

**INITIAL ENVIRONMENTAL EXAMINATION
&
REQUEST FOR CATEGORICAL EXCLUSION**

**USAID/KENYA OFFICE OF POPULATION & HEALTH PORTFOLIO
(SO3)**

Program Number: SO 615-003: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

Country: Kenya

Functional Objective: 3 – Investing in People

Program Area: 3.1-Health

Program Elements: 3.1.1-HIV/AIDS
3.1.2-Tuberculosis
3.1.3-Malaria
3.1.4-Avian Influenza
3.1.6-Maternal Child Health
3.1.7-Family Planning/Reproductive Health
3.1.8-Water Supply and Sanitation

Funding Period for SO3: FY07-FY11

Life of Activity Funding: estimated \$1.6 billion

IEE Prepared By: Rochelle Rainey, GH/HIDN/ID
Robert Buzzard, USAID/Kenya Mission Environmental Officer

Current Date: February 18, 2008

IEE Amendment (Y/N): N If "yes", Number & date of original IEEs

Additional references:

Previous IEE: Kenya SO3 IEE - Reduce Fertility and the Risk of HIV/AIDS Transmission through Sustainable, Integrated Family Planning and Health Services (APHIA). Filename 29kenya4.doc, approved 11/4/99

GH IVM PEA 2007.doc Integrated Vector Management
32AFR2_ITM_PEA.doc 2002 Programmatic Environmental Assessment for Insecticide-Treated Materials in USAID Activities in Sub-Saharan Africa

ENVIRONMENTAL DETERMINATION RECOMMENDED

Categorical Exclusion: X Negative Determination: X
Positive Determination: Deferral: X

ADDITIONAL ELEMENTS

CONDITIONS: X

SUMMARY OF FINDINGS

The purpose of this FY 2008 Initial Environmental Examination (IEE) is to provide threshold determinations for the activities of USAID/Kenya's **Strategic Objective No. 3 (SO3): Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health**. All bi-lateral health activities funded through the USAID/Kenya Mission fall under this Environmental Threshold Decision designated at the Strategic Objective level. Activities funded by USAID/Kenya but implemented under centrally-managed mechanisms are covered by this IEE. Centrally-managed and funded mechanisms are covered by environmental determinations out of their home Bureau, usually the Global Health Bureau. In this case, SO3 activity managers are not responsible for ensuring environmental compliance with the provisions and conditions of the respective Global Health IEEs. However, they will consult with CTOs of centrally-funded mechanisms to ensure activities comply with the Global Health Bureau IEE.

USAID/Kenya's health program is a diverse portfolio, with focus on HIV/AIDS, Tuberculosis, Malaria, Avian Influenza, Maternal Child Health, Family Planning/Reproductive Health, Water Supply and Sanitation, and cross-cutting areas of Health Services Delivery, Health Commodities Procurement and Supply Chain Management, Health Communications and Marketing, and Health Sector Reform/Policy/Strategic Information and Operational Research.

This IEE consolidates the threshold determinations for all activities currently envisioned under SO3 and replaces the previous IEE for SO3, completed in 1999. Section 1 covers the categories of activities undertaken under SO3; Section 2 provides an overview of Kenya's health sector; Section 3 provides an evaluation of the potential environmental impacts of SO3 activities; Section 4 provides the threshold environmental determination for SO3; Section 5 describes mitigation measures required for implementation; and Section 6 provides information and forms for screening activities for potential environmental impacts and for monitoring compliance with threshold determinations.

CATEGORICAL EXCLUSIONS

The following activities are **Categorically Excluded** from initial environmental examination as 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):

- (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.);
- (ii) Activities involving controlled experimentation exclusively for the purpose of research and field evaluation and carefully monitored;
- (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 and organizations to engage in development planning.

However, there are conditions for these activities; *i.e.*, if any topic associated with these activities is one that inherently affects the environment, such as training in HIV/AIDS testing that involves use and disposal of medical waste, or training related to malaria prevention then such training will include information on how to minimize and/or mitigate these impacts. Examples include, instruction on safe disposal of sharps and biological samples generated from HIV/AIDS testing or training in proper household behaviors to minimize exposure during indoor residual spraying campaigns and proper use of insecticide-treated materials like bed nets.

THRESHOLD ENVIRONMENTAL DETERMINATIONS

For the types of activities listed below, an IEE was conducted to arrive at recommended threshold determinations.

Pursuant to 22 CFR 216.3(a)(2)(iii), a **Negative Determination with Conditions** is recommended for SO3 activities that have potential for negative impact on the environment in the following categories, and as presented in Table 2 in Section 3 of this document:

- 1) Procurement, storage, management and disposal of public health commodities, including pharmaceutical drugs;
- 2) Generation, storage and disposal of hazardous or highly hazardous medical waste, e.g. blood testing in VCT centers, STI/HIV testing, blood for malaria and anemia, and laboratory-related activities;
- 3) Small-Scale construction/rehabilitation of health facilities;
- 4) Small-Scale water and sanitation activities;
- 5) Small-Scale agricultural sector activities; and
- 6) Use of pesticides (*i.e.*, specific long-lasting insecticide treated bed nets)

The conditions for these activities draw on the Environmental Guidelines for Small-Scale Activities in Africa (EGSSAA), found at online at <http://www.encapafrika.org/EGSSAA>.

A **deferral of a threshold determination**, per 22 CFR 216.3(a)(7)(iii), is recommended for the proposed **Integrated Vector Management (IVM) program for malaria prevention and control** pending clearer identification of the activities to be undertaken. USAID/Kenya, prior to implementing activities in this area, will amend this IEE to provide the required analyses under 22 CFR 216.3(b)(1) concerning pesticides, drawing on the existing Programmatic Environmental Assessment (PEA) for IVM approved by the Global Health Bureau. An amended IEE and Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP), or an EA, as appropriate, must be submitted to the Bureau Environmental Officer for concurrence to allow the activity to proceed in compliance with 22 CFR 216. The activity(ies) involved may not proceed until this IEE is amended to remove the deferral, once the appropriate environmental review has occurred.

In addition, there are certain requirements that apply to all activities falling under the threshold determination of “Negative Determination with Conditions”. These include:

1. The responsibility for implementing activities in accordance with the findings and conditions of this IEE must be incorporated into all contracts and grants that serve to implement activities covered under this IEE.
2. USAID/Kenya's SO3 bi-lateral implementing partners will complete an annual environmental mitigation and monitoring report (EMMR) of all activities, using the guidance and forms in Section 6. This should be incorporated into annual work plans for completion in October of each year.
3. USAID/Kenya SO3 CTOs will undertake field visits and consultations with implementing partners to jointly assess the environmental impacts of ongoing activities, and the effectiveness of associated mitigation and monitoring plans.
4. Organizations receiving USAID/Kenya funds and transferring them through grants or other mechanisms to other organizations must incorporate provisions stipulating:
 - a) the completion of annual EMMRs, and
 - b) that activities to be undertaken will be within the scope of the environmental determinations and recommendations of this IEE.
5. USAID/Kenya will ensure that implementing organizations have sufficient capacity to complete the environmental screening process and to implement monitoring and mitigation measures.
6. For activities that are not funded by USAID/Kenya, but are an identifiable part of an SO3 activity (for example if another source of funding is supporting agricultural activities at an HIV/AIDS site under an APHIA award), the implementing partner must assure that, at a minimum, the equivalent USAID standards for mitigation, as presented in Section 5, are followed.
7. Adherence to applicable GOK environmental laws and policies.

MONITORING AND REPORTING

USAID/Kenya SO3 will use an annual EMMR to ensure programmatic compliance with 22 CFR 216 and ADS 204.5.4 by documenting that the conditions specified in the SO3 IEE have been met for all activities carried out under each bi-lateral award. The EMMR must be completed by each organization carrying out activities under a USAID/Kenya SO3 bi-lateral award. The EMMRs will be reviewed and approved by the CTO and the Mission Environmental Officer. The EMMR consists of 3 parts:

1. The Environmental Verification Form
2. The Mitigation Plan for specific environmental threats carried out by the implementer
3. The Reporting Form

The EMMR Environmental Verification Form

Because of the integrated nature of the USAID/Kenya SO3 portfolio, a single bi-lateral award (along with any sub-awards) often contains activities having different conditions required for prevention or mitigation of environmental impact. This form indicates the categories of activities carried out by implementing partners (or their sub-awardees).

The EMMR Mitigation Plan

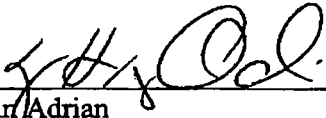
The Mitigation Plan describes specific actions that will be undertaken under each category of activity when screening reveals potential environmental threats as outlined in Section 3 of the SO3 IEE. In these cases, mitigation will be undertaken as described in Section 5 of this IEE. It

also identifies the person responsible for monitoring compliance with mitigation and the indicator, method and frequency of monitoring.

The EMMR Reporting Form

This form reports on the results of applying the mitigation measures described in the Mitigation Plan and identifies outstanding issues with respect to required conditions. In some cases, digital photos will be the best way to document mitigation and should be included in the report.

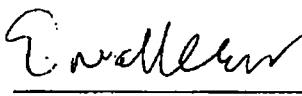
APPROVAL OF ENVIRONMENTAL ACTION RECOMMENDED:

Recommended By:  4/30/08
Lynn Adrian
USAID/Kenya Health Team Leader
Date

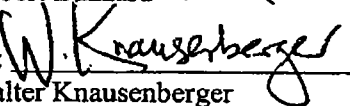
Concurrence:  4/28/08
Brian Hirsch
AFR Bureau Environmental Officer
Date

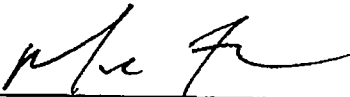
File No.: Kenya_FY08_IIP-Health_IEE_02xx08.doc.

Clearances:

USAID/Kenya Mission Director  4/23/08
Erna Kerst
Date

USAID/Kenya Environmental Officer  20 Apr 08
Robert Buzzard
Date

East Africa Regional Environmental Advisor:  21 Apr 08
Walter Knausenberger
Date

Concurrence:  6/9/08
Micheal Zeilinger
GH Bureau Environmental Officer
Date

INITIAL ENVIRONMENTAL EXAMINATION (IEE) USAID/KENYA HEALTH PORTFOLIO SO3

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ACRONYM LIST

ACT	Artemisinin-based Combination Therapy
AIDS	Acquired Immune Deficiency Syndrome
APHIA II	AIDS, Population, and Health Integrated Assistance Program II
ARV	Anti-retroviral
ART	Anti-retroviral Therapy
CHEWS	Community Health Extension Workers
CORPS	Community-Owned Resource Persons
CS	Child Survival
CTO	USAID Cognizant Technical Officer
DHS	Demographic and Health Survey
EGSSA	USAID Environmental Guidelines for Small-Scale Activities in Africa
EMCA	Environmental Management and Coordination Act
EMMR	Environmental Mitigation and Monitoring Report
EPI	Expanded Program on Immunization
ESD	Environmentally Sound Design
FP	Family Planning
GHAI	Global HIV/AIDS Initiative
GOK	Government of Kenya
HIV	Human Immunodeficiency Virus
IEC	Information, Education, Communication
IEE	Initial Environmental Examination
IPTp	Intermittent Preventive Treatment for Malaria in Pregnancy
IRS	Indoor Residual Spraying
IVM	Integrated Vector Management
ITN	Insecticide-treated bed net
KEPH	Kenya Essential Package for Health
KEPI	Kenya Expanded Program on Immunization
KHPF	Kenya Health Policy Framework
KNASP	Kenya National AIDS Strategic Plan
LLITN	Long-lasting insecticide-treated bed net
MCH	Maternal and Child Health
MEO	Mission Environmental Officer
MOH	Ministry of Health
NEMA	National Environmental Management Authority
NHSSP	National Health Sector Strategic Plan
NGO	Non-governmental Organization
NTLP	National TB and Leprosy Program
OGAC	Office of the US Global AIDS Coordinator
PEA	Programmatic Environmental Assessment
PEPFAR	President's Emergency Plan for AIDS Relief
PERSUAP	Pesticide Evaluation Report and Safer Use Action Plan
PHAST	Participatory Hygiene and Sanitation Transformation
PIEE	Programmatic Initial Environmental Examination

PMI	President's Malaria Initiative
PMTCT	Prevention of mother-to-child transmission
RH	Reproductive Health
SDP	Service Delivery Points
SEA	Supplemental Environmental Assessment
SO	Strategic Objective
SO3	USAID/Kenya's Strategic Objective 3: Health
SWAp	Sector Wide Approach
TB	Tuberculosis
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USG	United States Government
VCT	Voluntary Testing and Counseling

REQUEST FOR CATEGORICAL EXCLUSION

USAID/KENYA OFFICE OF POPULATION & HEALTH PORTFOLIO (SO3)

Program Number: SO 615-003: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

Country: Kenya

Functional Objective: 3 – Investing in People

Program Area: 3.1-Health

Program Elements: 3.1.1-HIV/AIDS
3.1.2-Tuberculosis
3.1.3-Malaria
3.1.4-Avian Influenza
3.1.6-Maternal Child Health
3.1.7-Family Planning/Reproductive Health
3.1.8-Water Supply and Sanitation

Funding Period for SO3: FY07-FY11

Life of Activity Funding: Estimated \$1.6 billion

SECTION 1: BACKGROUND AND PROJECT DESCRIPTION

Purpose and Scope of IEE

All projects funded by USAID must conform to USAID's environmental procedures (22 CFR 216) requiring evaluation and action to ensure that adverse environmental impacts are prevented or mitigated. The purpose of this Initial Environmental Examination (IEE) is to provide threshold determinations for the activities of USAID/Kenya's **Strategic Objective No. 3 (SO3): Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health**. All bi-lateral health activities funded through the USAID/Kenya Mission fall under this Environmental Threshold Determination designated at the Strategic Objective level. Activities funded by USAID/Kenya but implemented under centrally-managed mechanisms are covered by this IEE. Centrally-managed and funded mechanisms are covered by environmental determinations out of their home Bureau, usually the Global Health Bureau. In this case, SO3 activity managers are not responsible for ensuring environmental compliance with the provisions and conditions of the respective Global Health IEEs. However, they will consult with CTOs of centrally-funded mechanisms to ensure activities comply with the Global Health Bureau IEE.

