes groundwater or an aquifer vulnerable to contamination.

Maintenance/emptying of latrines: Ensure that a reliable system for safely emptying latrines and transporting the collected material off-site for treatment is used. This should include use of a small pit-emptying machine such as the vacutug that relies on an engine-driven vacuum pump. The vacutug was tested for UNCHS in low-income areas of Nairobi, Kenya, and was found to give workers much greater protection from disease than conventional methods.

---

1 Source: Driscoll, Groundwater and Wells, Second Edition.
Decommissioning: Properly decommission pit latrines. Do not leave pits open. Fill in unused capacity with rocks or soil. Ensure that collected material is adequately treated and not directly applied to fields or otherwise disposed of improperly (O&M).

Hygiene promotion strategy: Develop a hygiene promotion strategy that takes into account the current hygiene behavior (handwashing, latrine use, water collection, transport, and storage) of all users, including women, infants, children, the elderly and the infirm and, as well as any social/cultural religious factors that may hinder changing behavior.

Design improvements to match demand, user customs and preferences, climate, and abundance of water.

Test water quality downstream/down gradient from the proposed site before construction of infrastructure to establish a baseline. Testing after completion of project will provide necessary information for mitigation purposes. Elements to test for include fecal coliform, total suspended solids (TSS), biological oxygen demand (BOD) and nutrients. Maintain ongoing testing to monitor for contamination.

Avoid sensitive areas: Survey for, and avoid, wetlands, estuaries or other ecologically sensitive sites in the project area. Identify nearby areas that contain endangered species and get professional assessment of species’ sensitivity to construction at site (P&D).

Consider appropriate natural treatment systems instead of mechanical systems. These tend to be preferable for small-scale activities as they generally cost less, do not require highly skilled labor, and can frequently be manufactured locally. Also, supplies for maintenance and repair are likely to be more readily available.

There are many proven natural treatment options. Examples include double-vault batch composting toilets, double-vault batch dry toilets, upflow anaerobic filters\(^2\), biogas reactors\(^3\), confined-space constructed wetlands, subsurface wetlands, floating aquatic macrophytes, stabilization ponds and ecological sanitation (urine diversion system).

Types of latrine: the rate of flow of pathogen-containing liquid from latrine pits to the soil beneath is proportional to the quantity of liquid in the pit (static head). Dry latrines present the smallest risk of groundwater contamination. Ventilated improved Pit (VIP) latrine design traps insect vectors.

Pit latrines:

Devote adequate attention to identifying and addressing social barriers to using latrine. When possible, use the ventilated improved pit latrine design that traps insect vectors. Evaluate depth to water table, including seasonal fluctuations and groundwater hydrology. The size and composition of the unsaturated zone determines the residence time of effluent from the latrine.

\(^2\) The reference to upflow anaerobic filters and biogas reactors both require pumping, so they are not truly “natural treatment systems”.

\(^3\)
which is the key factor in removal and elimination of pathogens. Pit latrines should not be installed where the water table is shallow or where the composition of the overlying deposits makes groundwater or an aquifer vulnerable to contamination. Ensure that a reliable system for safely emptying latrines and transporting the collected material off-site for treatment is used. This should include use of a small pit-emptying machine such as the vacutug that relies on an engine-driven vacuum pump. The vacutug was tested for UNCHS in low-income areas of Nairobi, Kenya, and was found to give workers much greater protection from disease than conventional methods. See Wegelin-Schuringa, Small Pit-Emptying Machine: An Appropriate Solution in Nairobi Slum for more details. Ensure that collected material is adequately treated and not directly applied to fields or otherwise disposed of improperly, properly decommission pit latrines. Do not leave pits open. Fill in unused capacity with rocks or soil.

Composting Toilets:

For composting toilets, maintain humidity of composting material above 60% and supplement excreta with generous quantities of carboniferous material (dry leaves, straw, etc.). The pile should then remain aerobic, odor-free and insect-free. Construct sealed vaults to hold composting material if using fixed-batch systems. If using movable-batch systems check removable containers for leaks before installing, test samples from active chamber and mature chamber after fallow period for Ascaris eggs and fecal coliforms, Allow sufficient residence time in mature chamber. This may vary from 6 months in warm climates to 18 months in cooler climates. Ensure that the systems will be properly operated and maintained so that the soil amendment taken out after the treatment period is truly sanitized.

Dry toilets:

Maintain humidity of composting material below 20% and supplement excreta with alkaline material (ashes or lime). The pile should then remain both odor free and insect free. Generous applications of ashes will help ensure that pathogens are destroyed. Maintaining the proper pH is the most important factor for sterilization. Construct sealed vaults to hold dehydrating and curing material. Ensure that the systems will be properly operated and maintained so that the soil amendment taken out after the treatment period is truly sanitized. Test samples from active chamber and mature chamber after fallow period for Ascaris eggs and fecal coliforms to assess level of sterilization, Allow sufficient residence time in mature chamber. This may vary from 6 months in warm climates to 18 months in cooler climates.

Water table:

A latrine pit must be above the water table during all seasons. The minimum depth necessary to ensure the pit contents remain dry is 1.5m below the surface. The greater the distance between the base of the pit and the water table, the more time is required for pathogens to seep from the pit into the groundwater, thus allowing more pathogens to die-off naturally.

Soil type:
Clay, silt, and fine sand soil types all have grain sizes small enough to act as natural filters for microbial contaminants (<0.2mm). Certain clay soils can also absorb viruses.

