INITIAL ENVIRONMENTAL EXAMINATION
AND
CATEGORICAL EXCLUSION

USAID/TANZANIA AGRICULTURE and FOOD SECURITY PORTFOLIO (EG)

Program Number: SO 12
Country/Region: Tanzania/East Africa
Program/Project Title: Feed the Future: Increase Household Food Security, Nutrition and Incomes

USG Foreign Assistance Framework:
Functional Objective 3: Investing in People
Program Area 3.1: Health
Program Element 3.1.9: Nutrition
Program Area 3.3: Social and Economic Service and Protection of Vulnerable Populations
Program Element 3.3.3: Social Assistance

Functional Objective 4: Economic Growth
Program Area 4.2: Trade and Investment
Program Element: 4.2.1: Trade and Investment Enabling Environment
Program Element: 4.2.2: Trade and Investment Capacity
Program Area 4.4: Infrastructure
Program Element: 4.4.3: Transport Services
Program Area 4.5: Agriculture
Program Element: 4.5.1: Agricultural Enabling Environment
Program Element: 4.5.2: Agriculture Sector Capacity
Program Area 4.6: Private Sector Competitiveness
Program Element: 4.6.1 Business Enabling Environment
Program Element: 4.6.2 Private Sector Capacity
Program Area 4.8: Environment
Program Element: 4.8.2 Clean Productive Environment

Funding Begin: FY2010  Funding End: FY2015  LOP Amount: $ 500,000,000

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Current Date: September 2, 2010

IEE Amendment (Y/N): NO. This IEE supersedes the previous IEE: 35Tanzania3_SO12_Ag_IEE.doc (USAID/AFR BEO 2005).
ENVIRONMENTAL ACTION RECOMMENDED: (place X where applicable)

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

ADDITIONAL ELEMENTS:
CONDITIONS X PVO/NGO: X

SUMMARY OF FINDINGS:
The purpose of this Initial Environmental Examination (IEE) is to provide environmental review and threshold determinations for the activities of USAID/Tanzania’s Feed the Future Strategy and Program, the USG Global Hunger and Food Security Initiative portfolio (Increased Household’s Food Security, Nutrition and Incomes). This IEE consolidates the threshold determinations for current and new activities that the Agriculture and Food Security portfolio will undertake using FY10 - FY 2015 resources. It incorporates fully and therefore replaces the previous SO12 IEE, 35Tanzania3_SO12_Ag_IEE.

Section 1 covers the Purpose and Scope of this IEE; Section 2 provides an overview of Tanzania’s Country and Environmental Information; Section 3 provides a program description of USAID/Tanzania’s Feed the Future program; Section 4 provides an evaluation of the potential environmental impacts of current and anticipated Agriculture and Food Security activities and the threshold environmental determination and mitigation measures for them; Section 5 describes environmental monitoring and compliance assurance responsibilities for USAID/Tanzania’s Agriculture and Food Security portfolio.

Recommended Environmental Determinations:

1. Categorical Exclusion: The following activities under the two foreign assistance objectives (Investing in People and Economic Growth) to support Increased Rural Household Incomes are Categorically Excluded from initial environmental examination as no environmental impacts are expected as a result of these activities. All are excluded per the following citations from Title 22 of the Code of Federal Regulations 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;
   (vi) Studies, projects or programs intended to develop the capability of recipient countries and organizations to engage in development planning.

   However, if any topic associated with these activities is one that inherently affects the environment, such as training in agricultural land preparation or training under Development Credit Authorities (DCAs) to enhance the capacity of finance institutions in rural lending, then such training will include information on how to minimize and/or mitigate these impacts. Examples include: instruction on land preparation that minimizes erosion and maximizes the retention of soil moisture or training for rural investment banks in screening loan portfolios of micro-finance institutions for potential negative impacts.

2. Negative and Positive Determination Threshold Decisions:

   2.1 Pursuant to 22 CFR216.3(a)(2)(iii), a Negative Determination with Conditions is recommended for activities: micro-credit, loans, micro-finance institutions (MFIs) and micro-enterprises, loan guarantees, and development credit authority (DCA).
**Condition:**
The Mission shall ensure that the Guaranteed Party or Parties have environmental screening systems sufficient to demonstrate compliance with local environmental laws and to enable USAID to make an assessment of the environmental impact of such activities and shall submit to USAID their proposed policies and procedures to assure that the projects financed are environmentally sound and comply with applicable laws and procedures.

2.2 A **Negative Determination with Conditions** is recommended for activities: agricultural productivity technologies and inputs (e.g. fertilizers, pesticides, hybrid seeds, construction, land and water management practice, new crop commodity sub-sectors and construction) as follows:

2.2.1 **Fertilizers:** Pursuant to 22 CFR 216.3(a)(2)(iii) a **Negative Determination with Conditions** is recommended for use of fertilizers, subject to the following **Conditions**:
The SO 12 team shall work with activity implementing partners to ensure that only fertilizers that are approved by both the local regulatory authority and the USEPA shall be introduced and utilized. Also implementing partners must assure that potential users are trained in proper fertilizer handling, storage, use and application techniques and fertilizers are employed according to the best practices, promoting integrated soil fertility management. Refer to Annex 3, Fertilizer Fact Sheet. USAID/Africa Bureau, http://www.encapafrica.org/egssaa/AFR_Fertilizer__Factsheet_Jun04.pdf.

2.2.2 **Pesticides.** Pursuant to 22 CFR 216.3(b)(1), a **Negative Determination with conditions** is recommended for Activities involving use of pesticides. **Condition:**
The SO 12 team shall ensure that any activity involving pesticides, or new pest management products or technologies will be preceded by the preparation and BEO approval of PERSUAPs in accordance with Agency guidance, and fulfilling all analytical elements required by 22 CFR 216.3(b), USAID’s Pesticide Procedures. The USAID/EA environmental staff will assist the Tanzania MEO and Activity Managers in establishing the need. New PERSUAPs will be commissioned as necessary, by the respective implementing partners.