This IEE consolidates the threshold determinations for all activities currently envisioned under SO3 and replaces the previous IEE for SO3, completed in 1999. Section 1 covers the categories of activities undertaken under SO3; Section 2 provides an overview of Kenya's health sector; Section 3 provides an evaluation of the potential environmental impacts of SO3 activities; Section 4 provides the threshold environmental determination for SO3; Section 5 describes mitigation measures required for implementation; and Section 6 provides information and forms for screening activities for potential environmental impacts and for monitoring compliance with threshold determinations.

If additional activities are proposed under SO3, an Environmental Review Form (Annex 2) will be completed by the Cognizant Technical Officer (CTO) and/or the implementing partner and submitted to the Mission Environmental Officer to ensure the activities and conditions in this IEE still apply. In the

event any new proposed activity differs substantially from the type or nature of activities described here, or requires different or additional mitigation measures beyond those described, this IEE will be amended.

Overview of USAID/Kenya SO3 Health Portfolio

USAID/Kenya's health program is a diverse portfolio, with focus on HIV/AIDS, Tuberculosis, Malaria, Avian Influenza, Maternal Child Health, Family Planning/Reproductive Health, Water Supply and Sanitation, and cross-cutting areas of Health Services Delivery, Health Commodities Procurement and Supply Chain Management, Health Communications and Marketing, and Health Sector Reform/Policy/Strategic Information and Operational Research.

Kenya is one of 15 focus countries for the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), which has meant a major expansion of HIV/AIDS programs, with special attention to care and treatment. SO3 is dominated by PEPFAR activities. For a projected FY08 budget of approximately US\$350M, PEPFAR funds account for approximately US\$330M (94%) of the total SO3 budget.

Kenya is also one of the 15 focus countries for the U.S. President's Malaria Initiative (PMI) in Africa, which seeks to reduce malaria mortality by 50% in these sub-Saharan countries by 2010. As part of a new malaria control program under the PMI, USAID proposes to implement Indoor Residual Spraying (IRS) in Kenya in FY2008, in addition to expanding Long Lasting Insecticide Treated Nets (LLITN) bed net distribution, artemisinin treatment, and case management.

In 2006, under the AIDS, Population, and Health Integrated Assistance Program (APHIA) II, USAID/Kenya signed cooperative agreements with seven consortia to provide integrated and comprehensive health service-delivery programs at the provincial level (Central Province and Nairobi are combined in one award), plus an additional award for monitoring and evaluation. APHIA II is designed to contribute substantively to USG and GOK goals in HIV/AIDS and Tuberculosis (TB) prevention, treatment, care and support, and to a more limited extent, reproductive health/family planning (RH/FP), malaria and maternal and child health (MCH) services. In addition, there are selected training and operations research activities that contribute to improved service delivery.

All consortia focus on integrated service delivery at the district and provincial level, and all focus on community needs and the goals of the National Health Sector Strategic Plan II (NHSSP II), and the Kenya National AIDS Strategic Plan (KNASP) 2005-2010. The activities of each consortium have been developed in close collaboration with MOH counterparts at the central, provincial, and district levels to complement existing MOH programs and work of other donors and partners. Activities within each region link to national level systems to help achieve their goals. The regional activities have multiple sources of USG funding, including GHAI (Global HIV/AIDS Initiative funds), Population funds (FP/RH), and Child Survival (CS) funds (child survival, malaria, and other infectious diseases), and each geographic region has a different mix of funds. In all regions, GHAI funds are predominant.

Categories of Activities under SO3

Following are the categories of activities currently or potentially carried out by USAID/Kenya under SO3. Because the SO3 portfolio is largely implemented geographically by province, different provinces have a different mix of health activities, depending on locally identified priorities. As noted above, over 90% of the SO3 funds are PEPFAR, and other FP/RH and MCH activities are integrated into this platform. The technical areas corresponding to F Framework program elements are listed first, followed by cross-cutting areas of Health Services Delivery, Health Commodities Procurement and Supply Chain Management, Health Communications and Marketing, and Health Sector Reform/Policy/Strategic Information and Operational Research.

Foreign Assistance (F) Framework Technical Program Elements

3.1.1. HIV/AIDS

USAID/Kenya supports activities in all of the PEPFAR program areas except medical transmission-injection safety, which is covered by CDC.

Prevention of Mother-to-Child Transmission (PMTCT) activities include counseling and HIV testing for pregnant women, Anti-Retroviral (ARV) prophylaxis for HIV-infected pregnant women and their newborns, counseling and support for maternal nutrition and safe infant feeding practices, and family planning counseling or referral. PMTCT services also include counseling on safe delivery options; referral to treatment (including Anti-Retroviral Therapy (ART)); referral to care services, both clinic- and home-based, for HIV-infected family members (the mother, the husband/partner, other children), including for opportunistic infections; and mobilizing mutual support and community support for PMTCT clients to improve health outcomes and reduce stigma and discrimination. Implementation of these activities may include provision of technical assistance, training, supervision, provision of commodities, and rehabilitation of facilities.

Abstinence/Be Faithful activities include community mobilization, training, information, education, and communication, community outreach activities, and mass media campaigns to promote abstinence, fidelity, delay of sexual activity, partner reduction messages, and related social and community norms.

Other Prevention Activities includes purchase and promotion of condoms to high-risk groups, through social marketing and through free distribution; management of other sexually transmitted infections (if not in a palliative care setting); and behavior change information, education, and communication through community outreach and mass media programs that focus on individual risk perception, ability to negotiate condom use, etc.

Palliative Care is the broadest category of HIV/AIDS interventions, and includes clinic-based and home- or community-based activities for HIV-infected adults and children and their families such as: symptom diagnosis and relief; psychological and spiritual support; clinical monitoring, related laboratory services, and management of opportunistic infections and other HIV/AIDS-related complications (including provision of pharmaceuticals and other supplies); and culturally appropriate end-of-life care. Activities in this category also may include social and material support such as counseling in nutrition, legal aid, and housing. Also covered is community mobilization and outreach to promote uptake of the services and to reduce stigma and discrimination. PEPFAR funding is also used to provide HIV-infected clients with insecticide-treated bed nets and simple household water purification kits to reduce water-borne infections. All palliative care activities include training and support of family caregivers, volunteers, and clinical and implementing partner staff. Clinical and home-based care givers are trained and supervised in line with MOH standards, which include physical care for chronically ill AIDS patients. Some rehabilitation of MOH clinical facilities may be supported in order to deliver these services. Funding in this area also is programmed to strengthen the capacity of local nongovernmental, including faith-based and community-based, organizations to provide community- and home-based services to HIV-infected clients.

TB-HIV activities include examinations, clinical monitoring, and related laboratory services; treatment and prevention of TB in basic health care settings (including provision of pharmaceuticals and other supplies); screening and referral for HIV testing; and clinical care provided in TB service settings.

Orphans and Vulnerable Children (OVC). There are an estimated 1.1 million orphans due to AIDS in Kenya. In addition, many more children are vulnerable because they are living in AIDS-affected families or are infected with HIV themselves. Activities for this target group include provision of food and

nutrition; schooling; health services; shelter and security; civil rights and registration; and psychosocial support. In addition to providing these services, OVC activities include technical assistance, training of caregivers and implementing partner staff, community mobilization, capacity strengthening of local nongovernmental organizations, advocacy, and monitoring and evaluation, including studies. PEPFAR funds also provide OVC households with insecticide-treated bed nets (to prevent malaria) and simple household water purification kits (to reduce water-borne infections).

HIV/AIDS Counseling and Testing activities include counseling and rapid HIV testing, as well as referral to other HIV/AIDS services. Activities also include training, monitoring and evaluation, and could include rehabilitation of facilities.

Antiretroviral drugs (ARV) activities in this category include purchase of ARV medicines in line with Office of the US Global AIDS Coordinator (OGAC) guidance and Kenyan Ministry of Health (MOH) standards and purchase of related supplies for administering ARV medicines; as well as supporting and strengthening the capacity of the MOH and other key organizations to manage the supply chain to ensure reliable ARV supplies for treatment scale up. Technical assistance and training, logistics support, **rehabilitation of facilities, and procurement of medicines** could be undertaken as part of this activity.

Antiretroviral Therapy activities include support to rapidly expand ART as part of comprehensive integrated HIV/AIDS detection, prevention, care, treatment, and support services. In addition, HIV/AIDS activities place special emphasis on mobilizing and strengthening local community-based organizations to provide psychosocial and peer support and follow-up that can increase uptake of the services and help ensure treatment adherence and successful outcomes for the patient. ART activities can include **rehabilitation of facilities**, technical assistance and supervision, monitoring and evaluation, and **provision of equipment and supplies**,

Laboratory Services are provided under HIV/AIDS as related to treatment activities, with the purpose of strengthening Kenya's laboratory network to improve patient monitoring.

Strategic Information activities aim to strengthen HIV/AIDS surveillance, health management information systems, and monitoring and evaluation. Activities involve technical assistance, training, procurement of equipment and supplies, and implementation and publication/dissemination of surveys and studies. Examples of activities include development of improved tools and models for collecting, analyzing, and disseminating HIV/AIDS behavioral and biological surveillance and monitoring information; facility surveys; strengthening country monitoring and evaluation or surveillance systems; developing and disseminating best practices to improve program efficiency and effectiveness in any PEPFAR programmatic area; evaluating national prevention, care, and treatment efforts; and analysis and quality assurance of demographic and health data related to HIV/AIDS.

Health Systems includes strengthening national policies and systems that are essential to HIV/AIDS service expansion and entails training, capacity building of local organizations to improve effectiveness and sustainability, technical assistance in a range of areas, and support in development of policies and advocacy. Activities address human resource constraints to scaling up services, reducing stigma and discrimination, addressing gender issues, and other cross-cutting activities in management and implementation. USAID supports the Ministry of Health's hiring of health workers for places that are underserved and have high HIV burdens. It has hired 830 nurses, laboratory technicians, and other workers, and seconded two Technical Advisors to the MOH and one to the MPND.

3.1.2 Tuberculosis

Kenya is one of 19 TB focus countries for the US Government. Under SO3, USAID/Kenya provides support to the GOK through training and supervision, and through distribution of TB drugs. Currently,

USAID does not fund TB diagnosis, treatment or procurement of drugs or other commodities, but this could be included in the future.

3.1.3 Malaria

With FY2008 funds from the US President's Malaria Initiative, the budget for malaria activities will go from US\$6 million to approximately US\$20M. USAID continues to use a comprehensive approach for implementing malaria prevention and treatment programs. Prevention activities will include marketing and distribution of long-lasting insecticide treated nets (LLITNs) (only LLITNs will be procured), intermittent preventive treatment for malaria in pregnancy (IPTp), and a new program in indoor residual spraying. Treatment activities will include assistance in the transition to the new artemisinin combination drug therapy (ACT) and case management. Both prevention and treatment are supported by intensive information, education, and communication (IEC) activities, including household and community mobilization, to encourage preventive and appropriate health-seeking behavior and to promote early and effective treatment of malaria and treatment adherence.

3.1.4 Avian Influenza

USAID/Kenya worked with the Ministry of Health and the Ministry of Livestock and Fisheries Development to prepare and implement the national avian influenza (AI) action plan. USAID provided personal protective equipment to the surveillance and response teams, and will help build communications, laboratory, and staff capacities to handle a possible outbreak. Currently, USAID/Kenya has no AI activities. However, laboratory construction and technical assistance for communications activities are planned for 2008. Further, USAID/Kenya is assessing the feasibility of upgrading the GoK's Virology Laboratory at the Central Veterinary Laboratories (CVL) Kabete to a biosafety level (BSL)-3/containment group (CG)-3 facility to improve the veterinary diagnostic capacity for AI. Among the options being considered with the World Bank are: 1) remodelling about half of the present facility to provide a laboratory with adequate biosafety, or 2) building a new BSL/CG-3 facility. If construction is decided upon, then appropriate environmentally sound engineering practices will be followed.

The USAID East Africa (EA) Regional Mission has been mandated by the Africa Bureau Avian Influenza Supplemental Operations Plan to coordinate technical support to eight primary client countries (Ethiopia, Eritrea, Kenya, Tanzania, DROC, Uganda, Rwanda and Sudan); the East Africa Limited Presence Countries (LPCs: Burundi, Djibouti, and Somalia, Comoros); and limited assistance to secondary client countries of the Congo, Madagascar and Zambia.

The AI Supplemental Operations Plan identifies activities to be executed in three priority phases: **Phase 1** (preparedness) activities are for the prevention of AI and are to be implemented immediately. **Phase 2** (surveillance) activities need to be in place to facilitate the fight against an outbreak, but these activities are neither urgent nor do they need to be included in the response phase or during an emergency. **Phase 3** (response) activities are linked to the appearance of disease outbreaks in either animals or humans.

Should Kenya experience an outbreak of AI, USAID/Kenya's response would not be covered in the approved IEEs for SO 3 and SO7. At the Africa regional and Global levels, a Programmatic Initial Environmental Examination (PIEE) for Avian Influenza programs has been approved, providing for screening-level environmental examination of the actions USAID anticipates taking across the Africa region in response to an outbreak of AI. That PIEE is intended to help fulfill USAID's environmental review requirements under 22CFR216. Following the PIEEs, each of the Missions' IEEs could be amended for response activities, and could be given recommended threshold decisions with conditions that should be followed for reducing risks to environment and human health.

3.1.8 Water Supply and Sanitation

These activities include water supply, handwashing stations, shower facilities, latrines and small-scale draining and wastewater treatment that may occur either under HIV/AIDS funding or as a specific SO3 initiative in the future.

Crosscutting Activities

Health Service Delivery

Using the platform provided by PEPFAR resources, SO3 provides integrated prevention and treatment services for HIV/AIDS, TB, malaria, 3.1.6 Maternal and Child Health (MCH) and 3.1.7 Reproductive Health/Family Planning (FP/RH) at the hospital, clinic and community levels through the APHIA II awards, ion. Funding may also be used to provide LLITNs and household water purification. Other activities include training, capacity building, data collection and analysis and planning.