**Distance to nearest water source:**

The risk of contamination of a surface or groundwater source by a latrine depends on the distance to the source, the direction and velocity of the flow of water in the soil (hydraulic gradient), and the soil/rock permeability. Thirty meters is considered the minimum separation for most soil types.

Balancing these factors to determine the best combination of silting and sanitation technology should involve input from engineers and/or hydrologists. For more information, see S. Sugden, WELL Factsheet: The Microbiological Contamination of Water Supplies, 2004. [http://www.lboro.ac.uk/well/resources/fact-sheets/fact-sheets-htm/Contamination.htm](http://www.lboro.ac.uk/well/resources/fact-sheets/fact-sheets-htm/Contamination.htm) USAID’S Global Environmental Management System URL provides direction for the development of potable water systems; ref. - [http://www.usaidgems.org/Sectors/watsan.htm](http://www.usaidgems.org/Sectors/watsan.htm)

4.2.8 Sub-Granting Activities (current or yet to be devised) under the Health Program that may require an environmental screening process:

As the specific sub-grant activities are not known, all sub-grant recipients shall be required to complete an EMMP. The EMMP shall be approved by the COR/AOR, MEO, and REA prior to implementation. The EMMP will determine the level of potential impacts and the type of environmental documentation required. If the sub grant actions fall within a moderate level impact, the EMMP will identify the necessary mitigation measures and type of monitoring required. If the activities fall within a high level of impact, the sub grantee shall be required to conduct an Environmental Assessment.

4.2.9 Clinical or Operational Research

a) For any issues concerning human research subjects, the Health Program will follow the U.S. National Institutes for Health (NIH) Haiti requirements in consultation with Centers for Disease Control and Prevention (CDC) Advisors and USAID Health Officers. See 45 CFR Part 45. Protection of Human Subjects at the following link: [http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm](http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm)

b) The above conditions apply to any components of the HIV/AIDS, reproductive health; PHC, ARV, STI management, and TB case detection and/or treatment compliance activities which involve clinical or operational research under the Health Program.

4.2.10. Establishment of a small seed bank to provide high quality seedlings for plants and small animal production units to increase access of families to animal-source proteins (See LAC-IEE-11-14 and LAC-IEE-10-40)
USAID’S Global Environmental Management System (GEMS) URL provides direction for the development of agricultural (small- to large-scale; small-scale activities planned for this program) and livestock activities; although the “Livestock” guidelines at GEMS are geared to larger-scale livestock activities; not within the scope of this IEE. Ref. - http://www.usaidgems.org/Sectors/agriculture.htm

4.3 Positive Determination: Pursuant to 22CFR216.6

A Positive Determination is recommended for new Construction and/or Major renovation of Health Facilities that are in excess of 10,000 square feet. This would include the new construction of large buildings related to disabilities.

A Positive Determination results from the finding that this program is likely to have significant cumulative effect on the environment. Pursuant to 22CFR216.2 (d) (1) (VI), a Scoping Process will be undertaken, which would lead to the development of a Scoping Statement that the LAC BEO will approve.

The scoping process shall result in a written statement which shall include, inter alia, a determination and significance of the issues to be analyzed in the Environmental Assessment, including direct and indirect effects, a description of the timing for the environmental analyses, a description of how the analysis will be conducted and the discipline that will participate in the analysis. These written statements shall be reviewed and approved by the LAC Bureau Environmental Officer, who may circulate the statement for comments with a request for written comments within a certain period of time (usually 30 days). Comments received from the general public and other stakeholders will be considered in the preparation of the Environmental Assessment and in the formulation of the design and implementation of the project, and will together with the Scoping Statement, be included in the project file.

4.4 General implementation conditions: Project-level implementation procedures

The following project-level implementation procedures are recommended as a general condition for approval of this IEE. Contingent upon such approval, their implementation will therefore be mandatory. They are intended to ensure that the IEE findings and conditions are implemented in project work plans, monitoring and reporting requirements. USAID/Haiti Pillar #3 (Health Office) shall undertake the following for each project under this portfolio:

1. The Health Team Office Chief or A/COR will provide to the prime contractor for a project (“the contractor”) the IEE conditions and the activities to which they apply.
2. The contractor or Implementing partner(s) will develop an Environmental Mitigation and Monitoring Plan (EMMP) describing how the project will, in particular terms, implement those conditions in the IEE that apply to project activities, including monitoring to assure appropriate implementation and sufficiency of environmental compliance measures. This shall include training of contractor staff and partners, where appropriate. This EMMP shall be reviewed and approved by the A/COR, MEO, REA before implementation begins.
3. The contractor or Implementing Partner(s) shall integrate these environmental compliance measures into the project work plan and reported on them in the normal basis of project reporting. The A/COR shall assure that this integration occurs.

4. The Implementing partner will notify USAID/Haiti’s Health Office of any work plan activities outside the scope of the IEE, and either the HIV or the Health Office Chief along with A/CORs and Activity Managers, will independently audit the work plan against the scope of the IEE.

5. Any activities NOT addressed within the IEE must be addressed with an IEE amendment or Environmental Assessment. This amendment must be approved before the activities in question can go forward.

6. The Health Office shall assure that these Implementing Partner’s responsibilities will be incorporated into contracts, grants or any other agreement and SOWs. The Health Office shall coordinate with the Contracting Officer to assure that the ETD/IEE is attached to all agreements and contracts, and that the environmental compliance language is used to incorporate necessary environmental compliance direction.