2.2.3 **Seeds, seed supply, planting materials, germ plasm, exotic species:** A **Negative Determination with Conditions** is recommended pursuant to 22 CFR 216.3(a) (2)(iii) for activities associated with seeds, seed supply and planting materials. **Condition:**
The SO 12 team and activity implementing partners shall ensure that suppliers:
- a) Ensure appropriateness for the agroclimatic zone to which they are being introduced;
- b) Avoid introducing exotic invasive species; and
- c) Avoid providing or promoting GMOs.

The Foreign Assistance Act, Part I, Section 119(g) - Endangered Species, specifies that USAID shall (10) deny any direct or indirect assistance under this chapter for actions which significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas.

This requires identifying and mitigating any potential direct adverse impacts on the physical environment and human health and safety (such as due to aflatoxin contamination) arising from distribution of seeds.

If **biotechnology, biosafety, and genetically-modified** organisms (GMOs) or life-modified organisms (LMOs) GMO/LMO activities are to be considered in the scope of Tanzania FTF activities, any support for laboratory- or field-based research, multiplication, or dissemination of GMOs or LMOs shall be subject to
review under the Agency’s Biosafety procedures, and an appropriate environmental review conducted and approved in advance of commitment of funds.

2.2.4 Small scale construction
Condition:
The SO 12 team shall ensure rehabilitation of existing facilities and construction of facilities in which the total surface area disturbed is less than 10,000 square feet (1000 m²), is not done in protected areas or other environmental sensitive areas and that these activities shall be conducted following principles for environmentally sound construction, as provided in the Small Scale Construction chapter of USAID EGSSAA [http://www.encapafrica.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 contained in the Environmental Review Form on the ENCAP website “Compliance Forms” page [http://www.encapafrica.org/compliance.htm]. Construction will not begin until such a review is completed and approved by the Mission Environmental Officer.

2.2.5 A Negative Determination with Conditions is recommended pursuant to 22 CFR 216.3(a) (2)(iii) for activities involving land and water management improvement, watershed management, soil erosion control to ensure that optimal practices are followed. Pertinent chapters of the USAID EGSSA are the following: Chapter 1- Agriculture: Soil and Water Resources, including Irrigation [http://www.encapafrica.org/EGSSAA/Word_English/agriculture.doc]. There are 18 sector-specific chapters in Part II of Environmental Guidelines for Small-Scale Activities in Africa, (2nd Edition) and 7 in Part III. Micro and Small Enterprises [http://www.encapafrica.org/egssaa.htm#II].

Conditions:
The SO 12 team and activity implementing partners shall ensure that improvements in land and water management techniques do not cause destruction or degradation of natural habitat, including deforestation, desertification and drainage of wetlands; lead to loss of biodiversity; do not lead to the introduction of exotic and non-native animals and plants; lead to erosion and loss of soil fertility, siltation of water bodies or reduction in water quality; or spread disease.

2.3 Irrigation Infrastructure. Pursuant to 22 CFR216.2(d)(2) and 216.6, a Positive Determination is recommended for major infrastructure activities (e.g. Irrigation works rehabilitation and new development); They can have a negative impact on the physical environment. The SO 12 team and activity implementing partners shall ensure that any USAID support for the construction irrigation system and of roads construction under this program, an Environmental Impact Assessment (EIA) shall be developed before program can begin.

“Minor” rehabilitation activities are recommended for a Negative Determination with Conditions stipulating that optimal environmental design and engineering practices be applied in accordance with USAID/AFR’s EGSSAA, Chapter II.2, Agriculture and Irrigation: [http://www.encapafrica.org/EGSSAA/Word_English/agriculture.doc]

2.4. Roads. Pursuant to 22 CFR 216.3 (a)(2)(iii) a Negative Determination with conditions is recommended for activities involving minor feeder rural road construction and rehabilitation of old roads. Negative impacts on the environment may occur.
Rural roads development and improvement should be conducted in a manner consistent with the good planning, design and implementation practices described in EGSSAA Part II: Chapter 14: Rural roads (http://www.encapafrica.org/EGSSAA/Word_English/roads.doc).

For major road and related infrastructure construction, a **Positive Determination** is recommended, pursuant to 22 CFR216.2(d)(2) and 216.6. Any USAID support for the construction of roads under this program, an Environmental Impact Assessment shall be developed before program can begin.

### 2.5 Sub-grants.

Pursuant to 22 CFR216.3(a)(2)(iii), a **Negative Determination with Conditions** is recommended for activities involving subawards, sub-grants and small grants programs, such as to business association, civil society and private sector partners, involving support for activities with the potential for impact on the environment, i.e. those that would not qualify for Categorical Exclusion. The EG Team, together with the MEO, is responsible for determining whether the activities intended for support warrant an environmental screening process.

**Conditions**

In the event that sub-grants and small grants will support activities with the potential for impact on the environment, the Tanzania EG Team has the responsibility for assuring that an environmental screening process is introduced by implementing partners. The standards to achieve for these activities are presented in USAID’s “Environmental Guidelines for Small-scale Activities in Africa” (EGSSAA), found on-line at http://www.encapafrica.org/EGSSAA, specifically Part II Sector-specific Guideline and Part III Micro and Small Enterprises. Refer to Annex 2 for the template “Environmental Screening Form for New Activities Proposed under USAID/Tanzania EG” which can be adapted by partners.