Health Commodities Procurement and Supply Chain Management

USAID procures health commodities for national distribution, including ARVs, HIV test kits, and intrauterine contraceptive devices. USAID supports the national logistics system, including strengthening the Kenya Medical Supplies Agency and the National TB and Leprosy Program (NTLP).

Health Communications and Marketing

These activities are national in scope and aligned with the NHSSP II. These activities support service delivery programs with health communication messages and social marketing initiatives in HIV/AIDS, malaria, family planning, and child health.

Health Sector Reform/Policy/Strategic Information

USAID supports Kenya's Millennium Challenge Account Threshold Program, and will work with the GOK to help undertake the full implementation of planning, procurement, accounting, and auditing reforms within the Ministry of Health. USAID is committed to work with the MOH and donor partners to support the NHSSP II through the Sector-Wide Approach (SWAp), and to work with the broader Country Coordinating Mechanism to implement Global Fund for AIDS, Malaria and TB activities. USAID works with the Ministry of Health to identify key policy priorities in HIV/AIDS, reproductive health, and health financing and assists in developing and implementing new approaches. USAID provides support for surveys such as the Kenya Demographic Health Survey, the Kenya Service Provision Assessment, the National Health Accounts, and the national census. USAID also supports operations research in family planning and HIV/AIDS.

Funding Levels of the Activities

The estimated budget for SO3 through FY11 is US\$1.6 billion.

Disbursement and Implementation Arrangements

USAID has over 300 partners implementing SO3 activities, using a variety of funding and implementation mechanisms, including bilateral awards and buy-ins to centrally-managed mechanisms. Most of the SO3 activities are implemented under the 7 APHIA II awards in each of the provinces (with Central Province and Nairobi combined in one award), and funds are distributed to the lead partner of the APHIA consortia for that province according to the activities agreed in work plans. Central mechanisms are covered by their own IEEs under the Global Health or other Pillar or Regional Bureaus, but these activities are also included in this document.

SECTION 2: COUNTRY AND ENVIRONMENTAL INFORMATION

Kenya Overview

Kenya is situated in East Africa, straddling the equator between longitude 34° E and 42° E. The country has an area of 59,000Km² and a coastline of 608 km. Kenya has diverse landforms ranging from coastal plains, the dry Laikipia plateau, savanna grasslands and highlands on both sides of the Rift Valley. Administratively, the country is divided into eight provinces and further sub-divided into 137 districts. The 2007 population is estimated at 34.7 million. Sixty four percent (64%) of the economically active population depend on agriculture, which exerts considerable pressure on the natural resources.

Kenya ranks 152nd out of 177 countries on the United Nation's Human Development Index, an indication of low life expectancy, literacy and standard of living. According to UNICEF, the life expectancy at birth is 48 years, the adult literacy rate is 78% for men and 70% for women and the gross national income per capita is US\$530. Kenya has primary school drop-out rates between 5-6% and repetition rates between 15-16%. Access to improved drinking water sources ranges from 83% in urban areas to 46% in rural areas, and in both urban and rural settings less than half the population has access to improved sanitation facilities.

In 2004, Kenya was selected as a Millennium Challenge Account (MCA) Threshold Program-eligible country. Kenya benefits from a hard working, comparatively well-educated population; a dynamic entrepreneurial private sector from micro-enterprise to multinational levels; a relatively diversified economy; and basic infrastructure, albeit in need of repair and modernization.

Over the past 45 years, the population of Kenya has more than quadrupled - from eight million in the early 1960s to over 37 million in 2007. Over half of Kenya's population lives below the poverty line, and per capita income has declined every year between 1992 to 2003 (\$378 dropping to \$360). The nation struggles with significant regional disparities in rates of growth and investment, as well as with a prevalence of gender inequality in the distribution of income and wealth. Kenya's economic growth rate declined from 1.4% in 1998 to a negative 0.3% in 2001 mainly due to severe drought, crumbling infrastructure and insecurity. The economy began to recover after 2002, registering 2.8% growth in 2003, 4.3% in 2004, 5.8% in 2005, and 6.1% in 2006. This expansion was fairly broad-based and was built on a stable investment climate fostered by government, and on the resilience, resourcefulness and improved confidence of the private sector. Nairobi continues to be the primary communication and financial hub of East Africa. It enjoys the region's best transportation linkages, communications infrastructure and trained personnel, although these advantages are less prominent than in past years. In the opening months of 2008, a political crisis associated with a disputed Presidential election in December 2007 rocked the nation. It resulted in deep polarization along ethnic lines; a breakdown of law, order and security; a humanitarian crisis that was triggered by mass population displacements in Rift Valley, Western and Central Provinces; and over 1,000 deaths. The social, political and economic impacts of these events will be far-reaching as investment and lending rates decline and the tourism, manufacturing and transport sectors take dramatic downturns.

The MOH is the major financier and provider of health cares services in Kenya. Out of over 4500 health facilities in the country, the MOH controls and runs about 52% while the private sector, the mission organizations and the ministry of local government run the remaining 48%. The public sector controls about 79% of the health centers, 92% of the sub-health centers and 60% of the dispensaries. The Non-Governmental Organization (NGO) sector is dominant in health clinics, maternity and nursing homes (94%) and medical centers (86%). Both the public and the NGO sector have an almost equal representation of hospitals. There is a deliberate effort by the government to shift towards decentralization of health care provision. The MOH has embarked on developing the legal and regulatory framework and capacity building to devolve the authority for planning and financial management to districts.

The 2003 Demographic and Health Survey, released in 2004, shows that fertility increased over the past five years – a reversal in Kenya's previously successful family planning program. Child mortality rates did not improve significantly. In 1999, 116/1000 children died before the age of five; in 2003, the rate was 114/1000. The nutritional status of children under five has improved only slightly in the past few years. At the national level, 30 percent of children under five are stunted (low height-for-age), while 6 percent of children are wasted (low weight-for-height) and 20 percent are underweight (low weight-for-age). The infant mortality rate was constant between 1999 and 2003 at 77/1000. Maternal mortality remained high, while antenatal care coverage and medical assistance at delivery did not improve. One-quarter of currently married women in Kenya have unmet needs for family planning, unchanged since 1998. Three-fifths of this unmet need is comprised of women who want to wait two or more years before having their next child (spacers), while two-fifths is comprised of women who want no more children (limiters).

Kenya has a severe, generalized HIV epidemic, but in recent years, the country has experienced a notable decline in HIV prevalence, attributed in part to significant behavioral change and increased access to ART. The latest modeling, using demographic health survey and surveillance data, suggests that prevalence among adults 15-49 years old is now estimated at about 6%, down from 10 percent in the late 1990s. Women face considerably higher risk of HIV infection than men, and also experience a shorter life expectancy due to HIV/AIDS. Populations in Kenya especially at risk include injecting drug users and people in prostitution, whose prevalence rates are estimated at 53 percent and 27 percent, respectively. There are about 1,400,000 Kenyans infected with HIV, 140,000 adults who die from AIDS every year, and 1,100,000 AIDS orphans.

Human capacity development is a major concern, and all partners are working to improve capabilities and human resource management systems to enable people to respond effectively to HIV/AIDS and other health issues. Kenya has a large number of qualified, unemployed health care workers. The key to success will be developing effective mechanisms to engage these trained staff. In addition, efforts to employ auxiliary staff, such as adherence counselors and outreach workers, are a high priority. Treatment literacy is very low, which contributes to the high levels of stigma among health workers and the general population. Furthermore, for those who are receiving ART, systematic monitoring and evaluation is lacking.

Kenya's population faces many challenges in accessing quality, affordable health services. In 2004, health expenditures were just over 4% of the gross domestic product, and 8% of the total government budget. The government contributes about 47% of the total health expenditure in the country, compared to 53% from private sources. Further, the negative impact of HIV/AIDS on health care expenditures is a widely recognized problem in Kenya, with as much as 70 percent of in-patient admissions estimated to be HIV positive. Despite increased attention to preventive health, the demands on the health care system in Kenya will grow rapidly in the years ahead.

Locations Affected

Activities under SO3 take place throughout the country. At the national level, activities include health policy, logistics (including commodity procurement), human resources and monitoring and evaluation systems. USAID and its partners are also working nationally on social marketing of products, services and behaviors to improve the health of low income and vulnerable populations, with a focus on use of bed nets, family planning commodities, condoms, health messages, and WaterGuard drinking water disinfectant.

SO3 also covers the entire country under APHIA II with provincial partners working in direct service delivery. The partners work at the facility level to improve access to HIV/AIDS, RH/FP, TB and malaria

services, and at the community level to improve health seeking behaviors and provide HIV/AIDS care and support.

National Environmental and Health Policies and Procedures

Environmental Laws

The Environmental Management and Coordination Act (EMCA) No 8, 1999, provides a legal and institutional framework for the management of the environment, and establishes the National Environment Management Authority (NEMA) as the principal agency of government in all matters of environmental management. In addition, the GOK has established comprehensive sectoral legislation in fisheries, forestry, public health, water, and wildlife.

EMCA underscores the right of every person in Kenya to a clean and healthy environment. Part of NEMA's role is to ensure that the public receives adequate information on aspects of environmental management in Kenya. In 2006, two important regulations that affect the health sector were signed under EMCA; waste management including hazardous waste (<http://www.nema.go.ke/downloads/wastemanagementregulations2006.pdf>), and water quality (<http://www.elaw.org/assets/pdf/ke.WaterQualityReg.pdf>).

Waste Management and Medical Waste

Under the new Waste Management regulation, wastes generated from medical care and/or medical examination in hospitals, clinics, and medical laboratories are classified as hazardous waste, and any institution that generates bio-medical waste must have a valid Environmental Impact Assessment license issued by NEMA. These wastes must be labeled, stored, and burned in incinerators according to specifications outlined in the regulation. Export of hazardous waste requires a valid permit issued by NEMA and a valid Prior Informed Consent document issued by the designated national authority of the receiving country.

The Public Health Act Chapter 242 of the Laws of Kenya and the Environmental Management and Coordination Act, 1999 provide the legal basis for the formulation and implementation of the Kenya Injection Safety and Immunization Waste Management Plan of Action. This covers all major components of the National Strategy for Health Care Waste Management at national, provincial, district, health facility, community and individual level in both the public and the private sector, and is based on guidelines developed by the World Health Organization.

Every injection must be given using a single sterile syringe and needle combination, which is then safely disposed of after use. There are about 2,500 Government, private and NGOs immunization service delivery points (SDPs) in Kenya. These SDPs account for nearly 75% of total number of health facilities, and are fully equipped with the basic Expanded Program on Immunization (EPI) facilities. These immunization centers generate about 12% of all health care waste in Kenya. By 2003, all existing immunization SDPs in Kenya and subsequent new ones should each have a low cost incinerator as part of their EPI establishment infrastructure.

According to GOK policy, all disposable syringes and needles should be disposed of immediately following use in a designated safety box or sharps puncture-proof container. A system for tracking the distribution, utilization and destruction of injection equipment will be introduced including reverse logistics where possible. Additional waste from injections (cap, syringe packaging, cotton wool) should be disposed of appropriately through incineration, burning and/or burying. All used immunization injection equipment should be safely destroyed/removed.

The method of choice for destruction of full safety boxes is incineration, preferably in an appropriate low-cost high-temperature incinerator ($> 800^{\circ}\text{C}$). If such an incinerator is unavailable, a low-temperature incinerator ($300\text{--}400^{\circ}\text{C}$) may be used (limited to area with no surrounding population). Ultimately, full safety boxes may be incinerated in small numbers by open burning (limited to area with no surrounding population). Residue from incineration (oxidized needles, vials, etc.) should be safely removed and properly buried in an appropriate pit. Under no circumstances are used syringes or needles, or safety boxes, to be disposed of in normal garbage or dumped randomly.

In addition, the national policy includes development of curricula for training on injection safety and immunization waste management for existing and new health workers, and training for health facility managers in monitoring and supervision of practices, budgeting and regular oversight. Health workers are expected to inform their clients of the need for injection safety and the consequences of unsafe injections. The Ministry of Health, in partnership with other concerned institutions and ministries (e.g., the Ministry Local Authorities, the Ministry of Environment, the National Environment Management Authority), has the role of advocating for promoting injection safety issues within the country and identifying priority target groups and strategies for dissemination of messages.

Water Resources Management

The Government of Kenya recognizes that accessible potable water will result in poverty alleviation and improved health. The goal of the National Water Resources Management Strategy (NWRMS) is to eradicate poverty through the provision of potable water for human consumption and water for productive uses. The strategy is informed by the Water Act (2002), which is aligned with the Economic Strategy for Wealth and Employment Creation and the Millennium Development Goals. Under the Water Act, the GOK provides an Environmental Impact Assessment Checklist for new water points, and guidance on the development and use of water sources in ways that are economically, socially and environmentally acceptable.

Kenya's Environmental Management and Coordination, (Water Quality) Regulations were finalized in 2006. These Regulations apply to drinking water, and to water used for industrial, agricultural, recreational and other purposes.

For domestic water use, the regulations elaborate on the prevention of water pollution, standards for sources of domestic water; protection of lakes, rivers, streams, springs, wells and other water sources; bans and restrictions on the use of water sources; compliance with water quality standards and water quality monitoring.

For industrial use and effluent discharge, the regulations outline compliance with industrial standards; restrictions on discharges into the general environment, aquatic environments, and public sewers; discharge monitoring standards; and effluent discharge license protocols.

For agricultural use, the regulations define water quality standards and monitoring for the use of water for irrigation; water bodies and environmental management plans; provisions for buffer zone creation for irrigation schemes; and provisions for compliance with these regulations by owners/operators of irrigation schemes.