7. Prior to and during implementation, USAID/Haiti Health Office with the assistance of the Mission Environmental Officer and/or the Regional Environmental Advisor as necessary, will discuss IEE conditions with the contractor; and if and where necessary, come to appropriate agreement regarding the process for implementing these conditions as a mid-project adjustment.

8. As devising and implementing environmental compliance and implementation approaches should be an integral part of work plan development, these procedures place this responsibility principally on prime contractors. The A/COR and MEO shall conduct spot checks to monitor the implementation of the conditions and mitigation measures outlined in this IEE. Where such review and monitoring indicates unforeseen environmental impacts or that mitigation and control measures are insufficient, the Health Office will consult promptly with the Regional Environmental Advisor (REA) at USAID/Dominican Republic in Santo-Domingo.

9. In addition and as appropriate, the Health Office may facilitate the delivery of activity-specific environmental training to the contractor.

SECTION 5: Monitoring and Reporting

1. The Health Team Leader, in consultation with Mission CORs, activity managers and implementing partners, Mission Environmental Officers (MEO), Regional Environmental Advisors (REA), and/or Bureau Environmental Officers (BEO) as appropriate, will actively monitor and evaluate whether environmental consequences unforeseen under activities covered by this IEE arise during implementation, and modify or end activities as appropriate. If additional activities are added at the Program Area levels that are not described in this document, an amended IEE must be prepared.

2. Health Program procurements should include consideration of the offeror’s ability to perform the mandatory environmental compliance requirements as envisioned. The Contract/Grant Officer (CO) shall include required environmental compliance and reporting language into each implementation instrument, and ensure that appropriate
resources (budget), qualified staff, equipment, and reporting procedures are dedicated to this portion of the project.

3. Health Program implementing partners will complete an annual environmental mitigation and monitoring report of all activities unless specified otherwise. This reporting should be incorporated into pertinent Performance Monitoring and Evaluation Plans and annual work plans. The environmental monitoring report should be submitted to the A/COR or activity manager by the end of September each year. The COR or activity manager will compile these reports into an overall Health Program Area report so that the results can be included in the Operational Plan (OP) reporting process to Congress.

4. For all Health Program activities entailing service delivery, including blood testing and laboratory support, implementing partners are required to complete the Healthcare Waste Management Minimum Program Checklist and Action Plan annually. Completion of this checklist should be included in the annual workplans.

5. Any grants or fund transfers from the implementing partners to other organizations must incorporate provisions stipulating that:
   a) an annual environmental monitoring report will be completed, and
   b) activities to be undertaken will be within the scope of the environmental determinations and recommendations of this IEE. This includes assurance that any mitigating measures required for those activities be followed.

6. The Health Team Leader, CORs and activity managers will undertake field visits and consultations with implementing partners to jointly assess the environmental impacts of ongoing activities, and associated mitigation and monitoring conditions.

7. The implementers’ periodic reports to USAID will include a brief update on mitigation and monitoring measures being implemented, results of environmental monitoring, and any other major modifications/revisions in the development activities, and mitigation and monitoring procedures.

8. The Health Team will ensure that implementing partners have sufficient capacity to complete the environmental screening process and to implement mitigation and monitoring measures.

10. Implementation will in all cases adhere to applicable host country environmental laws and policies.

The Health Program will use an annual Environmental Mitigation and Monitoring Plan (EMMP) as required to ensure programmatic compliance with 22 CFR 216 and ADS 204.5.4 by documenting that the conditions specified in this IEE have been met for all activities. The EMMP must be completed by each organization carrying out activities under the Health Program. The EMMPs are reviewed and approved by the A/COR and the Mission Environmental Officer.

ANNEXES I
Guidelines for Implementing Partners

USAID/Latin American and Caribbean Bureau (LAC) ENVIRONMENTAL MITIGATION and MONITORING PLAN (EMMP)

September 7th, 2015

A. Background

Definitions

Activity - Overall USAID action being undertaken through a particular implementing mechanism

Intervention - Discrete actions undertaken to accomplish activity goals

Component - A sub action required to complete an intervention

All activities funded by USAID must conform to its environmental procedures outlined in 22 CFR 216, which require Initial Environmental Evaluations (IEE) to ensure that “environmental factors and values are integrated into the USAID decision-making process” and that “the environmental consequences of USAID-financed activities are identified and considered by USAID and the host country prior to a final decision to proceed and that appropriated environmental safeguards are adopted”.

All USAID activities funded through USAID’s Latin America and the Caribbean (LAC) Missions are issued an Environmental Threshold Decision (ETD) by the Bureau Environmental Officer (BEO) pursuant to the IEE as per 22 CFR 216.3(a) 2. One category of Threshold Decision is the Negative Determination (22 CFR 216.3(a) 3, which is given to projects that are not “found to have a significant effect on the environment” when certain conditions are in place. In LAC, the development of an Environmental Mitigation and Monitoring Plan (EMMP) is often one of the conditions set forth in the Negative Determination with Conditions (NDWC) ETD. The EMMP ensures compliance with 22 CFR 216 by identifying and mitigating environmental effects of USAID activities and by meeting any other conditions specified in the applicable ETD. It is also used for any sub-award interventions where the specific actions of sub-award are not yet identified at the time of award. In addition, Table 3 of the EMMP form can be used as a Mitigation and Monitoring Plan for Environmental Assessments (EA).