**General Across-the-board Conditions:**

In addition, there are certain requirements that apply to all activities falling under the threshold determination of “Negative Determination with Conditions and “Positive Determination”. 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. Refer to the fact sheet “Environmental Compliance: Language for Use in Solicitations and Awards” for help in assembling appropriate, ADS-mandated environmental compliance language for all solicitations and awards, which links to the appropriate ADS 204 Helpfile. The solicitation language will draw upon the determinations in this IEE.
2. Budget provisions will be made within USAID/Tanzania and/or the partners to allow for the environmental reviews and EIAs to be accomplished appropriately.
3. Bi-lateral implementing partners under USAID/Tanzania’s Agriculture and Food Security portfolio will complete an annual Environmental Mitigation and Monitoring Report (EMMR) of all activities, using the guidance and forms in Section 5 and as explained further under “Monitoring and Reporting” in that section. Provision for completing EMMRs in October of each year should be a part of annual work plans.
4. Contracting and Agreement Officer Technical Representatives (COTR/AOTRs) in USAID/Tanzania’s re and Food Security program 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.
5. AOTRs/COTRs and Activity Managers will undertake a review of the existing PERsUAPs and determine their continued applicability and, with the USAID/EA REA and AFR BEO, establish the need for amendment or preparation of new PERsUAPs. In the event new PERsUAPs are required

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for new sectoral programs (e.g., livestock), then no pesticides shall be procured or used until the PERSUAP is approved by the BEO.

6. Organizations receiving USAID/Tanzania 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.

7. USAID/Tanzania will ensure that implementing organizations have sufficient capacity to complete the environmental screening process and to implement monitoring and mitigation measures.

8. For activities that are not funded by USAID/Tanzania, but are an identifiable part of an Agriculture and Food Security program activity (for example if another source of funding is supporting agricultural activities), the implementing partner must assure that, at a minimum, the equivalent USAID standards for mitigation, as presented in Section 5, are followed.

9. Adherence to applicable GOT environmental laws and policies.

As laid out in ADS 204.5.4, USAID/Tanzania is responsible for the monitoring and evaluation of the environmental effects of all ongoing and proposed program development activities, so as to ensure they remain as Categorical Exclusions or within the bounds of the Negative Determinations with Conditions, and the Positive Determinations. The process of environmental monitoring and evaluation will be integrated into the Agriculture and Food Security Team's Performance Monitoring and Evaluation Plan.

USAID/Tanzania Agriculture and Food Security program’s implementing partners 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 any conditions applicable under this IEE have been met for relevant activities carried out under bi-lateral awards.

EMMRs will be reviewed and approved by the COTR/AOTR 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/Tanzania’s Agriculture and Food Security program, a single bi-lateral award (along with any sub-awards) might contain activities with various conditions required for prevention or mitigation of environmental impacts. 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 4 of this IEE. In these cases, mitigation will be undertaken as described in Section 4. Also, it 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 THE RECOMMENDED ENVIRONMENTAL ACTION:

CONCURRENCE:
Bureau Environmental Officer:  [Signature]  Date: 12/20/10  
Brian Hirsch

File No:  Tanzania_SO12_Ag_IEF_doc

CLEARANCE:
Acting
USAID/Tanzania Mission Director:  [Signature]  Date: 12/01/10  
Thomas Crumbaugh

SO12 Team Leader:  [Signature]  Date: 2/15/10  
Juniper Neill

USAID/Tanzania Mission Environmental Officer:  [Signature]  Date: 12/14/10  
Gilbert Kajuna

Regional Environmental Advisor (USAID/E.A):  [Signature]  Date:  
Chris Dege

Distribution:
Project file
CTO and Activity Managers
FG/NRM Team Leader
Annexes:

Annex 1. Environmental Mitigation and Monitoring Report (EMMR) Template
Annex 2: Environmental Screening Form for New Activities Proposed under USAID/Tanzania EG

APPROVAL OF THE RECOMMENDED ENVIRONMENTAL ACTION:

CONCURRENCE:
Bureau Environmental Officer: _________________    Date:__________
Brian Hirsch

File No: Tanzania_SO12_Ag_IEE_.doc

CLEARANCE:
Acting
USAID/Tanzania Mission Director: _________________    Date:__________
Thomas Crubaugh

SO12 Team Leader: _________________    Date : ____________
Juniper Neill

USAID/Tanzania
Mission Environmental Officer: _________________    Date:__________
Gilbert Kajuna

Regional Environmental Advisor (USAID/EA): __/cleared 12/20/2010 /
Walter Knausenberger, acting REA (AFR/SD/EGEA)

Distribution:

Project file

CTO and Activity Managers

EG/NRM Team Leader
INITIAL ENVIRONMENTAL EXAMINATION
AND
CATEGORICAL EXCLUSION

USAID/TANZANIA AGRICULTURE and FOOD SECURITY PORTFOLIO-FEED THE FUTURE (EG)

1.0 PURPOSE AND SCOPE OF THIS INITIAL ENVIRONMENTAL EXAMINATION (IEE)

This IEE consolidates the threshold determinations for current and new activities USAID/Tanzania intends to undertake using FY2010 – FY2015 resources to Increase Households’ Food Security, Nutrition and Incomes. Activities will be carried out mainly under the Foreign Assistance Objective 4: Economic Growth, Program Areas 4.2, 4.4, 4.5 and 4.6. In addition, resources will be committed for activities under Foreign Assistance Objective 3: Investing in People. This IEE replaces the previous SO 12 IEE Income of Small Farmers Increased in Selected Agricultural Commodity Sub-sectors (35Tanzania_SO12_Ag_IEE.doc).

This IEE provides a basis for Threshold Determinations for new program activities not covered under the previous IEE including: safety net, financial services; new initiatives in horticulture, maize, rice, and livestock.