Pesticides

The two main regulations governing pesticides in Kenya are the 1983 Pest Control Products Act, dealing with import, export, manufacture and distribution of products to control pests, and EMCA 1999. The Pest Control Products Board is a Statutory organization of Kenya Government established under an Act of

parliament, the Pest Control Products Act, Cap 346, Laws of Kenya of 1982 to regulate the importation and exportation, manufacture, distribution and use of pest control products and mitigate potential harmful effects to the environment. Before any pest control product is registered for use in Kenya, the Board considers the product's safety, efficacy, quality and economic value in line with the Pest Control Products Registration Regulations LN 46 and 109 of 1984.

In October 2006, the following regulations were gazetted:

- Pest Control Products (Registration) (Amendment) Regulations – L.No. 123/2006
- Pest Control Products (Licensing of Premises) (Amendment) Regulations, 2006 - L.No. 124/2006
- Pest Control Products (Importation and Exportation) (Amendment) Regulations – L.No. 125/2006
- Pest Control Products (Disposal) Regulations – L.No. 126/2006
- Pest Control Products (Labeling, Advertising and Packaging) (Amendment) Regulations – L.No. 127/2006
- Pest Control Products (Licence Fees and other Charges) Regulations – L.No. 128/2006

National Health Sector Strategic Plan

Kenya's health care delivery systems is organized and implemented at three levels: the MOH headquarters, the provinces and districts. The headquarters sets policies, coordinates the activities of the NGOs and manages, monitors and formulates policy formulation and implementation. The provincial tier oversees the implementation of health policy at the district level, maintains quality standards and coordinates and controls all district health activities. In addition, it monitors and supervises district health management boards which supervise the operation of health activities at the district level. The district level concentrates on the delivery of health care services and generates expenditure plans and budget requirements based on the guidelines from the headquarters through the provinces.

Health Policy Framework

In 1994, the Ministry of Health produced Kenya's Health Policy Framework (KHPF) which is the Government blueprint for future development in the Health sector and the first National Health Sector Strategic Plan (NHSSP, 1991-2004). The strategic plan emphasized decentralization of the health care delivery through redistribution of health services to rural areas. The revised NHSSP II (2005-2010) has been developed to reflect the poverty reduction strategy paper (2001-2004) agenda. The new plan focuses on essential health services based on the burden of disease and the support systems required to deliver these services. Major players in the health sector include government represented by the MOH and local government, private sector and NGOs. The objectives of the plan are to:

- Ensure equitable allocation of government resources to reduce disparities in health services;
- Increase the cost-effectiveness and the cost-efficiency of resource allocation and use;
- Manage population growth;
- Enhance the regulatory role of government in all aspects of health care provision;
- Create an enabling environment for increased private sector and community involvement in service provision and finance; and
- Increase and diversify per capita financial flows to the health sector.

The Ministry of Health has drafted a document called "Taking the Essential Package for Health to the Community" to operationalize the Kenya Essential Package for Health (KEPH) of the NHSSP II. The goal is to enhance community access to health care to improve human productivity and thus reduce poverty, hunger and child and maternal deaths, as well as improve education performance across all stages of the life cycle. Communities are at the core of this strategy, and activities focus on communication aimed at behavior change and access to safe water and basic care.

Initiatives outlined in the KEPH target major priority health and related problems affecting all cohorts of life at the community and household levels. The community strategy focuses on initiation and implementation of life-cycle-focused health actions. Services will be provided by government Community Health Extension Workers (CHEWs) and supported by Community-Owned Resource Persons or health volunteers (CORPS). The minimum kit provided to CORPS volunteers includes preventive materials and supplies. To complement this kit, the GOK has adopted the “Participatory Hygiene and Sanitation Transformation” (PHAST) methodology to empower the participation of all segments of the community in the promotion of improved water use and sanitation behaviors.

SECTION 3: EVALUATION OF PROJECT/PROGRAM ISSUES

In addition to other references noted at the bottom of each section, this document draws heavily on the Environmental Guidelines for Small Scale Activities in Africa (EGSSAA), 2nd Edition, which is USAID/Africa Bureau’s principal source of sector-specific environmental guidance. It can be found on the web at <http://www.encapafrica.org/egssaa.htm>. The Small Scale Guidelines recommend Environmentally Sound Design (ESD) to select the means by which development objectives are achieved. ESD is prevention-based across the project lifecycle, such that the environmental harm associated with a desired development objective is kept to a practicable minimum by considering the environmental impacts associated with each alternative *alongside* technical, economic and social criteria.

USAID’s mission is to create “sustainable development”, and ESD is vital to this outcome. USAID is also required by 22 CFR 216 to apply its environmental procedures to all projects, programs or activities receiving USAID funds. The application of these procedures should be integral to project design and implementation. They are not an afterthought, and compliance with 22 CFR 216 should not be treated as simply an administrative requirement.

The activities of SO3 are numerous and complex. Many SO3 activities do not have direct adverse environmental impacts, as they entail information, education, communication, training, research, community mobilization, planning, management, and outreach activities. However, in the course of implementing these activities, partners should take advantage of opportunities to address environmental health issues (like hazardous and infectious waste management) with their health service delivery programs.

Certain interventions supported by SO3 will directly or indirectly affect the environment, or have the potential to do so. Based on analyses conducted by the SO3 team and by the Mission Environmental Officer, these activities could affect the environment in six ways:

- 1) Through the procurement, storage, management and disposal of public health commodities, including pharmaceutical drugs;
- 2) Generation, storage and disposal of hazardous or highly hazardous medical waste, e.g. blood from Voluntary Counseling and Testing (VCT) centers, by-products from tests of Sexually Transmitted Infections (STI) and HIV, blood from malaria and anemia tests, and laboratory-related activities;
- 3) Small-Scale construction/rehabilitation of health facilities;
- 4) Small-Scale water and sanitation activities;
- 5) Small-Scale agricultural sector activities; and
- 6) Use of pesticides.

Potential impacts of these activities are discussed in detail below. Next, analyses of SO3 activities are presented in Tables 1 and 2 at the end of Section 3, using the categories of activities presented in Section 1.3 of this document. These two tables are used to make environmental determinations (Section 4) and set conditions (Section 5) for the activities of SO3.

Table 1 covers those activities which are not likely to affect the environment, and correspond to activities categorically excluded from initial environmental examination in 22 CFR 216.2(c)(2): (i); (ii); (iii); (v); (viii); (xi); and (xiv). Table 2 presents the same SO3 categories, along with the specific activities that have the potential for affecting the environment under the columns of potential environmental impact.

Procurement, Storage, Management and Disposal of Public Health Commodities

This activity includes procurement of pharmaceutical drugs and vaccines, personal protective gear for application of pesticides or to prevent communicable disease, family planning products including condoms and intrauterine contraceptive devices, medical supplies and basic medical equipment, including insecticide treated bed nets. For this latter commodity, the issue is not the insecticide (pesticides are addressed below), but rather their inappropriate use as fishing gear. The very small mesh size makes these nets quite non-selective in the size of fish that could be captured. Conceivably, their use could be significant detriments to the recovery and sustainable management of fisheries.

Pharmaceutical drugs are chemicals used for diagnosis, treatment (cure/mitigation), alteration, or prevention of disease, health condition, or structure/function of the human body. Pharmaceuticals including vaccines have specific storage time and temperature requirements, and may expire or lose efficacy before they are 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 the lack of a routine system of disposal.

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

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 harm to aquatic life. Exposure risks for aquatic organisms are much larger than those for humans because aquatic organisms have continual (and multi-generational) exposures, relative concentrations are higher and there are possible low-dose effects.

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 of single substances 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 combination effects and chronic studies are needed to assess the environmental risk of 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.

Antibiotics, cancer or autoimmune drugs, and undiluted disinfectants should not be disposed of into the sewage system as they may kill bacteria necessary for the treatment of sewage. 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. This results in release of toxic pollutants to the air. Further, inefficient and insecure sorting and disposal may allow drugs beyond their expiry date to be

diverted for resale to the general public. In some countries scavenging in unprotected, insecure landfills is a hazard.

The other commodities covered under this activity are not associated with major health risks, including packaging material, and should be disposed of as solid waste.

References for this section include:

<http://www.ameliaww.com/fpin/ProductsEnv.htm>

http://www.who.int/water_sanitation_health/medicalwaste/pharmaceuticals/en/

[http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T6D-4HJ47W6-](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T6D-4HJ47W6-1&_user=10&_coverDate=05%2F31%2F2006&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=784d197352a5109a74d5f64faae56c36)

[1&_user=10&_coverDate=05%2F31%2F2006&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=784d197352a5109a74d5f64faae56c36](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T6D-4HJ47W6-1&_user=10&_coverDate=05%2F31%2F2006&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=784d197352a5109a74d5f64faae56c36)

Pharmaceuticals In The Environment: Sources, Fate, Effects And Risks (2nd ed). 2004. Klaus Kümmerer, ed. Online at

<http://books.google.com/books?id=A3GQsHZCmDsC&pg=PA218&lpg=PA218&dq=ecotoxicity+of+antibiotics&source=web&ots=Iqugo6LSRu&sig=4gB287Lo28veyihR8EILGe0F4ac#PPP1,M1>

Generation, Storage and Disposal of Hazardous and Highly Hazardous Medical Waste

Small-Scale healthcare activities, such as rural health posts, immunization posts, reproductive health posts, mobile and emergency healthcare programs, and urban clinics and small hospitals, provide important and often critical healthcare services to individuals and communities that would otherwise have little or no access to such services. They are the front line of defense against epidemics such as AIDS, malaria, and cholera and a key component of any comprehensive development program. The medical and health services they provide improve family planning, nurture child and adult health, prevent disease, cure debilitating illnesses, and alleviate the suffering of the dying.

However, improper handling, storage and disposal of the waste generated in these 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 by being inhaled, swallowed, or transmitted by a vector.

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.

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 wastes 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 in a trash receptacle. 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 wastes, 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.

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. However, 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. Healthcare workers, waste handlers, waste-pickers, drug addicts and others who handle sharps have become infected with HIV/AIDS and hepatitis B and C viruses through pricks or reuse of syringes/needles.

Contamination of water supply from untreated healthcare waste can also have devastating effects. If infectious stools or bodily fluids are not treated prior to disposal, they can create and extend epidemics, since there is very little sewage treatment in Kenya. The absence of proper treatment facilities is believed to have increased the severity and size of cholera epidemics in Africa during the last decade.

Treatment and disposal methods for hazardous and highly hazardous waste may be classified into three categories: thermal processes, chemical processes, and containment processes, or a combination of these methods. The Government of Kenya specifies that hazardous waste must be treated using approved incinerators, or other technologies approved by NEMA.

<http://www.nema.go.ke/downloads/wastemanagementregulations2006.pdf>

References for this section include:

http://www.who.int/water_sanitation_health/medicalwaste/167to180.pdf

<http://www.bchealthguide.org/healthfiles/hfile29.stm>

Small-Scale Construction/Rehabilitation of Health Facilities

As with water and sanitation construction activities, some potential environmental impacts are possible with these interventions, and will depend on the local circumstances, 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 (oil, coolant), and diesel fuel)
- Adverse social impacts due to displacement of local inhabitants, influx of outside workers, inequitable distribution of economic benefits of construction, etc.
- Spread of disease through migration of construction workers from other regions or construction of a new road, especially sexually transmitted diseases such as HIV/AIDS
- 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)
- Use of toxic materials during construction

Reference for this section is: Environmental Guidelines for Small-Scale Activities in Africa
<http://www.encapafrica.org/egssaa.htm>

Small-Scale Water and Sanitation Activities

Some potential environmental impacts are possible with these interventions, and will depend on local circumstances, including:

Water Supply

- Improper siting of facilities that damages or destroys natural ecosystems (within wetlands, protected areas, or other sensitive habitats, etc.)
- Depletion or degradation of local or downstream freshwater resources (surface and groundwater)
- Creation of stagnant (standing) water near water points that could create breeding opportunities for water-borne disease vectors
- Natural or human-caused biological or chemical contamination of water sources (surface and groundwater) increasing human health risks; and
- Poor management of water points and/or poor design and maintenance of water delivery infrastructure leading to leakage and contamination of water with fecal matter, solid waste, etc.

Sanitation

- Increased human health risks from contamination of surface water, groundwater, soil, and food by human waste and disease pathogens
- Degradation of surface and groundwater quality and land habitats due to inappropriate siting or construction of latrines or wastewater collection systems, or release of human waste from sanitation facilities
- Defecation around locked or unusable latrines or other sanitation facilities, potentially contaminating surface water and/or shallow groundwater sources, adversely affecting both human and ecosystem health
- Damage to the aesthetics of the sanitation facility site (visual, smell, etc.)

Reference for this section is: Environmental Guidelines for Small-Scale Activities in Africa
<http://www.encapafrica.org/egssaa.htm>

Agricultural Sector Activities

Some HIV/AIDS activities for palliative care for orphans and vulnerable children may include small-scale agriculture, poultry, livestock and/or fisheries production that can adversely affect a variety of

ecosystems. These impacts may come from expanding the area used for crop or livestock production or from using environmentally unsound practices on existing farms. The most common problems associated with small-scale activities include:

- **Cropland degradation.** Cropland degradation—a decrease in the ability of suitable land to support agricultural production—has two primary elements: soil erosion and loss of soil fertility. As land degradation becomes more severe, farmers often have few options other than to look for another piece of land on which they can earn a livelihood. Expansion onto marginal land is closely linked to a lack of productive potential on existing land.

Soil erosion. Unsustainable practices; *e.g.*, poorly managed open-furrow agriculture, crops grown in the wrong way or place, deforestation, or draining wetlands; can all cause soil erosion. As soil erodes, less rainfall is absorbed and the excess runs off. This runoff removes the fertile topsoil necessary for crop production and can have disastrous off-site consequences, including gully formation, landslides, siltation and sedimentation of water bodies, downstream flooding and damage to productive infrastructure. In sub-Saharan Africa, particularly in arid and semiarid areas, wind can also erode soil.

Reduction of soil fertility. Soil fertility is dependent on three major nutrients (nitrogen, phosphorous and potassium), various trace elements, and organic matter content. A productive soil contains sufficient quantities of each of these nutrients. These elements can be removed by repeated cropping without fertilization, rainfall leaching, lack of a restorative fallow, and removal or burning of crop residues, either alone or in combination. The subsequent decline in soil fertility often occurs in conjunction with soil erosion, with each problem exacerbating the other.