Activities carried out by implementing partners (IPs) of USAID/LAC Missions include a range of discrete interventions under various awards that will likely have a risk for significant environment effects. Examples include interventions such as infrastructure refurbishment or medical waste

---

4 This replaces all previous Environmental Mitigation Plan and Report (EMPR) forms
management. This EMMP procedure will provide for both the screening for environmental risk, the preparation of a mitigation plan and reporting on monitoring of these mitigation measures. Gender and persons with disabilities are also considered as social impact factors in the development of a mitigation plan as these have a direct bearing on the type and kind of mitigation measure to be prescribed. Global Climate Change (GCC) and its impact on the project, as well as the project’s to exacerbate GCC is also a consideration within the EMMP process. Finally, the EMMP is an effective tool for applying USAID’s Sector Environmental Guidelines to an activity or program which has been developed as per 22 CFR 216.3(a)3(iii). (http://www.usaidgems.org/sectorguidelines.htm).

The EMMP initially categorizes interventions into three risk categories: No Risk, Medium Risk, and High Risk. Those with No Risk can continue without further review upon completion of the Table 1 screening form and review and approval of the risk analysis by the Agreement/Contract Officer’s Representative (AOR/COR) and the Mission Environment Officer (MEO). The EMMP typically deals with those interventions at Medium Risk (see Figure 2). Those with High Risk must be reconsidered for the need of an EA. Risk is further defined in section C1 below.

Most awardees that receive a Negative Determination with Conditions ETD will be required to fill out an Environmental Mitigation and Monitoring Plan (as attached) per intervention type that includes:

1. Narrative (Justification/Background, Baseline Information/Existing Conditions, Description of Activities, and Social Considerations sections must be completed at a minimum).
2. The Environmental Screening Form (Table 1),
3. The Environmental Mitigation Plan (Table 2), and
4. The Environmental Monitoring Table (Table 3).

AOR/CORs, Activity Managers, and Implementing Partners can work with the USAID MEO to ensure that environmental effects are sufficiently identified and mitigation actions are agreed upon, including clear guidance on the procedures for GCC and social considerations, where and appropriate.

B. Timing of EMMP

All solicitations for activities that fall within the NWDC will included this document as part of the solicitation package as per the ADS 204 annex regarding solicitation language. As per direction outlined here and in the Environmental Considerations section of all solicitation, potential applicants must present a draft EMMP with their submission. This is important as the funding for mitigation implementation identified in Table 3 must be incorporated in the applicant’s proposal budget. The draft EMMP can also serve as a criteria for selection by the Technical Evaluation Committee reviewing proposals.

Once the Implementing Partner (IP) is chosen, a revised initial EMMP is submitted by the applicant or contractor to the AOR/COR at the time the initial work plan is submitted. The MEO, and the Regional Environmental Advisor (REA) must approve this EMMP before work can
commence. For sub-awards, the awardee is required to fill out the EMMP and submit it for approval to the Chief of Party (COP). The COP then submits the EMMP for review and final approval to the AOR/COR and MEO. Implementation of interventions shall not occur until final approvals of the EMMPs are received.

A format for this initial EMMP can be seen in attachment 1; it includes:

1. An initial screening process using Table 1: Environmental Screening Form to assure the intervention is at the Medium Risk Level.

2. The identification of potential impacts and related mitigation measures using Table 2: Environmental Mitigation Plan for each component of the intervention.

3. Table 3: Environmental Monitoring, includes the necessary mitigation measures to be monitored, the monitoring indicators, who will conduct the monitoring, and when will the monitoring occur. Table 3 also includes a monitoring chart that documents who conducted the monitoring and the effectiveness of the mitigation measures.

At the end of each year of implementation, the EMMP is resubmitted with the same information as provided initially, along with a report reflecting the status of implementation and effectiveness monitoring of the identified mitigation measures using Table 3: Environmental Monitoring Table. This serves as the Annual Environmental Compliance Report (ECR) required by most implementing mechanisms. The ECR can be part of the annual Report required for the overall Activity as per the award requirements.
Results from the ECR are subsequently incorporated into a revised EMMP that shall be submitted to the AOR/COR for approval by the MEO/REA that reflects any new interventions in the activity’s second year work plan along with any changes to mitigation measures based on the prior year’s monitoring. This process of submitting the EMMP monitoring report at the end of the year, together with a revised EMMP that reflects the following year’s work plan, is repeated each year until the close of the activity (See Figure 1).

C. Initial Environmental Mitigation and Monitoring Plan

1. Classification of Level of Risk

Different interventions under an award can have varying levels of risk for environmental effects and therefore require different courses of action (Figure 2). No-risk interventions, classified under “a” below, do not require the development of an Environmental Mitigation Plan (Table 2) or an Environmental Monitoring Table (Table 3) and could be covered under a Categorical Exclusion (22 CFR 216.2(c)). The AOR/COR should consult with the MEO to determine if the action in question has already received an Categorical Exclusion or if one must be requested from the BEO. Interventions identified as Medium-risk (“b”) require the IP to screen those potential environmental effects and develop a plan to mitigate them. High-risk interventions (“c”) include interventions that have irrevocable change and/or cannot be mitigated by the implementation of industry standards, best management practices, or design specific implementation standards and, therefore, are considered to have significant environmental effects that will require an EA (22 CFR216.2(d)).