2.0 SUMMARY OF COUNTRY AND ENVIRONMENTAL INFORMATION

2.1 Locations Affected by the Program Objectives

The program objectives support smallholder agriculture focused in high agriculture potential areas, chronically food insecure districts. The geographic target areas for staples are in Morogoro, Dodoma, Manyara and Zanzibar. Horticulture activities are in high potential areas in Arusha, Kilimanjaro, Tanga (Lushoto), Morogoro, Iringa, Mbeya and Zanzibar.

2.2 Overview

With a 2006 population of about 39.5 million and a surface area of 945,100 km², Tanzania is an influential member of the East African Community (EAC), which also has Kenya, Uganda, Rwanda and Burundi. Agriculture is the lead sector in the Tanzanian economy, the performance of the economy being strongly correlated with that of the sector. In 2009, the agricultural sector contributed 27% of the Gross Domestic Product (GDP) and provided employment for about 80% of the labour force. The growth of the agricultural sector though is correlated with the growth of total GDP however in recent years agricultural growth at 3 has not commensurate with the GDP growth rate of 7% between 2001 and 2008. Agriculture is also closely associated with rural poverty. Nearly 80% of the poor in Tanzania are in rural areas and depend on the sale of agricultural products for 75% of their household cash income. The 2007 Household Budget Survey established that the number of people living below the poverty line increased by one million between 2001 and 2007.

Overall, the growth rate of the agricultural sector has kept pace with population growth (3% in 2009) but it is short of the requirement for making a serious dent on rural poverty. Although Tanzania is not considered a food-deficit country, normally producing over 90% of her food requirements, the rain-dependence of the agricultural systems makes food access a major concern for many rural households in the semi-arid areas of central and northern Tanzania. High post harvest losses (40% for perishables, 20% for grains), inefficient distribution systems and low incomes also contribute to food insecurity. The
constraints to agricultural growth include: (i) developing new sources of growth in response to markets; (ii) increasing farm productivity; (iii) improving agribusiness and processing to enhance rural employment; and (iv) raising public expenditures in the sector from 6.2% of the budget in 2007/08 to 7% in FY2009/10 towards the New Economic Partnership for African Development target of 10% by 2011.

Tanzania’s National Strategy for Growth and Reduction of Poverty (MKUKUTA, 2006-10) recognizes the critical importance of the agricultural sector for poverty reduction. MKUKUTA II aims at not only accelerating economic growth but also ensuring the growth in inclusive and pro-poor. Agriculture is prioritized in MKUKUTA II as a tool for a broad based growth.

Conditions are ideal for Tanzania to benefit from significant increases in agricultural assistance to support scaled impact in food security. Food security is paramount in Tanzania’s development agenda and implementation and monitoring plans are in place through Tanzania’s 2006-2015 Agricultural Sector Development Programme (ASDP) to link results to investments. There is agreement that a Comprehensive Africa Agriculture Development Programme (CAADP) compact and a joint monitoring plan linking USG’s food security initiative to ASDP aims be established (by end of the 2010 program year.)

The Feed the Future program lays the groundwork for accelerating agricultural growth to increase food security, nutrition and incomes of Tanzania households by increasing food grain production by 1.25 million tons in five years.

2.3 Agriculture

Low productivity has hampered Tanzania’s growth in the agricultural sector. Most staples have yields of less than one ton/ha. The 2002/3 agricultural census shows that Tanzania’s average yields for maize and rice are far below the African average at 0.75 (1.29 tons/ha in Africa) for maize and 0.95 (2.3 tons/ha in Africa) for rice. Low productivity of cereals in Tanzania is attributed to dependency on rain-fed agriculture and low usage of fertilizer, improved seeds and pesticides. Tanzania has over 2.3 million ha of high potential land for irrigation, but only 289,245 ha are developed. The ASDP target to develop 441,000 ha of land for irrigation by 2010 is far from being reached.

The Agriculture and Food Security program support activities rehabilitate and develop 52,000 ha of irrigated land in seven schemes, improving productivity and increasing annual production of staples by 25% (1.25 million tons) in five years. USG aims coordinate activities with those of other donors through ASDP to ensure farmers access to farm input and technologies.

Feed the Future resources will aim to strengthen river basin authorities to effectively manage water resources and to support the Tanzania Meteorological Agency (TMA) in providing climate and weather forecast information to farmers. River Basin Management Offices (RBMO) are in a particularly important position as they are responsible for issuing permits for surface and groundwater extraction permits, which will be required for operating irrigation systems. One of the reasons that previous irrigations systems have failed in Tanzania is that proper water management institutions and governance were not developed, along with a market driven imperative, for the sustainable long-term operation of said infrastructure programs. USAID will support RBMOs in the target geographic regions, starting with the Wami-Ruvu River Basin, which received support to improve data quality on water resources and enhanced integrated water resources management through the USAID funded Integrated Water, Sanitation, and Hygiene (iWSH) program. Under a new climate change adaptation program, applied research to support enhanced decision-making to climate change and variability will focus on the water management and agriculture sectors, targeting appropriate research and operational institutions, to develop proto-type climate
information tools. This program will not just impact activities under the Feed the Future initiative, but will also be important for USAID’s support biodiversity and iWSH programs as well.

2.4 Trade and Investment

There is significant market potential for staples in Tanzania due to the presence of chronically food deficient countries in the region. Africa is the single largest importer of rice in the world ($2-3 billion/yr) and is a net importer of maize. A preference for yellow maize results in poor market performance for eastern and southern African white maize. Tanzania is an important supplier of staples in eastern and southern Africa, but access to regional markets is undermined by the regulatory framework and export logistics constraints. A staples export ban spurs informal trading across borders, resulting in high transaction costs and a lack of transparency. Compared with markets for traditional exports, the staples market is relatively unstructured and is characterized by non-compliance with standards for safety, quality, and weights and measures. Improved access to regional markets and robust domestic trade in staples would increase household incomes, reduce poverty, and address regional imbalances between food surplus and food deficit districts.