- **Degradation of marginal lands** due to population pressure, lack of access to land or social equity issues. Expansion of agricultural activities onto these suboptimal lands not only causes further degradation, but also displaces previous land uses (firewood gathering, livestock grazing, hunting, medicinal plant gathering, etc.).
- **Deforestation.** Natural forests are often degraded by encroachment, by excessive or uncontrolled harvesting, by roads dividing them into smaller blocks, or by being cleared for charcoal, crop and livestock production.
- **Desertification.** This process includes deterioration of vegetative cover due to overgrazing, wood cutting, and burning; wind and water erosion resulting from improper land management; and salinization due to improper use of irrigation water. This results in a loss of soil depth and fertility, reduced regeneration and a progressive transformation of the initial ecosystem to a less productive system, culminating in barren desert.
- **Drainage and degradation of wetlands and riparian areas.** Wetlands provide a number of environmental services, including recharging groundwater supplies, acting as natural water-treatment plants, and providing habitats for vulnerable and endangered species. However, wetlands and their edges are often used for agriculture, either in the dry season or after draining. The soils are often fertile at first, and water is available for irrigation. Unfortunately, as wetlands are drained for agriculture or development, the landscape loses its capacity to absorb and control runoff, increasing the potential for downstream flooding.
- **Reduction in water quality.** Incorrectly applied agrochemicals, fertilizers or manures can migrate from a farmer's field to local water sources, causing environmental harm and adversely affecting human health and activities. Animal manures transported from fields into water bodies through rainfall, runoff or irrigation can pollute local drinking water sources and spread human and animal diseases. Nutrients from manures/fertilizers can also cause nutrient loading in local water bodies,

resulting in degraded water quality, reduced wildlife, fish and mollusk populations, and toxic algal blooms. Moreover, such reductions in water quality can impact other uses of water bodies as well, such as drinking water, sanitation, fishing, aquaculture, recreation and tourism, and other farms.

Reference for this section is: Environmental Guidelines for Small-Scale Activities in Africa

<http://www.encapfrica.org/egssaa.htm>

Use of Pesticides

Use of any pesticide is of major concern because of the potential for both health and/or environmental effects. Pesticides can cause short-term adverse health effects, called acute effects, as well as chronic adverse effects that can occur months or years after exposure. Examples of acute health effects include stinging eyes, rashes, blisters, blindness, nausea, dizziness, diarrhea and death. Examples of known chronic effects are cancers, birth defects, reproductive harm, neurological and developmental toxicity, immunotoxicity, infertility and other reproductive problems; disruption of the endocrine system, and damage to the liver, kidneys, lungs and other organs. Chronic effects may not appear for weeks, months or even years after exposure, making it difficult to link health impacts to pesticides.

Some people are more vulnerable than others to pesticide impacts. For example, infants and young children are known to be more susceptible than adults to the toxic effects of pesticides. Exposure during certain early development periods can cause permanent damage. Children are more vulnerable because their organs, nervous systems and immune systems are still developing, and they have higher rates of cell division and lower body weight than adults. In addition to being more vulnerable to pesticide toxicity, children's behavior and physiology make them more likely to receive greater pesticide exposure than adults. Most pesticide exposure occurs through the skin, and children have more skin surface for their size than adults. Children have a higher respiratory rate and so inhale airborne pesticides at a faster rate than adults. Children also consume proportionately more food and water -- and pesticide residues -- than adults. With their increased contact with floors, lawns and playgrounds, children's behavior also increases their exposure to pesticides.

People with asthma may have very severe reactions to some pesticides, particularly pyrethrin/pyrethroid, organophosphate and carbamate pesticides. Farm workers and pesticide applicators are also more vulnerable because they receive greater exposures, sometimes due to inadequate protective equipment or training. In many cases, symptoms of pesticide poisoning mimic symptoms of colds or the flu. Since pesticide-related illnesses appear similar or identical to other illnesses, pesticide poisonings are often misdiagnosed and under-reported. Immediate symptoms may not be severe enough to prompt an individual to seek medical attention, or a doctor might not even think to ask about pesticide exposure.

The persistence of a pesticide in the environment is determined by a number of factors including (1) the amount introduced and how it is distributed; (2) its reactivity in the environmental media; and (3) the conditions of the media. These factors help determine the concentration of pesticide in the air, soil, water, plants, and animals. Pesticides applied to enclosed areas, such as greenhouse spaces, and public and private buildings, usually break down at a slower rate than those applied outdoors.

Over time, the pesticides may (1) break down, (2) be redistributed around the application site or (3) move off site. Off site movement includes movement to groundwater, surface water, or the atmosphere, and also includes residues that remain on crops or livestock when they are removed from the site.

All pesticides react in the environment to form new chemicals but the rate at which they react and the products formed during breakdown are important. In addition to chemical reactions, all pesticides are subject to breakdown in the presence of sunlight.

The environmental media determines how fast pesticides break down. In the atmosphere, most pesticides breakdown rapidly by reaction with oxygen or free radicals, catalyzed by sunlight, or by directly absorbing sunlight. Pesticides that persist can travel long distances in the atmosphere.

In water, breakdown is usually by hydrolysis, often mediated by pH, and breakdown by microorganisms. The predominant pathway in soil is microbial degradation, but chemical degradation and plant metabolism are also important.

In distribution of long-lasting insecticide-treated bed nets, the environmental impact potential is expected to be exceedingly small. Risks presented by the use of pre-treated nets include the following: 1) potential adverse impacts on aquatic organisms if large numbers of nets (100+) are washed in a river, stream or pond at the same time; 2) the small potential for adverse health effects in net users. Regarding the latter, the only impact expected to periodically occur is skin irritation among some users when the net is new, an effect that subsides rapidly and causes no long-lasting harm. Both types of risks are very small, and were found in the Global Health Programmatic Environmental Assessment to be greatly outweighed by the malaria prevention benefits stemming from the use of insecticide-treated materials.

References for this section include:

<http://www.pesticidereform.org/article.php?list=type&type=38>

<http://www.pesticidereform.org/article.php?list=type&type=37>

extoxnet.orst.edu/faqs/pesticide/pestfate.htm

SO3 category from Section 1.3	3.1 Investing in People: Health Program Element or Description of Activity	Table 1: SO3 Activities Not Likely To Have An Adverse Effect On The Environment (activities covered by the following citations in Reg. 216, by subparagraph of 22 CFR 216.2(c) (2): (i); (ii); (iii); (v); (viii); (xi); (xiv) except to the extent the activities directly affect the environment) SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health
1	3.1.1 HIV/AIDS	Education, Technical Assistance, or Training
2	3.1.2 TB	Encourage the development and adoption of curricula promoting healthy behaviors in local schools/communities, and build the capacity of teachers and health promoters to implement health and hygiene behavior change programs
3	3.1.3 Malaria	Develop or strengthen capacity of the community to adopt improved health and hygiene behaviors for disease prevention
4.	Avian Influenza	Provide information, education and communication (IEC), including household and community mobilization, to support health and hygiene sector issues including IRS
5	3.1.8 Water Supply and Sanitation	Provide IEC aimed to support appropriate health seeking behavior and increasing early and effective treatment of a wide range of health issues, including communicable diseases and reproductive health
6	Health Service Delivery - 3.1.6 Maternal and Child Health 3.1.7 Family Planning and Reproductive Health	Provide IEC aimed to support treatment adherence Provide technical assistance and training for human resources development and supply chain management Analysis, Studies, Academic or Research Workshops and Meetings Conduct participatory needs assessments for health and hygiene services (including household surveys, focus groups, community mapping, and other methods) Carry out applied research on topics relevant to epidemiology and health service delivery, engaging and strengthening local research capacity when possible Gather, process, manage, and evaluate data of all kinds related to health systems and health service delivery Monitor and evaluate project progress and impacts Document and Information Transfers Conduct media campaigns to raise awareness about health issues Develop and/or distribute educational materials on relevant health sector topics
7	Health commodities procurement and supply chain management	Establish community score card systems for health or the status and condition of water supply and sanitation infrastructure Develop and disseminate lessons learned and best practices for a range of health sector issues Programs involving health care or family planning services except where directly affecting the environment Establish and/or build capacity of health committees, community-based organizations, community health volunteers, and/or local government officials associated with health services delivery
8	Health Communications and Marketing	Facilitate or establish sustainable financing mechanisms related to health (e.g., innovative credit or other financing arrangements) Provide sound and credible information in a usable form for decision making, planning, and management, including documents and

SO3 category from Section 1.3	3.1 Investing in People: Health Program Element or Description of Activity	Table 1: SO3 Activities Not Likely To Have An Adverse Effect On The Environment (activities covered by the following citations in Reg. 216, by subparagraph of 22 CFR 216.2(c) (2): (i); (ii); (iii); (v); (viii); (xi); (xiv) except to the extent the activities directly affect the environment) SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health
9	Health Sector Reform/Policy/ Strategic Information and Operations Research	maps Facilitate the active and positive engagement of the private sector in health services delivery Studies, projects or programs intended to develop the capability of recipient countries and organizations to engage in development planning Facilitate participatory sustainable health services planning efforts with the involvement of all stakeholders Facilitate and provide technical assistance for the development plans for health care service delivery, including supply chain management Develop or strengthen the capacity of governments, NGOs, academic institutions, etc. to collect, process and manage health or other relevant information for sound decision-making about health and hygiene service delivery Carry out advocacy campaigns for policy reform related to health or hygiene issues Provide input and information to improve legal and regulatory frameworks related to health and hygiene

Table 2: SO3 Activities with Potential Negative Environmental Impacts
SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

SO3 category from section 1.3	3.1 Investing in People: Health Program Element or Description of Activity	Procurement, Storage, Management and Disposal of Public Health Commodities	Generation, Storage and Disposal of hazardous and highly hazardous medical waste (as defined in Section 3 of this IEE)	Small Scale Construction	Water and Sanitation Infrastructure	Small-Scale Agricultural Activities	Use of Pesticides
1	3.1.1 HIV/AIDS prevention, care and treatment	ARVs Nutritional supplements Condoms	Sharps Hazardous and highly hazardous medical waste	Construct or rehabilitate hospitals, clinics, labs, VCT or training centers Construct or rehabilitate incinerators at health facilities	Construct or rehabilitate handwashing stations, laundry facilities, public showers, latrines, and wastewater and drainage at health facilities or training centers Construct or rehabilitate surface or groundwater supply systems (including water storage tanks and rainwater collection systems) at health facilities or training centers	Agriculture, poultry livestock or farm- forestry production for income generation or for nutrition programs for palliative care of OVC	Termite control in construction or rehabilitation of facilities
2	3.1.2 TB	TB drugs	Hazardous and highly hazardous medical waste	Rehabilitate hospitals, clinics, labs, VCT or training centers Construct or rehabilitate incinerators at			Termite control in construction or rehabilitation of facilities

Table 2: SO3 Activities with Potential Negative Environmental Impacts
SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

SO3 category from section 1.3	3.1 Investing in People: Health Program Element or Description of Activity	Procurement, Storage, Management and Disposal of Public Health Commodities	Generation, Storage and Disposal of hazardous and highly hazardous medical waste (as defined in Section 3 of this IEE)	Small Scale Construction	Water and Sanitation Infrastructure	Small-Scale Agricultural Activities	Use of Pesticides
			health facilities				
3	3.1.3 Malaria	Antimalarial drugs; insecticide treated bed nets	Sharps and lancets for malaria testing Hazardous and highly hazardous medical waste Storage and disposal of pesticide packaging Storage and disposal of Personal Protective Equipment (PPE)				Indoor residual spraying Long-lasting insecticide treated bed nets
4	3.1.4 Avian Influenza			Lab construction or rehabilitation			
5.	3.1.8 Water Supply and Sanitation	Production of dilute chlorine bleach solution for water disinfection (WaterGuard)					Pesticides for termite control in wat/san facilities
6	Health Service Delivery	Nutritional supplements	Hazardous and highly hazardous				

Table 2: SO3 Activities with Potential Negative Environmental Impacts
SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

SO3 category from section 1.3	3.1 Investing in People: Health Program Element or Description of Activity	Procurement, Storage, Management and Disposal of Public Health Commodities	Generation, Storage and Disposal of hazardous and highly hazardous medical waste (as defined in Section 3 of this IEE)	Small Scale Construction	Water and Sanitation Infrastructure	Small-Scale Agricultural Activities	Use of Pesticides
	3.1.6 Maternal and Child Health	Contraceptives	medical waste				
	3.1.7 Family Planning and Reproductive Health	Condoms	Packing materials for products				

SECTION 4: RECOMMENDED DETERMINATIONS

Based on the analyses presented in Section 3, this IEE recommends threshold determinations for activities implemented under USAID/Kenya's SO3. USAID/Kenya acknowledges that the environmental screening and review procedures described here do not substitute for the Government of Kenya's environmental laws and policies.