Figure 2 below depicts schematic of required action based on the level of risk of a particular intervention under an award. Note: all sub-award interventions are required to have an EMMP completed. If all questions on Table 1 are checked No, then the sub-award intervention falls under the low risk category and implementation could start directly without further analysis, pending approval of the work plan by the AOR/COR and MEO.
a) Discrete interventions that do not require mitigation plans (No-Risk):

An illustrative list of no-risk discrete interventions where no mitigation reporting is required includes:

- Education or training, unless it implements or leads to implementation of actions that impacts the environment (such as construction of schools or use of pesticides)
- Community awareness initiatives
- Controlled research/demonstration activities in a small area
- Technical studies or assistance (unless actions include agriculture and pesticides)
- Information transfers

If there is a risk that the actual implementation of subjects learned during training could adversely affect the environment (e.g., training on agricultural techniques), the training is expected to include as part of its curriculum, an analysis of environmental effects and a plan for mitigation. Mitigation measures such as Good Agricultural Practices/Best Management Practices would need to be identified for use in training as a mitigation measure and listed in Table 2 of the EMMP.

Many discrete interventions under an agreement will fall between the two extremes of low and high risk and may cause some significant environmental effects that can be avoided or mitigated with proper planning. For these interventions, the IP will be responsible for completing the EMMP on an annual basis.

c) Discrete interventions that cannot be supported (High-Risk):

Under USAID’s Environmental Procedures, if there is a proposed action that may have significant environmental effects, an approved EA is required prior to its implementation (22 CFR 216.2(d)1). In the case of pesticide use, a Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) will be prepared by the partner and approved by the LAC BEO (22 CFR 216.3 (b)). Such interventions include, but are not limited to:

- Agricultural, livestock introduction or other activities that involve forest conversion
- Resettlement of human populations
- Construction of water management systems such as dams or impoundments
- Drainage of wetlands
- Introduction of exotic plants or animals in protected areas
- Permanent modification of the habitat supporting an endangered species
- Industrial level plant production or processing (this does not include community or regional plant nurseries aimed at restoring areas after fires, for example)
- Installation of aquaculture systems in sensitive water bodies including rivers, lakes, and marine waters (not land-based fish ponds)
- Procurement of timber harvesting equipment, including chainsaws
- Use of restricted use pesticides (insecticides, herbicides, fungicides, etc.)
● Large-scale reconstruction in un-degraded lands, such as within protected areas
● Large-scale new construction (over 1,000 meters\(^2\))
● Timber harvesting, or cutting of trees over 20 cm diameter breast height related to forest management or for commercial products.
● Construction of penetration roads and/or reroutes

d) Cumulative effects

Even though individual interventions may be considered medium risk, when those interventions are analyzed in terms of other USAID actions and/or other non-USAID actions that are likely to occur, cumulative effects must be considered and may require the development of an EA.

e) Extraordinary circumstances

Certain extraordinary circumstances must be considered and may require an EA. These include
- impacts to sensitive terrestrial or aquatic areas (see question 14)
- impacts to unique cultural or historical features (see question 28)

2. Environmental Screening Form

Table 1: Environmental Screening Form contains information relevant to the potential environmental effects over the life of the intervention with regard to natural resources, the environment, and human health. If items in Column “A” of the Environmental Screening Form are checked “YES”, then items for monitoring and mitigation are to be specified in the Table 2: Environmental Mitigation Plan. The Environmental Mitigation Plan simply outlines the plan of action for mitigation of potential environmental effects. If all Column A is checked “NO”, then Tables 2 and 3 are not required to be completed and the intervention can begin upon approval from the COR/AOR and MEO. When all of Table 1 questions are checked “NO”, the MEO must ensure that the intervention listed in the “Description of Activities" narrative section truly will not cause impacts to the environment. The MEO must also ensure that all of the actions for the intervention are listed in the Narrative and that each action is covered in Table 1.


D. Annual Environmental Compliance Report

As per terms and conditions of all awards with USAID, each implementing partner is expected to submit an Annual Report, which normally requires an ECR. If an EMMP has been developed, it should be used to fulfill this requirement. The ECR should contain information relevant to the potential environmental effects over the life of a discrete intervention under an award and
includes: a) a copy of the initial EMMP completed during the initial intervention planning (reference Section B above); b) the prescribed mitigation measures using Table 2: Environmental Mitigation Plan; and c) synthesized data on these mitigation measures collected throughout the year and tracked in the “Environmental Monitoring Table (Appendix 1, Table 3)”. As it is often difficult to quantitatively measure progress of complex mitigation measures, it is necessary to include inserted digital photos (with relevant maps) to describe progress of mitigation measures.

E. Sections of the EMMP

1. EMMP Coversheet
2. EMMP Narrative (to be filled out with intervention specific information). NOTE: details for each of the actions to be implemented must be listed in the “Description of Activities” section of the Narrative.
3. Tables:
   1. Table 1: Environmental Screening Form
   2. Table 2: Environmental Mitigation Plan
   3. Table 3: Environmental Monitoring Table
   4. Photos, Maps, Level of Effort

USAID/LAC ENVIRONMENTAL MITIGATION and MONITORING PLAN (EMMP)

A. Coversheet for ENVIRONMENTAL MITIGATION and MONITOR PLAN (EMMP)

USAID MISSION DO # and Title: ________________________________

Title of IP Activity: _____________________________________________

IP Name: ________________________________________________________

Award Number: __________________________________________________

Funding Period: FY_____ - FY_____

Associated IEE/ETD: ______________________________

Life of Activity Funding (US$): ________________________________

Title of Discrete Intervnetion ________________________________

Report Prepared by: Name:____________________ Date: ____________

Date of Previous EMMP: ______________________ (if any)

Status of Fulfilling Mitigation Measures and Monitoring:

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initial EMMP.

Annual EMMP.