The importance and contribution of trade to poverty alleviation is articulated in the National Trade Policy. The Tanzania Trade Integration Strategy (TTIS) is a national framework for coordinating trade-related activities including trade facilitation. TTIS prioritizes increased competitiveness in regional and global markets. Tanzania is a founding member of the WTO and a member of the East African Community (EAC) and the Southern African Development Community (SADC). Tanzania established the EAC Customs Union with Kenya and Uganda in 2005 and a universal tariff regime is now being introduced.

Initial findings from the agriculture policy assessment point to policy constraints affecting the prospects for transformational growth in agriculture including: policy instability; multiplicity of local taxes; a weak legal framework to protect property rights; and a private sector that is too small to support service provision and establish effective market linkages. These recommendations form the basis for program design and procurement for activities to be supported with Feed the Future funds. Feed the Future will support trade activities in staples (maize and rice) and horticulture in regional and international markets.

2.5 Private Sector

Smallholder farmers account for over 80% of production with limited private sector participation, impeding overall growth in the sector. Tanzania spends $200 million annually to import high value food products due to a lack of product diversification and value addition. There are only a few medium and large scale millers in the country, yet Morogoro alone has over 150 small scale millers, mostly using outdated technology with low returns. PEPFAR and the World Food Programme (WFP) import food products that could be locally produced such as corn-soya-blend and fortified products for school feeding, food-by-prescription and other support to vulnerable groups. Private sector development, an ASDP priority, remains underfunded because basket funding through national systems rarely targets or engages the private sector. USG’s approach to public private partnerships and value chain development can create significant private sector incentives and investments, and is recognized by GoT as a model for improving the private sector approach throughout ASDP.

Since 2001, USAID has devoted considerable effort to developing private sector driven value chains in agriculture. The 2002-2006 Private Enterprise Support Activity (PESA) linked smallholder producer associations through out-growers schemes to private sector commercial farms, processors and exporters. PESA established 170 producer organizations, mainly in staple producing regions. Similarly, USAID supported value chains in coffee, horticulture, Artemisia, cashew and livestock have been successful in linking farmers to markets and processors through out-growers schemes. To complement its technical
assistance, USAID partnered with AfDB and CRDB Bank (Tanzania’s largest bank) in 2008 to create a $20 million DCA credit guarantee to support private sector agricultural investment.

Feed the Future resources aim to finalize assessments and program design to stimulate private sector investment in: staples and horticulture value chains; milling and food fortification; warehouse receipt systems; commodity exchanges; market intelligence; crop insurance; and farmer and industry sector associations. Our new partnership with General Mills aims build the capacity of staples millers in value addition to enable the scale-up of milling, fortification, blending and product diversification to produce domestically for vulnerable populations such as children under five, people living with HIV/AIDS, and pregnant and lactating women. This activity aims be designed to enable participation by local millers in institutional procurements to drive long-term sustainability and growth in domestic value addition. Building the capacity of millers to blend maize with cassava, sorghum and millet aims enhance utilization of these traditional staples that are gradually losing market share as consumers shift to preferred staples such as maize, rice and wheat. The DCA credit guarantee aims to spur private investment in agriculture by reducing the perceived risk of lending in the agriculture sector.

2.6 Infrastructure

Infrastructure development is crucial to enhancing Tanzania’s competitiveness in regional and international trade. Rural roads have potential to reduce transport cost for both farm inputs and agricultural produce. The National Strategy for Growth and Reduction of Poverty (NSGRP) or MKUKUTA (2005/06-2009/10) recognizes that poor quality and inadequate levels of transport are a constraint to growth. The strategies under Cluster I on Growth of the Economy and Reduction in Income Poverty identify road infrastructure intervention as one of the eleven key operational targets for promoting sustainable and broad-based growth. The National Transport Policy (NTP) also mirrors the NSGRP objective of supporting socioeconomic development through the development of an efficient and cost-effective transportation system that integrates regional and domestic economic centers and contributes to the reduction of poverty through access to markets for agricultural produce.

The USG, through USAID, supported a successful Rural Roads Program from 1998-2002 in the Feed the Future target areas that rehabilitated 1,800 km of rural roads to connect production areas with rural markets and with trunk roads leading to urban markets. Program impact assessments showed that transport costs fell by 34%, utilization increased by 30% and farm income in beneficiary communities rose by 44%. The Feed the Future program aims to improve rural roads linking production areas and trunk roads to markets in Feed the Future target areas.

2.7 Nutrition and Safety Net

Food insecurity is experienced regionally and seasonally and intra-household variability is reflected in the high incidence of under-five malnutrition (38% of children chronically malnourished and 22% underweight). Strengthen infant and young child feeding programs to address stunting: National data show that Tanzanian children do not recipients of the internationally accepted recommendation of exclusive breast feeding in the first six months followed by access to nutritious complementary foods between 6 and 36 months. These poor practices have a catastrophic effect both immediately and in the long run on Tanzanian. The program will likely: Strengthen facility based nutrition interventions including treatment of malnutrition, distribution of supplements and nutritional counseling to pregnant women and mothers within the first few years of a child’s life; strengthen community outreach of maternal newborn child services in order to promote healthy nutrition practices (including supplementation) and to identify children who may be in need of additional nutrition interventions and support, support Regional and District structures to monitor and promote facility and community based interventions, develop national communications strategy to promote healthy nutrition knowledge,
behavior, and practices within the home and community, establish private sector systems (e.g. social marketing of Lipid Based Nutrient Supplements or micronutrient powders) to address malnutrition and its effects.