This IEE has three threshold determinations for SO3 – **Categorical Exclusion, Negative Determination with Conditions and Deferrals**. For **Categorical Exclusion** and **Negative Determination with Conditions** there are overarching guidelines that must be applied to all SO3 activities. These are elaborated in Table 3, below:

Table 3: Guidelines that apply to all SO3 activities	
SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health	
1	USAID/Kenya's SO3 bi-lateral implementing partners will complete annual environmental monitoring reports of all activities, using the guidance and forms in Section 6. This monitoring and reporting will be incorporated into annual work plans. The reports will be submitted to SO3 CTOs in October, so results can be incorporated into the SO's annual environmental compliance report.
2	Any grants or fund transfers from organizations receiving USAID/Kenya funds to other organizations (<i>i.e.</i> , sub-grants) must incorporate provisions stipulating: a) the completion of an annual environmental monitoring report, and b) that activities to be undertaken will be within the scope of the environmental determinations and recommendations of this IEE.
3	USAID/Kenya SO3 CTOs will undertake field visits and consultations with implementing partners to jointly assess the environmental impacts of ongoing activities, and the effectiveness of associated mitigation and monitoring measures.
4	USAID/Kenya will ensure that implementing organizations have sufficient capacity to complete the environmental screening process and to implement monitoring and mitigation measures. Implementing partners should seek training as needed, such as participation in Africa Bureau's environmental compliance training courses. Some on-line resources for capacity building can be found at http://www.encapafrika.org/index.htm It is USAID policy to strengthen host countries' capabilities to appreciate and effectively evaluate the potential environmental effects of proposed development strategies and projects, and to select, implement and manage effective environmental review and mitigation programs.
5	For activities that are not funded by USAID/Kenya, but are an identifiable part of an SO3 activity (<i>e.g.</i> , if another source of funding is supporting agricultural activities at an HIV/AIDS site under an APHIA award), SO3 CTOs will ensure that implementing partners, at a minimum, perform environmental reviews and if necessary take mitigation measures equivalent to the standards stipulated in this IEE.
6	All activities will adhere to applicable GOK environmental laws and policies

I. Categorical Exclusions

The following activities, shown in Section 3- Table 1 of this document are **categorically excluded** from initial environmental examination as no environmental impacts are expected as a result of their implementation. The following citations under 22 CFR 216, sub-paragraph 2(c)(2) apply:

- (i) Activities involving education, technical assistance or training except to the extent such programs include activities directly affecting the environment (such as construction of facilities, etc.);
- (ii) Activities involving controlled experimentation exclusively for the purpose of research and field evaluation and carefully monitored;
- (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 and organizations to engage in development planning.

Such **categorically excluded** activities carry the stipulation that if any topic associated with them is one that inherently affects the environment, such as training in HIV/AIDS testing that involves use and disposal of medical waste, or training related to malaria prevention then such topics will include information on how to minimize and/or mitigate these impacts. Examples include: i) instruction on safe disposal of sharps and biological samples generated from HIV/AIDS testing, ii) training in proper household behaviors to minimize exposure during indoor residual spraying campaigns or iii) training in the proper use of insecticide-treated materials like bed nets.

II. Negative Determination with Conditions

The following activities, presented in Section 3-Table 2 of this document, have potential for negative impact on the environment, and pursuant to 22 CFR216.3(a)(2)(iii), a **Negative Determination with Conditions** is recommended for them: a. Procurement, storage, management and disposal of public health commodities, including pharmaceutical drugs and bed nets;

- b. Generation, storage and disposal of hazardous or highly hazardous medical waste; *e.g.*, blood testing in VCT centers, STI/HIV testing, blood for malaria and anemia, and laboratory-related activities;
- c. Small-Scale construction/rehabilitation of health facilities;
- d. Small-Scale water and sanitation activities;
- e. Small-Scale agricultural sector activities; and
- f. Use of pesticides (*i.e.*, certain pre-approved, long-lasting insecticide treated nets (LLITNs) where no further treatment or re-treatment is necessary).

III. Deferral of Threshold Determination

A **deferral of a threshold determination**, per 22 CFR 216.3(a)(7)(iii), is recommended for the proposed **Integrated Vector Management (IVM)** program for malaria prevention and control pending clearer identification of the activities to be undertaken. USAID/Kenya, prior to implementing activities in this area, will amend this IEE to provide the required analyses under 22 CFR 216.3(b)(1) concerning pesticides, drawing on the existing Programmatic Environmental Assessment (PEA) for Integrated Vector Management (IVM). An amended IEE and, if applicable, a Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) must be submitted to the Bureau Environmental Officer for concurrence to allow the activities to proceed in compliance with 22 CFR 216. The activities involved may not proceed until this IEE is amended to remove the deferral, once the appropriate environmental review has occurred.

It should be noted that the Africa Bureau's *PEA for Insecticide-treated Materials in USAID Activities in Sub-Saharan Africa*, (http://www.afr-sd.org/documents/iee/docs/32AFR2_ITM_PEA.doc) indicates that World Health Organization-recommended brands of LLITNs rather than nets requiring re-treatment are the most effective risk mitigation measure available. So long as SO3 restricts its product choice to these LLITNs, further mitigation measures are not needed.

SECTION 5: MITIGATION ACTIONS AND CONDITIONS

The threshold determinations indicated above have been made with the explicit commitment and understanding that all the conditions associated with the determinations constitute binding requirements. These conditions will be implemented in full for all activities implemented through USAID/Kenya's Health Portfolio. In addition to these conditions, there are certain conditions required to address specific environmental threats during implementation of SO3 activities, as identified in the analysis in Section 3. These conditions are described in Table 4. If additional activities are added to the USAID/Kenya SO3 portfolio that are not described in this document, a supplemental Environmental Screening Form (Annex 2) and, if necessary, an amendment to this IEE must be prepared that describes required mitigation activities. Beyond these standard mitigation requirements, additional measures may also be stipulated during the course of the environmental monitoring process for individual activities. These additional measures will be considered binding and are expected to be implemented in full.

TABLE 4: CONDITIONS FOR IMPLEMENTATION OF CATEGORIES OF SO3 ACTIVITIES

SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

Key Elements of Program/Activities	Mitigation Conditions and/or Proactive Interventions
Activities that involve: Procurement, storage, management and disposal of public health commodities	Conditions: Consignees for all pharmaceutical drugs procured under this funding will be advised to store products 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 active ingredients and MSDS as search terms. If disposal of these pharmaceutical drugs is required, due to expiration date or other reasons, the consignee will be advised that the preferred method of disposal is to return the product(s) to the manufacturer. If this is not possible (e.g., if the expired or spoiled pharmaceuticals are considered hazardous and, if transferred across frontiers, become regulated and subject to the Basel Convention on the trans-frontier shipment of hazardous wastes) then follow the guidelines in the WHO document <i>Guidelines for Safe Disposal of Unwanted Pharmaceuticals During and After Emergencies</i>, found at www.who.int/water_sanitation_health/medicalwaste/unwantpharm.pdf. At the request of the Mission, subject to available funding, implementing partners will make reasonable attempts to facilitate the disposal of expired drugs under this activity to mitigate the impact of medical waste. Another public health commodity of concern is bed nets. Here the issue is the inappropriate use of bed nets as fishing gear (their treatment with insecticide is addressed later). Generally, the geographic areas where bed nets are likely to be employed also contain water bodies such as lakes, rivers and streams; i.e., areas where mosquitoes are likely to be found. Of course, such water bodies support fish stocks and other aquatic life that are key components of biodiversity and may be critical to rural livelihoods in such locales. Used bed nets could pose threats to the sustainability of fisheries because their small mesh size makes them rather 'non-selective' devices when used to harvest fish. They could negatively impact the abundance and distribution of juvenile fish, small fish species and the aquatic insects upon which fisheries and aquatic biodiversity depend. Implementing partners will work with GOK on all aspects of essential pharmaceutical supply chain management, including estimating demand, distribution, and storage issues of time and temperature. 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

TABLE 4: CONDITIONS FOR IMPLEMENTATION OF CATEGORIES OF SO3 ACTIVITIES

SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

Key Elements of Program/Activities	Mitigation Conditions and/or Proactive Interventions
	medical waste” Packaging and disposal of other public health commodities will be treated using the guidelines provided in Environmental Guidelines for Small-Scale Activities in Africa (EGSSAA) 2nd Edition, Chapter 15: Solid Waste (http://www.encapafrika.org/EGSSAA/Word_English/solidwaste.doc). The other EGSSAA chapter to consult is Chapter 6: Fisheries (http://www.encapafrika.org/EGSSAA/Word_English/fisheries.doc).
Activities that involve: Generation, storage, handling and disposal of hazardous and highly hazardous medical waste (as defined in Section 3 of this IEE)	Conditions: For all USAID-supported activities entailing service delivery, including blood testing and laboratory support, USAID/Kenya’s SO3 will work with its implementing partners to assure, to a reasonable extent possible, 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. SO3 CTOs and activity managers will ensure implementing partners complete on an annual basis the “<i>Healthcare Waste Management Minimum Program Checklist and Action Plan</i>” (see Annex 1 of this IEE) for all facilities where implementing partners are directly providing services. See EGSSAA Chapter 8, “Healthcare Waste: Generation, Handling, Treatment and Disposal” (http://www.encapafrika.org/EGSSAA/Word_English/medwaste.doc) for additional guidance on proper handling and disposal of medical waste. 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/ and the GOK’s regulations on disposal of medical waste, including the 2006 regulations on waste management, http://www.nema.go.ke/downloads/wastemanagementregulations2006.pdf and on immunization safety http://gavistg3.elca-services.com/resources/KenyaInjectionSafetyPlan.doc
Activities that involve: Small-Scale construction or rehabilitation of hospitals, clinics, laboratories, VCT or	Conditions: 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, and no protected or other sensitive environmental areas could be affected, the condition is that these activities shall be conducted following principles for environmentally sound construction, as provided in the Small

TABLE 4: CONDITIONS FOR IMPLEMENTATION OF CATEGORIES OF SO3 ACTIVITIES

SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

Key Elements of Program/Activities	Mitigation Conditions and/or Proactive Interventions
training centers	Scale Construction chapter of the USAID Environmental Guidelines for Small-Scale Activities in Africa (http://www.encapafrika.org/EGSSAA/Word_English/construction.doc) For the construction of any facilities in which the total surface area disturbed exceeds 10,000 square feet (1,000 square meters), the program shall conduct a supplemental environmental review according to guidance in <u>Annex G</u> (www.encapafrika.org/EPTM/AnnexG_EPTM_Mar2005b.pdf) of the Africa Bureau <u>Environmental Procedures Training Manual (EPTM)</u> (http://www.encapafrika.org/eptm.htm). Construction will not begin until such a review is completed and approved by the Mission Environmental Officer. An illustrative list of environmentally sound construction principles includes: • The majority of materials used will be of local origin and will not contain any hazardous materials (e.g., asbestos or lead). • Investigate and use less toxic alternative products. • Excess construction material will be recycled wherever possible and disposal of unusable material will be done in an environmentally sound manner. • Construction will not require the use of 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). • No lead-based paint will be used. When (lead-free) paint is used, it will be stored properly so as to avoid accidental spills or consumption by children; empty cans will be disposed of in a 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. If the facility construction or rehabilitation includes water supply and/or sanitation, the conditions in the “Small Scale Water and Sanitation” section also applies to this project. If construction or rehabilitation requires use of fungicides or pesticides for termite control or any other reason, see also “Use of Pesticides” section below.
Activities that involve:	

TABLE 4: CONDITIONS FOR IMPLEMENTATION OF CATEGORIES OF SO3 ACTIVITIES

SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

Key Elements of Program/Activities	Mitigation Conditions and/or Proactive Interventions
Small-Scale Water and Sanitation	Conditions: All water supply and sanitation activities should be conducted in a manner consistent with the good design and implementation practices described in Environmental Guidelines for Small Scale Activities in Africa, Chapter 16: Water Supply and Sanitation. (http://www.encapafrica.org/EGSSAA/Word_English/watsan.doc). For example, i) microbiological contamination of improved wells can often be prevented by aquifer protection measures and proper well design and maintenance; or ii) separate wells should be used for human consumption and animal watering, or an overflow trough should be constructed well away from the protected water source. Another useful reference to consult for good water and sanitation design and implementation principles is the document, "Guidelines for the Development of Small Scale Rural Water Supply and Sanitation Projects in Ethiopia," by Catholic Relief Services and USAID, July 31, 2003 (crs.org/publications/pdf/Wat0604_e/pdf). For a compendium of humanitarian assistance expertise in 1) Hygiene Promotion, 2) Water Supply, 3) Excreta Disposal, 4) Vector Control, 5) Solid Waste Management and 6) Drainage, consult <u>the Sphere Handbook (2004): Humanitarian Charter and Minimum Standards in Disaster Response, Chapter 2: Minimum Standards in Water Supply, Sanitation and Hygiene Promotion</u> (http://www.sphereproject.org/content/view/38/84/lang.English/). Water quality testing is essential for determining that the water from a constructed water source is safe to drink and to determine a baseline so that any future degradation can be detected. Among the water quality tests which must be performed are tests for the presence of arsenic, nitrates, nitrites, and coliform bacteria. Any USAID-supported activity engaged in the provision of potable water must adhere to Guidance Cable State 98 108651, which requires arsenic testing, and guidance is provided by USAID's Economic Growth, Agriculture and Trade Bureau in the document "Guidelines for Determining the Arsenic Content of Ground Water in USAID-Sponsored Well Programs in Sub-Saharan Africa" (www.usaid.gov/our_work/environment/compliance/ane/tool_shed/arsenic_guidelines.doc). Simple and cost-effective sample kits for <i>E. coli</i> and fecal coliforms are available through a variety of manufacturers (e.g., 3M Petrifilm, Idexx Colilert or Coliscan Easygel). The water quality testing requirements of the GOK are found at http://www.elaw.org/assets/pdf/ke.WaterQualityReg.pdf SO3 CTOs and activity managers are responsible for ensuring that initial water quality testing is carried out, and, when feasible, that capacities and plans have been developed to provide reasonable assurance that water quality monitoring occurs. The standards for initial and ongoing testing; i.e., standards that describe the types of contaminants for which testing should be conducted, testing methods, testing frequency, and issues such as public access to results; should follow applicable USAID guidance, as well as GOK laws, regulations and policies. Furthermore, a response protocol should be

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SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

Key Elements of Program/Activities	Mitigation Conditions and/or Proactive Interventions
	established in the event that water quality testing detects contamination. An illustrative list of environmentally sound principles for water and sanitation activities includes: • Community mobilization to ensure sustainability of physical infrastructure • Water sources should be located upgrade from potential sources of pollution, including latrines or toilets. • Water sources are protected from both human and animal contamination. • Ensure latrines are sited far away from shallow wells, cisterns, spring sources and boreholes. Latrine pits will be dug in the unsaturated zone above the water table, and latrine pits are protected against flooding and overflow due to intense rainfall. Establish and train community water and sanitation committees to manage, repair and maintain water points and the watersheds immediately surrounding the water points, including watering of livestock, and to provide hygiene education to participating communities. • Provide training in sanitation and hygiene for health workers, community health and water committees, community area based development groups, and/or municipal water board members. • Ensure community mobilization and public awareness of human health risks associated with water-borne disease vectors. • Relevant local community rules and best practices and procedures of promotion of better environmental health are developed and adhered to. Verification through site visits and photos should be done to assure practices are in accordance with local community rules and “best practices” through community monitoring tools and municipal water board’s evaluation system. • Take measures to minimize standing water. • 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 or pose threats for transmittal of infectious diseases. • Provision of potable water supplies and/or latrines will follow GOK or WHO standards concerning the appropriate separation of wells and latrines and measures to avoid contamination of water sources.
Activities that involve: Small-Scale agricultural activities, including but not	Conditions: Implementing partners and USAID/Kenya’s SO3 team must ensure that activities that involve agricultural production are designed and implemented according to sound environmental management principles, as described in the applicable EGSSAA chapter(s).