USAID Mission Clearance of EMMP for XXX Intervention:

Contract/Agreement Officer’s Representative: __________ Date: __________

Mission Environmental Officer: ________________ Date: __________

Regional Environmental Advisor: ________________ Date: __________

B. Environmental Mitigation and Monitoring Plan Narrative

1. Background, Rationale and Outputs/Results Expected:

   Provide a brief summary of the intervention(s) under consideration and expected results.

2. Environmental Baseline:
Describe the existing condition of the area of the intervention. This should include a description of/baseline information on the natural and physical resources that could potentially be effected by the intervention. Provide information on the existing infrastructure, roads, agricultural systems, etc. if relevant to the intervention. Succinctly describe location, site details; surroundings (include a map, even a sketch map). Include information on any “unique or extra-ordinary” resources that are within the intervention area such as wetlands, critical habitat, etc. Include information on the existing climate trends and conditions such as how might environmental conditions change due to climate change for the life of the intervention and expected lifespan of the interventions? Describe how the intervention will involve men, women, and indigenous cultures whose actions during the life of the intervention may have a direct effect the environment, or how the actions of the intervention may have an impact on them. Methodologies for data collection and analysis for gender-sensitive implementation and monitoring of interventions are encouraged.

3. Activity Description/Specific Actions to be implemented:

Provide both quantitative and qualitative information about actions to be undertaken during the intervention (e.g. specific actions of construction-size, location, and type of materials to be used, etc.), types of agriculture production (full till mechanized, organic etc.), how the intervention will operate, and any connected interventions that are required to implement the primary interventions (e.g., road to a facility, need to quarry or excavate borrow material, need to lay utility pipes to connect with energy, water source or disposal point or any other intervention needed to accomplish the primary one but in a different location). If various alternatives have been considered and rejected because the proposed intervention is considered more environmentally sound, explain these.

Example:

New construction of a 900 square meter youth center located in XXX town and is 70 meters from the River XXX. Construction will be of block and cement with rebar reinforcing. Construction will include a new two-stall toilet and sinks using town water source from pipes. A 20 square meter biodigester will be used to capture waste and methane gas piped to the youth center kitchen for use as cook fuel. Biodigester will be underground and built of concrete by molds. Electrical wiring for the youth center will be installed with the power source by solar panels on the zinc roof and batteries/electrical circuits located attached to the center in a closed and locked storage room.

Interventions with sub-awards require a specific EMMP for each award.

4. Evaluation of the Potential for Environmental Effects (Tables 1 and 2):

As a component of conducting environmental screening and developing the Environmental Mitigation Plan (Appendix 1, Table 2), briefly summarize environmental effects that could occur before, during, and after implementation, as well as any problems that might arise with restoring or reusing the site, if the facility or intervention were completed or ceased to exist. Explain direct, indirect, and cumulative effects on various components of the environment (e.g., air, water, geology, soils, vegetation, wildlife, aquatic resources, historic, archaeological or other cultural resources, people and their communities, land use, traffic, waste disposal, water supply, energy, climate change adaptation, climate change mitigation,
etc.). Indicate positive impacts and how the natural resources base will be sustainably improved.

For example, any intervention that increases human presence in an area, even temporarily, will increase noise, waste, and the potential for hunting, timber harvesting, etc.

5. Environmental Mitigation Actions (Tables 2 & 3):

For the Initial EMMP, summarize the mitigation measures in the “Environmental Mitigation Plan” (Table 2) and briefly describe how these measures will be monitored in the “Environmental Monitoring Table” (Table 3). Ensure that Table 3 includes the cost of implementing and monitoring each of the mitigation measures listed.

For the Annual EMMP, describe the effectiveness of mitigation measures based on monitoring. For example:

a) What mitigation measures have been put in place? How is the success of mitigation measures being determined (i.e., indicators)? Explain if and why the mitigation measures are not working or not effective? What adjustments need to be made?

b) What is being monitored, how frequently and where, and what action is being taken (as needed) based on the results of the monitoring?

6. Social Considerations

Gender equality is a USG-wide priority and USAID has, and will continue to take a lead role in that effort. Integrating gender considerations into all stages of planning, programming, and implementation of development assistance is not only a legal mandate; it is an essential part of effective and sustainable development. The Automated Directive System (ADS) 201 sets out specific requirements to help ensure that appropriate consideration is given to gender as a factor in development planning at the Development Objective and the Intermediate Results level of Development Objectives all the way down to the intervention level. This programming policy includes clear guidance on the procedures for gender integration where determined to be appropriate.

Additionally, the USAID Disability Policy Paper (http://pdf.usaid.gov/pdf_docs/PDABQ631.pdf) sets out specific requirements to help ensure that appropriate consideration is given to persons with disabilities as a factor in development planning at the Development Objective and the Intermediate Results level of Development Objectives all the way down to the intervention level. Therefore, gender and persons with disabilities considerations are included in the EMMP checklist to ensure intervention implementation adheres to agency priorities and mandate. Additional information can be found at the following website: http://www.usaid.gov/sites/default/files/Guide_How_Integrate_Disability_Gender_Assessments_2010.pdf.

Impacts on indigenous cultures and their traditions should also be considered.

Ultimately, consideration of social issues helps avoid significant environmental effects (see 216.3 (a)(3)(iii)). Environmental mitigation measures should be specifically designed to take
in account social issues such as gender and persons with disability, thus ensuring greater success of the mitigation measure and greater long-term sustainability of the intervention. The impacts and roles of women and children should be also taken into consideration when completing Table 2 regarding environmental (social) impacts and designing mitigation measures.