The consensus among development partners is that a modest safety net program is crucial to address the needs of vulnerable populations especially women and children and households farming in marginal land and in areas with poor infrastructure. The safety net program aims to provide social protection for vulnerable groups and the rural poor and entails activities such as School Feeding Program (SFP), Food for Work, and Cash for Work. Current programming in safety nets is funded through the Financial Crisis Initiative and is expected to end in FY2012.

Food for Work targets asset creation, particularly in drought-prone areas and areas that have high levels of acute food insecurity or have lost incomes as a result of the global financial crisis. WFP aims provide a family food ration to low-income food insecure households as an incentive to participate in asset creation activities including rehabilitation and construction of irrigation systems, tree planting, construction of improved food storage facilities, rehabilitation of access roads, and provision of potable water supply. In pastoral communities, the program aims support earth dams for livestock, stock routes to markets, and feedlots.

The cash for work program aims at restoring purchasing power to rural households that have lost incomes through retrenchment or falling commodity prices for exports. This program targets vulnerable households, including geographical areas targeted by USG assistance.

2.8 Tanzanian Environmental Policies and Procedures

The Environmental Management Act
Tanzania’s legislative and policy framework for environment and natural resources management has developed in the past two decades. The Environmental Management Act was passed by parliament in 2004 and provides for the legal and institutional framework for sustainable management of the environment. It includes provisions for both Environmental Impact Assessments (EIA) of projects and Strategic Environmental Assessments (SEA) of policies, plans and programs.

National Environmental Policy (NEP)
The National Environmental Policy (NEP) of 1997 seeks to provide the framework for making fundamental changes that are needed to bring environmental considerations into the main stream of decision making. It seeks to provide sectoral and cross-sectoral policy analysis in order to achieve compatibility among sectors and interest groups and exploit synergies among them. Environmental consideration in sectoral policies and programs and their coordination is essential. In the agriculture sector, among the fundamental changes is to ensure food security and eradication of rural poverty through promotion of production systems technologies and practices that are environmentally sound.

Other key environmental policy documents are the National Environmental Action Plan (NEAP) (1997), the National Conservation Strategy, the National Biodiversity Strategy and Action Plan (1999), and a National Action Plan to combat Desertification (NAP). There are also legal provisions for decentralised and local management of natural resources. Environment and natural resources management have been mainstreamed in the Tanzanian National Strategy for Growth and Reduction of Poverty (NSGRP).

Environment and Natural Resources
The diverse Tanzanian terrestrial landscape provides habitat for an array of plant and animal species.
Over 25 percent of the country enjoys some level of protective status, including nearly 15 percent set aside for biodiversity conservation. Eighty-five percent of Tanzanians depend entirely on the management of natural resources, such as agriculture, livestock-raising, forestry, fisheries, mining, and nature-based tourism for their livelihood.

An Environmental Threats and Opportunities Assessment (ETOA) conducted by the Mission, identified natural resource and biodiversity degradation as critical problems in Tanzania. Degradation is being caused by a range of unsustainable land use practices driven by such factors as poverty; poor natural resource governance; and population growth. A number of trends underscore the nature of this problem:

• Tanzania’s forests are being cleared at a rate of 400,000 hectares per year;
• Freshwater and marine fisheries are being exploited at high levels;
• Agriculture in marginal, arid areas is undermining the productivity of traditional pastoralist systems;
• Deteriorating pasture and water resources are forcing pastoralists into less productive livelihood strategies; and
• Tanzania’s population has doubled over the past 25 years, (United Nations estimated it at about 37 million in 2003) projecting to reach 52 million by 2025.

Poverty is widespread in Tanzania. Over 80 percent of the country’s estimated 17 million poor live in rural areas and depend on agriculture as an economic activity.

Water Resource Management

The National Water Policy (NAWAPO) of 2002 was introduced in response to water resources management challenges. The NAWAPO is developed around the principles of Integrated Water Resources Management (IWRM) and proposes: devolution of responsibility for operational matters to River/Lake Basins and catchments; greater reliance on a multi-sectoral approach; treating water as a social and an economic good; and according second priority to environmental uses of water (basic human needs are the first priority). The environmental aspects of NAWAPO include provision of water for environmental flows, improved control over pollution through requirements for pollution permits and establishment of water quality standards, reductions in diffuse source pollution through education, and promotion of water conservation and recycling.

Pesticides

The Tropical Pesticides Research Institute Act, 1979 created the Tropical Pesticides Research Institute (TPRI). TPRI has responsibilities among other things, to supervise and regulate the manufacture, importation, distribution, sale and use of pesticides in Tanzania and to administer the regulations made under the Act. The Act gives TPRI the authority to create six research committees. The most significant committee of interest to businesses is: the "Pesticides Approval and Registration Technical Committee.

3.0 USAID/TANZANIA AGRICULTURE AND FOOD SECURITY PROGRAM DESCRIPTION

USAID/Tanzania’s Economic Growth Assistance Objective (AO) is “Food Security, Nutrition and Income increased”. This AO is in line with the overarching goal of the Global Hunger and Food Security Initiative to “Sustainably Reduce Global Poverty and Hunger”. USAID/Tanzania’s Feed the Future goal is to achieve sustainable agricultural growth for food security and nutrition through expansion of the staple food supply by 25%.

Key objectives are: Increase agricultural productivity; Maintain the natural resource base and promote climate change adaptation; Stimulate private sector; Increase trade; Support policy reforms and good governance; Address malnutrition and the needs of underserved groups; and Expand knowledge and training.
Eighty percent of the population engages in largely smallholder agriculture with low yields of less than one ton/ha for most staples and over $200 million is spent annually to import food products. Key factors impeding agricultural growth are: dependency on rain-fed agriculture; low usage of fertilizer, improved seeds and pesticides; lack of product diversification and value addition; problems accessing credit; a weak business enabling environment, further constrained by a staples export ban; and limited smallholder participation in the private sector.