TABLE 4: CONDITIONS FOR IMPLEMENTATION OF CATEGORIES OF SO3 ACTIVITIES

SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

Key Elements of Program/Activities	Mitigation Conditions and/or Proactive Interventions
limited to small crop production, drip irrigation, aquaculture, horticulture, poultry and small livestock, and dairy production	Chapter 1: Agriculture: Soil and Water Resources, Including Irrigation. (http://www.encapafrika.org/EGSSAA/Word_English/agriculture.doc) Chapter 11: Livestock Production (http://www.encapafrika.org/EGSSAA/Word_English/livestock.doc) Chapter 12: Pest Management I: Integrated Pest Management (http://www.encapafrika.org/EGSSAA/Word_English/ipm.doc) This IEE does not cover use of genetically modified organisms (GMOs), including limited use, research and testing, and such use is not authorized without the amendment of this IEE. Should such use be contemplated in any program element, a biosafety review will be conducted as per ADS 201.3.12.2(b) to provide a threshold determination about the proposed GMO use. If any of these activities involves the use of pesticides, the section on "Use of Pesticides" below also applies - http://www.encapafrika.org/EGSSAA/Word_English/saferpesticides.doc
Activities that involve: The use of pesticides Note: USAID uses the USEPA's definition of pesticides, which includes "any substance intended for: preventing, destroying, repelling, or mitigating any pest. This includes herbicides, fungicides, plant regulators, and dessicants".	Conditions: Use of Long-lasting Insecticide Treated Bed nets (LLITN) The Africa Bureau's <i>Programmatic Environmental Assessment for Insecticide-treated Materials (PEA ITM) in USAID Activities in Sub-Saharan Africa</i>, (http://www.afr-sd.org/documents/iee/docs/32AFR2_ITM_PEA.doc) describes the risks associated with the use of ITMs, including bed nets and curtains. Health and environmental risks from the use of ITMs include potential exposure of humans and the environment during production, distribution, storage, use, and disposal of pesticides, and a certain amount of exposure of persons using ITMs to pesticide vapors released from the materials. Use of bed nets for other purposes like fishing has also been reported. As described in the PEA ITM, The World Health Organization-recommended brands of LLITNs rather than nets requiring re-treatment are the most effective risk mitigation measure available. So long as SO3 restricts its product choice to these LLITNs, further mitigation measures are not needed. If a need for net treatment or re-treatment arises under this funding, USAID/Kenya SO3 Health Team will draft and gain approval for a "Pesticide Evaluation Report and Safer Use Action Plan" (PERSUAP) for the pesticides proposed for the re-treatment program.

TABLE 4: CONDITIONS FOR IMPLEMENTATION OF CATEGORIES OF SO3 ACTIVITIES

SO 3: Reduced Transmission and Impact of HIV/AIDS and Improved Reproductive, Maternal and Child Health

Key Elements of Program/Activities	Mitigation Conditions and/or Proactive Interventions
	Additional resources on effective and safe use of insecticides in malaria programs can be found on WHO's Roll Back Malaria site (See http://mosquito.who.int, multiple prevention, insecticide-treated materials), and EGSSA Chapter 13 on safer pesticide use http://www.encapafrika.org/EGSSAA/Word_English/saferpesticides.doc. An excellent resource for all aspects of ITM program management, including avoiding environmental or health problems with this technology, is a manual prepared for the Malaria Consortium, titled, "Insecticide Treated Net Projects: A Handbook for Managers" (http://www.who.int/malaria/cmc_upload/0/000/016/211/ITNinterventions_en.pdf). Except for LLITNs, as outlined above, this examination does not cover pesticides, including their procurement, use, transport, storage or disposal. Support for any other pesticide-related activity considered under SO3, for example indoor residual spraying, or the use of pesticides in construction or agriculture, will necessitate the preparation of a Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) to address what pesticides may be used and under what conditions (training, safety equipment, etc.) in accordance with AFR Bureau guidance and fulfilling all analytical elements required by 22CFR216.3(b), USAID's Pesticide Procedures. Another resource for proposed agricultural use of pesticides is the EGSSAA chapter 12 on integrated pest management (http://www.encapafrika.org/EGSSAA/Word_English/ipm.doc).

SECTION 6: MONITORING AND REPORTING

This IEE is prepared and approved at the Strategic Objective level, and all USAID/Kenya health programs funded through SO3 fall under its environmental threshold determinations. ADS 204.5.4 requires USAID/Kenya and implementing partners to actively monitor activities based on the conditions in the IEE, and to modify or terminate activities that are not in compliance.

USAID/Kenya SO3 will use an annual Environmental Mitigation and Monitoring Report (EMMR) to ensure programmatic compliance with 22 CFR 216 and ADS 204.5.4 by documenting that the conditions specified in the SO3 IEE have been met for all activities carried out under each bi-lateral award. The EMMR will be due in October each year. If the SO3 team or the SO's implementing partners propose that new activities, not described in this IEE, should be added to any award, an Environmental Screening Form (and possibly an Environmental Review Report) must be prepared to examine potential environmental impacts the new activity. Annex 2 presents templates of these forms. If environmental screening and review reveal inconsistencies with the determinations of this IEE and/or if additional conditions are necessary to mitigate environmental impact during implementation of new, proposed activities, this IEE must be amended..

The EMMR must be completed by each organization carrying out activities under a USAID/Kenya SO3 bi-lateral award. It will include the organization's own report plus the EMMRs of any sub-awardees, to capture the entire range of activities funded by USAID/Kenya under the bi-lateral award. The prime USAID/Kenya bi-lateral implementing partners are responsible for ensuring that each sub-awardee completes and submits the EMMR to the prime in a timely fashion. The EMMRs are reviewed and approved by the CTO and the Mission Environmental Officer.

The EMMR consists of 3 parts:

4. The Environmental Verification Form
5. The Mitigation Plan for specific environmental threats carried out by the implementer,
6. The Reporting Form

The EMMR Environmental Verification Form

Because of the integrated nature of the USAID/Kenya SO3 portfolio, a single bi-lateral award (along with any sub-awards) often contains activities having different conditions required for prevention or mitigation of environmental impact. This form indicates the categories of activities carried out by implementing partners (or their sub-awardees) and serves to 'trigger' USAID expectations of mitigation measures.

The EMMR Mitigation Plan

Implementing partners will use the Mitigation Plan to describe the specific actions they will undertake under each category of activity when screening reveals potential environmental threats as outlined in Section 3 of this IEE. In these cases, mitigation will be undertaken as described in Section 5, Table 4 of this IEE. The Mitigation Plan also identifies the person responsible for monitoring compliance with mitigation and the indicator, method and frequency of monitoring.

The EMMR Reporting Form

This form reports on the results of applying the mitigation measures described in the Mitigation Plan and identifies outstanding issues with respect to required conditions. In some cases, digital photos will be the best way to document mitigation and should be included in the report.

USAID/Kenya SO3 Health
EMMR Part 1 of 3: Environmental Verification Form

USAID/Kenya Award Name (circle one)
 APHIA (specify region or sector) _____ Name of Sub-awardee Organization (if this EMMR is for a sub): _____
 Lea Toto _____
 ARV drugs TBD _____
 PHARMA _____
 Nvumbani Village _____
 Nutrition award TBD _____
 MUSM _____
 Capable Partners _____
 Mildmay _____
 OVC Scholarships _____
 Kenya Institute of Education _____
 K-REP _____
 Other Award _____
 (specify) _____
 Name of Prime Implementing Organization: _____ Date of Previous EMMR for this organization: _____
 (if any)

Geographic location of USAID-funded activities (Province, District): _____
 Date of Screening: _____
 Funding Period for this award: FY ____ - FY ____
 Current FY Resource Levels: FY _____
 This report prepared by: _____
 Name: _____ Date: _____

Indicate which activities your organization is implementing under SO3 funding.

Key Elements of Program/Activities Implemented		Yes	No
1	- Education, Technical Assistance, or Training - Analysis, Studies, Academic or Research Workshops and Meetings - Document and Information Transfers - Programs involving health care, or family planning services except where directly affecting the environment - Studies, projects or programs intended to develop the capability of recipient countries and organizations to engage in development planning		
2	Procurement, Storage, Management and Disposal of Public Health Commodities		
3	Generation, storage, handling and disposal of hazardous and highly hazardous medical waste		
4	Small-Scale construction or rehabilitation of hospitals, clinics, laboratories, VCT or training centers		
5	Small-Scale Water and Sanitation		
6	Small-Scale agricultural activities, including but not limited to small crop production, drip irrigation, aquaculture, horticulture, poultry and small livestock, and dairy production		
7	Use of pesticides		
8	Other activities that are not covered by the above categories		

USAID/Kenya SO3 Health
EMMR Part 2 of 3: Mitigation Plan

Category of Activity from Section 5 of SO3 IEE	Describe specific environmental threats of your organization's activities (based on analysis in Section 3 of SO3 IEE)	Description of Mitigation Measures for these activities as required in Section 5 of SO3 IEE	Who is responsible for monitoring	Monitoring Indicator	Monitoring Method	Frequency of Monitoring
1. Education, technical assistance, training, etc.	No environmental impacts anticipated as a result of these activities. However, observe the Guidelines shown in Section 4, Table 3.	Education, technical assistance and training about activities that inherently affect the environment includes discussion of prevention and mitigation of potential negative environmental effects.		Discussion of environmental impact included in education, technical assistance, training and other materials	Review of materials	Annual
2. Public Health Commodities						
3. Medical waste		Completion of the Healthcare Waste Management Minimum Program Checklist and Action Plan (Annex 1)				Annual
4. Small-Scale Construction						
5. Small-Scale Water and Sanitation						
6. Small-Scale						

Category of Activity from Section 5 of SO3 IEE	Describe specific environmental threats of your organization's activities (based on analysis in Section 3 of SO3 IEE)	Description of Mitigation Measures for these activities as required in Section 5 of SO3 IEE	Who is responsible for monitoring	Monitoring Indicator	Monitoring Method	Frequency of Monitoring
Agriculture						
7. Use of pesticides						
8. Other activities that are not covered by the above categories: Describe						

USAID/Kenya SO3 Health
EMMR part 3 of 3: Reporting form

[illegible]

Certification

I certify the completeness and the accuracy of the mitigation and monitoring plan described above for which I am responsible and its compliance with the SO3 IEE:

Signature

Date

Print Name

Organization

BELOW THIS LINE FOR USAID USE ONLY

USAID/Kenya Clearance of EMMR:

Cognizant Technical Officer: _____ Date: _____

Mission Environmental Officer: _____ Date: _____

As appropriate: REA, BEO [depending on nature of activity, which potentially may require an EA]

Note: if clearance is denied, comments must be provided to applicant

ANNEX 1. HEALTHCARE WASTE MANAGEMENT MINIMAL PROGRAM CHECKLIST AND ACTION PLAN

<i>Elements/Actions</i>	<i>In Place?</i>	<i>Next Steps to be done</i>		
		<i>What</i>	<i>By Whom</i>	<i>By When</i>
<i>Written plans and procedures</i>				
1. <i>A written waste management plan</i> Describing all the practices for handling, storing, treating, and disposing of hazardous and non-hazardous waste, as well as types of worker training required.				
2. <i>Internal rules for generation, handling, storage, treatment, and disposal of healthcare waste.</i>				
3. <i>Clearly assigned staff responsibilities that cover all steps in the waste management process.</i>				
4. <i>Staff waste handling training curricula or a list of topics covered.</i>				
5. <i>Waste minimization, reuse, and recycling procedures.</i>				
<i>Staff Training, Practices, and Protection</i>				
6. <i>Staff trained in safe handling, storage, treatment, and disposal.</i> Do staff exhibit good hygiene, safe sharps handling, proper use of protective clothing, proper packaging and labeling of waste, and safe storage of waste? Do staff know the correct responses for spills, injury, and exposure?				
7. <i>Protective clothing available for workers who move and treat collected infections waste such as surgical masks and gloves, aprons, and boots.</i>				
8. <i>Good hygiene practices.</i> Are soap and, ideally, warm water readily available workers to use and can workers be observed regularly washing?				
9. <i>Workers vaccinated against viral hepatitis B, tetanus infections, and other endemic infections for which vaccines are available?</i>				

Handling and Storage Practices				
10. <i>Temporary storage containers and designated storage locations.</i>				
11. Are there labeled, covered, leak-proof, puncture-resistant temporary storage containers for hazardous healthcare wastes?				
12. <i>Minimization, reuse, and recycling procedures.</i>				
- Does the facility have good inventory practices for chemicals and pharmaceuticals? i.e.: - use the oldest batch first; - open new containers only after the last one is empty; procedures to prevent products from being thrown out during routine cleaning; and				
13. <i>A waste segregation system.</i>				
- Is general waste separated from infectious/hazardous waste? - Is sharp waste (needles, broken glass, etc.) collected in separate puncture-proof containers? - Are other levels of segregation being applied e.g. hazardous liquids, chemicals and pharmaceuticals, PVC plastic, and materials containing heavy metals ((these are valuable, but less essential)?				
14. <i>Temporary storage containers and designated storage locations.</i>				
- Are there labeled, covered, leak-proof, puncture-resistant temporary storage containers for hazardous healthcare wastes? - Is the location distant from patients or food?				
Treatment Practices				
15. <i>Frequent removal and treatment of waste</i>				
- Are wastes collected daily? - Are wastes treated with a frequency appropriate to the climate and season? - Warm season in warm climates within 24 hrs - In the cool season in warm climates within 48 hrs - In the warm season in temperate climates within 48 hrs				

16. <i>Treatment mechanisms for hazardous and highly hazardous waste. (The most important function of treatment is disinfection).</i> • Are wastes being burned in the open air, in a drum or brick incinerator, or a single-chamber incinerator? • If not are they being buried safely (in a pit with an impermeable plastic or clay lining)? • Is the final disposal site (usually a pit) surrounded by fencing or other materials and in view of the facility to prevent accidental injury or scavenging of syringes and other medical supplies?				
17. If the waste is transported off-site, are precautions taken to ensure that it is transported and disposed of safely?				