7. Climate Change Integration

Climate change impacts all areas of development and is often considered both a threat and a driver to many activities that USAID supports. Good climate change integration is part of good activity design. In addition, Executive Order 13677: “Climate-Resilient International Development” encourages integration of the Agency’s GCC Initiative (GCC) of mitigation and adaptation principles throughout its portfolios. Therefore, GCC impacts (to the intervention and from the intervention implementation) shall also be considered. Actions that would minimize GCC impacts shall be included in the list of mitigation measures to be implemented.
<table>
<thead>
<tr>
<th>Name of intervention:</th>
<th>Implementing Partner:</th>
<th>Award Number:</th>
<th>Date:</th>
<th>Relevant IEE/ETD#</th>
<th>Column A</th>
<th>Column B</th>
<th>Column C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**INFRATESTRUCTURE (Buildings, roads, WASH, etc.)**

1. **Will the intervention involve construction and/or reconstruction/rehabilitation of any type of building?** For new construction, if less than 1,000 m² = medium risk, if greater than 1,000 m² = high risk.

2. **Will the intervention involve building penetrating roads, road rehabilitation and maintenance or other road related infrastructure (drainage, bridges, etc.)?** If penetrating road construction/rerouting = high risk, if repair/rehabilitation (improving drainage, resurfacing of existing roads) = medium risk.

3. **Will the intervention involve construction or rehabilitation of water and sanitation infrastructure (irrigation systems, potable water, water harvesting, septic systems etc.)?** Potable water systems require testing for bacteria, arsenic and other heavy metals.

4. **Will the intervention involve construction or rehabilitation of any other infrastructure such as landfills, incinerators, energy infrastructure, etc.?**

5. **Will the infrastructure intervention cost more than US $500,000?** If YES, approval of a USAID Engineer is required as mitigation measures in Table 2. Additionally, compliance with FAA 611 is required (please consult with the mission legal advisor).

6. **Does the intervention require adherence to national building code or other national regulatory standard?** Mitigation measures in Table 2.

7. **Does the intervention require local planning permissions (i.e zoning, building permits, etc.)?**

**BIOPHYSICAL**

8. **Will the intervention involve the purchase, use, plans to use, or training in the use of pesticides (including bio pesticides like neem)?**

9. **Will the intervention involve changes in water quality (pollution, sedimentation, stagnation, salinization, temperature change, etc.)?**

10. **Will the intervention affect surface or groundwater quantity?**

11. **Will the intervention involve training and/or implementation of agricultural practices/production including animal husbandry?**

12. **Will the intervention involve aquaculture systems?**

13. **Will the intervention involve the use or disposal of hazardous materials (used engine oil, paint, varnish, lead-based products, fluorescent light bulbs/mercury, batteries, asbestos or other hazardous or special management waste)?** Consider effects to both the biophysical environment and human health.

14. **Will the intervention involve implementation of timber management, extraction of forest products, clearing of forest cover, and/or conversion of forest land by cutting of trees >20cm diameter at base height (DBH)?**

15. **Is the intervention in or near (within 50m²) any sensitive terrestrial or...**
<table>
<thead>
<tr>
<th></th>
<th>aquatic areas including protected areas, wetlands, critical wildlife habitat (including nesting areas), and threatened or endangered species?</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Will the interventions proposed generate airborne particulates (dust), liquids, or solids (i.e. discharge pollutants) or potentially violate local air standards?</td>
</tr>
<tr>
<td>17</td>
<td>Will the intervention create objectionable odors?</td>
</tr>
<tr>
<td>18</td>
<td>Will the intervention occur on steep slopes (greater than 15%)?</td>
</tr>
<tr>
<td>19</td>
<td>Will the intervention contribute to erosion?</td>
</tr>
<tr>
<td>20</td>
<td>Will the intervention change existing land use in the vicinity?</td>
</tr>
<tr>
<td>21</td>
<td>Is the proposed intervention incompatible with land type (i.e., annual crops on steep slopes, infrastructure on poorly drained soils)?</td>
</tr>
<tr>
<td>22</td>
<td>Will the intervention affect unique geologic or physical features?</td>
</tr>
<tr>
<td>23</td>
<td>Will the intervention have potential effects to inhabitants, natural landscapes, or flora/fauna downstream from the intervention site?</td>
</tr>
<tr>
<td>24</td>
<td>Will the intervention have a direct or indirect effect, or include actions with mangroves, coral reefs and other marine/coastal ecosystems?</td>
</tr>
</tbody>
</table>

**GLOBAL CLIMATE CHANGE**

<table>
<thead>
<tr>
<th></th>
<th>Are interventions or outcomes vulnerable to changes in the weather or climate such as changes in precipitation patterns, increased temperatures or sea level rise?</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Does the intervention exacerbate climate change vulnerabilities (i.e., drought, flooding, decrease water supply)?</td>
</tr>
<tr>
<td>26</td>
<td>Will the intervention create greenhouse gas emissions from decomposing waste, burning of organic matter, or use of fossil fuels etc. (consider duration and scale)</td>
</tr>
</tbody>
</table>

**SOCIO ECONOMIC**

<table>
<thead>
<tr>
<th></th>
<th>Will the intervention contribute to displacement of people, housing or businesses?</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Will the intervention affect indigenous peoples and/or unique cultural or historical features?</td>
</tr>
<tr>
<td>29</td>
<td>Will the intervention expose people or property to flooding?</td>
</tr>
</tbody>
</table>