Poverty and environmental degradation are closely linked with agricultural expansion and deforestation (400,000 ha/yr) severely threatening Tanzania’s natural resource base. The Agriculture Sector Development Programme (ASDP) is central to Tanzania’s National Strategy for Growth and Reduction of Poverty (NSGRP I), which is not on track to meet goals for reducing the percentage of people below the food poverty line and halving the number of people below the income poverty line. NSGPR II, currently under development, will emphasize the drivers of economic growth with agriculture as a central element. The national Kilimo Kwanza (Agriculture First) Campaign is an expression of reinvigorated political will to address chronic underperformance in the sector. NEPAD recently conducted a CAADP Assessment leading to plans for a CAADP Compact to be signed in 2010. GoT has reaffirmed its commitment to the CAADP process by allocating 7% of the budget to agriculture in the 2009/10 budget year with the goal of meeting the 10% CAADP benchmark by 2010/11.

The Feed the Future approach was developed through technical and strategic consultations with ministries, private sector associations, academicians and donors, and was formally endorsed by the Agriculture Sector Consultative Group chaired by the Ministry of Agriculture. Criteria for selection of Tanzania’s Feed the Future activities considered the potential to: reduce poverty; improve household food security; positively impact the economy overall; strengthen cross-sectoral linkages; increase regional trade; mitigate climate change risks and vulnerability; improve the agriculture enabling environment; and foster private sector growth and competitiveness. Primary investments maximize agriculture potential, activities of other donors, previous investments, and potential for regional trade along transport corridors. Feed the Future activities are concentrated in central region and the northern and southern highlands, with some investments in Zanzibar (Staples in Morogoro, Dodoma and Manyara and horticulture in Iringa, Mbeya, Morogoro, Dodoma, Arusha, and Lushoto). More than one-third (38%) of the nearly one million farming households (six million beneficiaries) in these regions live below the poverty line with the highest rates in Zanzibar (49%). GoT has pledged to support rapid roll-out of the program and there is consensus that by supporting

**Foreign Assistance Objective Framework – Illustrative Activities**

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<td>Program Area 4.2: Trade and Investment</td>
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<tr>
<td>Program Element 3.1.9: Nutrition</td>
<td>Program Element: 4.2.1: Trade and Investment Enabling Environment</td>
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<tr>
<td>- Promote nutritious/fortified foods for children and people living with HIV/AIDS</td>
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<tr>
<td>- Promote nutritious foods in school feeding program</td>
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<tr>
<td>- Advance school feeding and food fortification policies and public awareness</td>
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<tr>
<td>- Secured transactions reforms to facilitate use of movable assets as collateral to enhance women access to credit</td>
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<tr>
<td>- Promote horticulture value chains which has greater women participation</td>
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<tr>
<td>- Promote school gardens to supplement vegetables in school feeding program</td>
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<tr>
<td>- Vitamin A supplementation</td>
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</tbody>
</table>

- Program Element: 4.2.1: Trade and Investment Enabling Environment
- Policy reforms to support private sector investment and trade
- Trade facilitation
- Agricultural financing

**Program Element: 4.2.2: Trade and Investment Capacity**
- Promote warehouse receipt system
- Commodity exchange
- Enhance cross-border trade surveillance with customs and bureau of statistics
- Agriculture insurance
- Market intelligence
- Enhance efficiency and quality in processing, milling, packaging, branding, market promotion, fortification, blending and product diversification
- Market promotion for nutritious products for children under five and pregnant and lactating women and people living with HIV/AIDS
- Market linkage with other agencies for procurement of food assistance – WFP, PEPFAR, etc
- Diversify into regional markets
- Support logistics to enhance trade e.g. cold chain
- Promote processing and value addition

**Program Area 4.4: Infrastructure**
**Program Element: 4.4.3: Transport Services**
- Rural Roads
- Transport corridors

**Program Area 4.5: Agriculture**
**Program Element: 4.5.1: Agricultural Enabling Environment**
- Reduce barriers to trade
- Promote structured grain trade
- Promote standard weight and measures
- Deregulation of export ban
- Harmonize standards with other countries in the region
- Certification of fortified food processors
- Synergize with COMPETE on transport corridor
- Strengthen early warning and food security outlooks
- Strengthen GoT capacity to respond to emergence food relief including appropriate operation of the national grain reserve
- Support GoT policies on Biotechnology, Biofuel and land tenancy issues with respect to acquisition of agriculture land by foreign governments and multinationals
- Harmonize Tanzania pesticide standards with other countries in the region
- Facilitate an incentive package for new investment in horticulture e.g. export processing zone
- Support GoT to effectively engage in improved land use planning and strategic development efforts that result in long term sustainability of land and water resources.

**Program Element: 4.5.2: Agriculture Sector Capacity**
- Strengthen water use association and irrigation efficiency
- Irrigation schemes
- Improve rural roads
- Improve agronomic practices
- Promote compliance to Sanitary and Phyto-sanitary Standards
- Improved agronomic practices and sustainable land use
- Promote compliance to Sanitary and Phyto-sanitary Standards
- Credit guarantee for inputs
- Enhance irrigation efficiency
- Support collaborative research to improve agricultural productivity and competitiveness and train the next generation of researchers and professions in the agriculture and nutrition sectors. Targeted climate change adaptation research in the water management and agriculture sectors.
- Support study tours for GoT officials to expedite reforms and create enabling environment for trade and investment in agriculture