For more detailed checklists and guidance consult: *Safe management of wastes from health-care activities*, edited by A. Prüss, E. Giroult and P. Rushbrook. Geneva, WHO, 1999, http://www.who.int/water_sanitation_health/Environmental_sanit/MHCWHanbook.htm. English

ANNEX 2: ENVIRONMENTAL SCREENING FORM FOR NEW ACTIVITIES PROPOSED UNDER USAID/KENYA SO3 HEALTH

Any bi-lateral Implementing Partner proposing an activity which is not covered by the existing USAID/Kenya SO3 IEE must complete the “Environmental Screening Form” UNLESS the project or activity is carried out to address an emergency (*e.g.*, international disaster assistance). Emergencies are determined by the US Ambassador, not by the applicant. Per CFR §216.2(b)(1), most activities carried out under emergency circumstances are considered EXEMPT from environmental procedures, except for the procurement or use of pesticides.

The proposed activity cannot be approved and no funds may be committed until the environmental documentation, including mitigation measures, is cleared by the SO3 CTO and approved by the USAID/Kenya Mission Environmental Officer (MEO). USAID may request modifications, or reject the documentation. If the activities are found to have significant adverse impacts, a full Environmental Assessment must be conducted.

The instructions for completing the Environmental Screening Form follow:

Step 1. Provide requested “Applicant information” (section A of the form)

Step 2. List all proposed activities

In section B of the form, list the proposed activities that are part of the new project. Once listed, they can be compared with those for which environmental determinations exist in the SO3 IEE. Include all phases: *planning, design, construction, operation & maintenance*. Include ancillary activities required to build or operate the primary activity. Examples include building or improving a road so that heavy vehicles can reach the project site, excavation of fill material or gravel for construction, provision of electricity, water, or sewage facilities, disposal of solid waste, etc.

Step 3a. Screening: Identify low-risk and high-risk activities

For *each* new activity you have listed in Section B of the form, refer to the list below to determine whether it is a listed low-risk or high-risk activity.

If an activity is specifically identified as “very low risk” or “high risk” in the list below, indicate this in the “screening result” column in Section B of the form.

Very low-risk activities (activities with low potential for adverse biophysical or health impacts including §216.2(c)(1))	High -risk activities (activities with high potential for adverse biophysical or health impacts including §216.2(d)(1))
Provision of education, technical assistance, or training. (Note that activities directly affecting the environment do not qualify.) Community awareness initiatives Technical studies and analyses and other information generation activities not involving intrusive sampling of endangered species or critical habitats. Document of information transfers Rehabilitation of water points for domestic household use, shallow, hand-dug wells or small water storage devices. Water points must be located where no protected or other sensitive environmental areas could be affected. NOTE: USAID guidance on potable water requires water quality testing for arsenic, coliform, nitrates, and nitrites. Small-scale construction. Construction or repair of facilities if total surface area to be distributed is under 10,000 sq. ft. (approx. 1,000 sq. m) (and when no protected or other sensitive environmental areas could be affected). Credit or financing. Support for credit arrangements (when no biophysical environmental impact can be reasonably expected). Capacity for development. Studies or programs intended to develop the capability of recipients to engage in development planning. (Does NOT include activities directly affecting the environment) Title II Activities. Food for development programs under Title III of P.L. 480, when no on-the-ground biophysical interventions are likely Small-scale Natural Resource Management activities for which the answer to ALL SUPPLEMENTAL SCREENING QUESTIONS (see <i>Natural Resources supplement</i>) is "NO."	Substantial piped water supply and sewage construction Large-scale borehole or water point construction Large-scale irrigation Large-scale water management structures such as dams and impoundments Drainage of wetlands or other permanently flooded areas Large-scale agricultural mechanization Light industrial plant production or processing (e.g., agro-industrial processing of forest products) <u>High-risk and typically not funded by USAID:</u> Actions affecting protected areas and species. Actions determined likely to significantly degrade protected areas, such as introduction of exotic plants or animals Actions determined likely to jeopardize threatened & endangered species or adversely modify their habitat (esp. wetlands, tropical forests) Activities in forests, including: ▪ Conversion of forest lands to rearing of livestock ▪ Construction of dams or other water control structures that flood relatively undegraded forest lands

(This list of activities is taken from the text of 22 CFR 216 and other applicable laws, regulations, and directives)

Step 3b: Identify activities of unknown or moderate risk.

All activities NOT identified as “very low risk” or “very high risk” are considered to be of “unknown or moderate risk.” Common examples of moderate-risk activities are given in the table below.

Check “moderate or unknown risk” under screening results in Section B of the form for ALL such activities.

Illustrative examples of moderate-risk activities If ANY of the activities listed in this table may adversely impact (1) protected areas, (2) other sensitive environmental areas, or (3) threatened and endangered species and their habitat, THEY ARE NOT MODERATE RISK. All such activities are HIGH RISK ACTIVITIES.	
Medium-scale construction. Construction or rehabilitation of facilities or structures in which the surface area to be disturbed exceeds 10,000 sq. ft. (1000 sq meters) but funding level is \$200,000 or less. (E.g. agricultural trading posts, community training centers). Water provision/storage. Construction or rehabilitation of small-scale water points or water storage devices for domestic or non-domestic use (Covers activities NOT included under “very low risk activities”) NOTE: USAID guidance on water quality requires testing for arsenic, nitrates, and coliform bacteria	Nutrition, health care or family planning, if (a) some included activities could directly affect the environment (e.g., construction, supply systems, etc.) or (b) bio-hazardous healthcare waste (esp. HIV/AIDS) is produced, syringes are used, or blood is tested. Institutional support grants to NGOs/PVOs when the activities of the organizations are known and may reasonably have adverse environmental impact. Sampling. Technical studies and analyses or similar activities that could involve intrusive sampling of endangered species or critical habitats (includes aerial sampling).

Step 4. Determine if you must write an Environmental Review Report

Examine the “screening results” as they are entered in Section B of the form

- A. If ALL activities are “very low risk” then no further review is necessary. In Section C of the form, check the box labeled “very low risk activities.” Skip to Step 8 of these instructions.
- B. If ANY activities are “unknown or moderate risk,” you MUST complete an ENVIRONMENTAL REVIEW REPORT addressing these activities. Proceed to Step 5.
- C. If ANY activities are “high risk,” note that USAID’s regulations usually require a full environmental assessment study (EA). Because these activities are assumed to have a high probability of causing significant, adverse environmental impacts, they are closely scrutinized. Any proposed high-risk activity should be discussed in advance with USAID. In some cases, it is possible that effective mitigation and monitoring can reduce or eliminate likely impacts so that a full EA will not be required. If the applicant believes this to be the case, the Environmental Review Report must argue this case clearly and thoroughly. Proceed to Step 5.

Step 5. Write the Environmental Review Report, if required

The Environmental Review Report presents the environmental issues associated with the proposed activities. It also documents mitigation and monitoring commitments

For moderate risk activities, the Environmental Review Report is typically a SHORT 2-3 page document. The Report will typically be longer when (1) activities are of higher or unknown risk, and (2) when a number of impacts and mitigation measures are being identified and discussed.

The Environmental Review Report follows the outline below:

- A. **Summary of Proposal.** Summarize background, rationale, and outputs/results expected. (Reference to proposal, if appropriate).

- B. **Description of activities.** For all moderate and high-risk activities listed in Section B of the form, succinctly describe location, siting, surroundings (include a map, even a sketch map). Provide both quantitative and qualitative information about actions needed during all project phases and who will undertake them. (all of this information can be provided in a table). If various alternatives have been considered and rejected because the proposed activity is considered more environmentally sound, explain these.
- C. **Environmental situation & Host Country environmental requirements.** Describe the environmental characteristics of the site(s) where the proposed activities will take place. Focus on site characteristics of concern – e.g. water supplies, animal habitat, steep slopes, proximity to human habitation, etc. With regard to these critical characteristics, is the environmental situation at the site degrading, improving, or stable? In this section also describe applicable host country environmental regulations, policies, or practices.
- D. **Evaluation of Activities and Issues with Respect to Environmental Impact Potential.** Include impacts that could occur before and during implementation of the activity, as well as any problems that might arise with abandoning, restoring or reusing the site at the end of the anticipated life of the facility or activity. Explain direct, indirect, induced and cumulative effects on various components of the environment (e.g., air, water, geology, soils, vegetation, wildlife, aquatic resources, historic, archeological or other cultural resources, people and their communities, land use, traffic, waste disposal, water supply, energy, etc.)
- E. **Environmental Mitigation Actions (including monitoring).** Provide a work plan and schedule identifying the following:
- Mitigation measures.** Identify the means taken to avoid, reduce, or compensate for impacts. (For example, replanting of vegetation, compensation for any relocation of homes and residents.) If standard mitigation or best practice guidance exists and is being followed, cite this guidance (e.g., the Umbrella IEE).
 - Monitoring.** Indicate how mitigation measures will be monitored to ensure that they accomplish their intended result. If some impacts are uncertain, describe the monitoring which will be conducted to identify and respond to these potential impacts.
 - Responsible Parties.** Identify *who* will undertake mitigation and who will conduct the monitoring, and at what frequency.
- Note:** Completion of this part of the ERR will satisfy the requirement of completing the Mitigation Plan (Part 2) of the EMMR. Where the EMMR asks for a description of mitigation measures, implementing partners and CTOs may refer to and cite the mitigating and monitoring actions they describe in Step 5, Section Ea-c, above.
- F. **Other information.** Where possible and as appropriate, include photos of the site and surroundings; maps; and list names of any reference materials or individuals consulted. (Pictures and maps of the site can substantially reduce the written description required in parts B & C)

Step 6. Based on the environmental review, reach a recommended determination for *each* high-risk or unknown/moderate-risk activity

For each high-risk or unknown/moderate-risk activity, the environmental review will help you decide between one of three recommended determinations:

- No significant adverse impacts. The activity in question will not result in significant, adverse environmental impacts. Special mitigation or monitoring is not required. Typically, this conclusion is not appropriate for high-risk activities.
- No significant adverse impacts given specified mitigation and monitoring. With mitigation and monitoring as specified in the Environmental Review Report, the activities in question will not result in significant adverse environmental impacts.
- Significant adverse impacts. The activities in question are likely to cause significant adverse impacts and cannot be mitigated with best practices or other measures. A full environmental assessment will be required.

For each high-risk or unknown/moderate-risk activity, indicate your “recommended determination” in Section B of the form.)

Step 7. Summarize recommended determinations

In section C of the form, summarize your recommended determinations by checking ALL categories indicated in Table 1.

Step 8. Sign certifications (Section D of form)**Step 9. Submit form to USAID project officer.** Attach Environmental Review Report, if any.

Environmental Screening Form for new USAID/Kenya SO3 activities

A. Applicant Information

<u>Organization:</u>	<u>Parent grant or project:</u>
<u>Individual contact and title:</u>	<u>Address, phone & email:</u>
<u>Proposed activity (brief description):</u>	<u>Amount of funding requested:</u>
<u>Location of proposed activity (country(ies) and subregions within country):</u>	<u>Start and end date of proposed activity:</u>

B. Activities, screening results, and recommended determination

Proposed Activities (Continue on additional page if necessary)	Screening Result (Step 3 of Instructions)			Recommended Determinations (Step 6 of Instructions) Complete for all moderate/unknown and high-risk activities)		
	Very Low Risk	High Risk*	Moderate or unknown risk*	No significant adverse impact	With specified mitigation, no significant adverse impact	Significant adverse impact
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

* These screening results require completion of an Environmental Review Report

C. Summary of recommended determinations (check ALL that apply)

The proposal contains...	(equivalent Regulation 216 terminology)
☐ Very low risk activities	Categorical exclusion(s)
☐ After environmental review, activities determined to have no significant adverse impacts *	Negative determination(s)
☐ After environmental review, activities determined to have no significant adverse impacts, given specified mitigation and monitoring *	Negative determination(s) with conditions*
☐ After environmental review, activities determined to have significant adverse impacts *	Positive determination(s)*

* for these determinations, the form is not complete unless accompanied by Environmental Review Report

D. Certification:

I, the undersigned certify that:

1. the information on this form is correct and complete
2. the following actions have been and will be taken to assure that the activity complies with environmental requirements established for this Project:
 - Those responsible for implementing this activity have received training in environmental review AND training and/or documentation describing essential design elements and best practices for activities of this nature.
 - These design elements and best practices will be followed in implementing this activity.
 - Any specific mitigation or monitoring measures described in the Environmental Review Report will be implemented in their entirety.
 - Compliance with these conditions will be regularly confirmed and documented by on-site inspections during the activity and at its completion.

(Signature) _____

(Date) _____

(Print name) _____

Note: if screening results in *any activity* being designated “high risk” or “moderate or unknown risk,” this form is not complete unless accompanied by an environmental review report.

BELOW THIS LINE FOR USAID USE ONLY**Clearance Record**

USAID/Kenya SO3 CTO	(print name)	(signature)	(date)
☐ Clearance given			
☐ Clearance denied			
USAID/Kenya MEO	(print name)	(signature)	(date)
☐ Clearance given			
☐ Clearance denied			
USAID REA*	(print name)	(signature)	(date)
☐ Clearance given			
☐ Clearance denied			
USAID BEO*	(print name)	(signature)	(date)
☐ Clearance given			
☐ Clearance denied			

* REA and BEO approval required for all “high risk” screening results and for determinations of “significant adverse impacts”