**ENVIRONMENT & HEALTH**

<table>
<thead>
<tr>
<th></th>
<th>Will the intervention create conditions encouraging an increase in illness, diseases, or disease vectors (waterborne, STDs or other)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Will the intervention generate hazards or barriers for pedestrians, motorists or persons with disabilities?</td>
</tr>
<tr>
<td>32</td>
<td>Will the intervention involve the use, storage, handling or disposal of syringes, gauzes, gloves and other biohazard medical waste?</td>
</tr>
<tr>
<td>33</td>
<td>Will the intervention expose workers to occupational hazards?</td>
</tr>
<tr>
<td>34</td>
<td>Will the intervention increase existing noise levels?</td>
</tr>
</tbody>
</table>

**GENDER**

<table>
<thead>
<tr>
<th></th>
<th>Does the intervention inhibit the equal involvement of men and women?</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>Do the intervention results disproportionally benefit/impact men and women?</td>
</tr>
</tbody>
</table>

**OTHER**

<table>
<thead>
<tr>
<th></th>
<th>Does the intervention/activity involve a sub-award component?</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>Is an operations and maintenance plan required? (for all type of infrastructure, equipment, road rehabilitation, or water and sanitation action = Yes)</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
**RECOMMENDED ACTION (Check Appropriate Action):**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>The intervention has no potential for significant effects on the environment. No further environmental review is required (Categorical Exclusion). No further action required.</td>
</tr>
<tr>
<td>(b)</td>
<td>The intervention includes mitigation measures and design criteria that if, applied will avoid a significant effect on the environment (Negative Determination with Conditions). EMMP Required.</td>
</tr>
<tr>
<td>(c)</td>
<td>The intervention has potentially substantial or significant adverse environmental effects; therefore, an EA is required before intervention implementation (Positive Determination). NOTE: if any question is marked as High Risk, an EA is required and Tables 2 and 3 of the EMMP do not need to be completed.</td>
</tr>
<tr>
<td>(d)</td>
<td>The intervention has significant adverse environmental effects that cannot be mitigated. Proposed mitigation is insufficient to eliminate these effects and alternatives are not feasible. The intervention is not recommended for implementation. <em>For sub awards, do not fund.</em></td>
</tr>
</tbody>
</table>

---

1. Construction interventions need to be reviewed for scale, planned use, building code needs and maintenance. New construction having a footprint larger than 1000 meters² or 10,000 feet² is considered large scale and high risk. Some small construction interventions, such as building an entrance sign to a park, may require simple mitigation measures whereas larger buildings will require more extensive review and monitoring.

2. New construction of roads are considered high risk and will require a full environmental assessment of the planned construction, i.e. a Positive Determination. Any reroutes of a road or trail longer than 100 meters is considered a high risk. Reroutes within a protected area, nearby a water source/wetlands, and/or archaeological site are considered a high risk.


4. The purchases of packaged store pesticides are included. The planned procurement and/or use or training on the use of pesticides will trigger the need to develop an amended Initial Environmental Examination that meets USAID pesticide procedures (Pesticide Evaluation Report and Safer Use Action Plan or “PERSUAP”) for the intervention.

5. Any interventions that involve the commercial harvesting of trees or converting forests is considered high risk and will require a full environmental assessment of the intervention (i.e. Positive Determination). The reference to cutting trees of greater than 20cm dbh is for actions related to forest management and commercial forest products and not for individual trees being cut for construction or non commercial purpose.

6. Less than 50meters is based on best practices from US Federal and State regulations.

7. A positive response to gender questions require follow up only when there are other positive responses on questions, and an EMMP is developed.

8. If the intervention includes a sub-award component, each sub-awardee shall be required to prepare an EMMP prior to implementation of the sub-award.
**Table 2 : Environmental Mitigation Plan**

Enter the Question/Row # of the potential negative effects with check marks in Column A (Table 1) and complete table below for mitigation measures to reduce or eliminate the issue. In the Sub-Activity or Component Column, list the main actions to be implemented. Under each action, list the tasks (Steps) that are needed to implement this action.

<table>
<thead>
<tr>
<th># of the question from Table 1</th>
<th>Action or component with the different tasks required to implement the action.</th>
<th>Description of Environmental Effect</th>
<th>Environmental Mitigation Measures*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Component - Construction and maintenance of latrine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 1- design</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 2- location</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 3- purchase of materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 4- build latrine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 5- site clean-up/disposal of construction waste</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 6- use of latrine/operations and maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Component – Purchase and construction of a water storage system</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Please be as specific as possible. Sample mitigation measures are located in the USAID Sector Environmental Guidelines or other pertinent guidelines, see [http://www.usaidgems.org/sectorGuidelines.htm](http://www.usaidgems.org/sectorGuidelines.htm). Details on exact monitoring plan are illustrated in Table 3, Environmental Monitoring and Evaluation Tracking Table.
## Table 3: Environmental Monitoring

<table>
<thead>
<tr>
<th>Description of Mitigation Measure (same as in Table 2)</th>
<th>Responsible Party for implementing mitigation measures</th>
<th>Monitoring Methods</th>
<th>Estimated Cost of implementing mitigation measures and monitoring</th>
<th>Date Monitored</th>
<th>Problems Encountered</th>
<th>Mitigation Effectiveness</th>
<th>Recommended Adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes
- **Description of Mitigation Measure:** Refer to Table 2 for details.
- **Monitoring Methods:** Methods and frequency of monitoring.
- **Estimated Cost:** Cost associated with implementing measures.
- **Results:** Data on dates monitored, problems encountered, and mitigation effectiveness.
- **Recommended Adjustments:** Any necessary adjustments based on monitoring results.