Program Area 4.6: Private Sector Competitiveness
Program Element: 4.6.1 Business Enabling Environment
Strengthen producer and business organizations
Support policy reforms
Training in business skills and governance
Program Element: 4.6.2 Private Sector Capacity
- Support value chains in maize, rice, and horticulture
- Support disease surveillance and market intelligence Upscale out-growers associations
- Credit guarantee to agriculture (in partnership with AfDB, CRDB Bank, and Pride TZ)
- Capacity building to agro-dealers and service providers in agriculture
- Improve millers efficiency and product diversification for fortified and blended nutritious products

Program Area 4.8: Environment
Program Element: 4.8.2 Clean Productive Environment
- Mitigation and adaptation to climate change
- Sustainable use of irrigation water
- Safe use of pesticides
- Promote conservation farming technologies and best practices
- Promote sustainable land use practices and protection of the environment
- Promote sustainable management of catchment forests and water basins for continue supply of clean water and irrigation water

4.0 RECOMMENDED THRESHOLD DETERMINATIONS AND MITIGATION MEASURES

This IEE draws heavily on the *Environmental Guidelines for Small Scale Activities in Africa* (EGSSAA), 2” 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 project lifecycles, 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 advance “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 USAID/Tanzania’s Agriculture and Food Security program (EG) are numerous and complex. Many EG 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 impacts (e.g., a training program in the use and application of fertilizers should also discuss procedures for minimizing their ‘off-site’ effects on water bodies and safe handling and storage to mitigate negative impacts on human health).

On the other hand, certain interventions supported by the Agriculture and Food Security program will directly or indirectly affect the environment and/or human health, or will have the potential to do so. Based on analyses conducted by the S012 team and by USAID Environmental Officers, these interventions are clustered in the following four categories:

- Micro-credit, loans, micro-finance institutions (MFIs) and micro-enterprises, loan guarantees, and development credit authority (DCA) activities;
- Agricultural productivity technologies and inputs (e.g., hybrid seeds, fertilizers, pesticides, land and water management practices, livestock and fisheries development, irrigation, new crop commodity sub-sectors and construction);
- Infrastructure (e.g. rural roads building and rehabilitation); and
- Sub-grants

Analyses of USAID/Tanzania’s Agriculture and Food Security program activities are presented in Tables 1 and 2 using the descriptions of activities presented in Section 3 of this document. Table 1 covers those activities of Program Areas/Elements that are environmentally benign. These correspond to activities Categorically Excluded from initial environmental examination in 22 CFR 216 (i) (ii), (iii), (v), (vi). Table 2 then presents the four category clusters noted above and indicates Activity group and recommended determinations. For some activities in these clusters, Negative Determinations with Conditions are recommended as they have potential for negatively affecting the environment or human health and for some; Positive Determinations are recommended because major impact on the environment may occur. Following Table 2, this IEE presents detailed descriptions of mitigating measures or ‘Conditions’ for activities under Negative Determinations with Conditions. Finally, Table 3 presents guidelines for all Agriculture and Food Security program activities that have Negative Determinations with Conditions.

The sectoral chapters of the EGSSAA are [http://www.encapafrica.org/egssaa.htm#II]:

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<td>III.1 Introduction - MSEs &amp; the</td>
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<td>III.4.6 Wet Textile Operations</td>
</tr>
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<td>III.4.7 Wood Processing and Furniture</td>
</tr>
</tbody>
</table>

The sectoral chapters of the EGSSAA are (http://www.encapafrica.org/egssaa.htm#II):
Table 1: Agriculture and Food Security Program 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), (vi) -- except to the extent the activities directly affect the environment)

| 3.1 Health                          | • Promote nutritious/fortified food for children and people living with HIV/AIDS.  
| 3.1.9 Nutrition                    | • Promote school garden to supplement vegetables in school feeding program  
| 3.3 Social economic service        | • School feeding, food for work and cash for work  
| 3.3.3 Social assistance            |

| 4.2 Trade and investment            | • Policy reforms to support private sector investment and trade, trade facilitation  
| 4.2.1 Trade and investment enabling environment | • Promote warehouse receipt system, commodity exchange.  
| 4.2.2 Trade and investment capacity | • Enhance cross-border trade surveillance with customs and bureau of statistics.  
| 4.5 Agriculture                    | • Enhance efficiency and quality in processing, milling, packing, branding, market promotion, fortification, and blending and product diversification.  
| 4.5.1 Agricultural Enabling Environment | • Analysis of agriculture policy and investment options  
| 4.5.2 Agricultural Sector Capacity | • Outreach efforts to inform public and private sector stakeholders about policy and investor opportunities to promote rural incomes and food security  
|                                 | • Monitoring trends in agricultural sector performance  
|                                 | • Capacity-building to enhance the skills of Tanzanian public sector policy analy |

| 4.6 Private Sector Competitiveness | • Organize new maize farmer groups and support existing groups to participate in the Eastern Africa Grain Council (EAGC)  
| 4.6.1 Business Enabling Environment | • Promote regional trade by building the institutional capacity of the EAGC  
| 2 Private Sector Capacity | • Support the Seed Trade Association of Tanzania that seeks to improve seed sector policies  
|                                 | • Providing technical assistance for smallholders to be certified under the European Good Agricultural Practices (EurepGAP)  
|                                 | • Training businesses that supply domestic horticulture markets to increase their revenues  
|                                 | • Facilitating the process of increasing Tanzania-US horticulture trade with local businesses  
|                                 | • Enhanced access to Business Development Services  
|                                 | • Training in Agricultural Biotechnology (MSc. & PhD)  
|                                 | • Biotechnology outreach activities  
|                                 | • Training of women groups in business management, food processing and marketing  
|                                 | • Introduce innovative financial services products and financing mechanisms/methods  
|                                 | • Build capacity of financial institutions through training  

| Making                          | III.5 Resources  
| III.6 Annexes                   |
4.8 Environment
4.8.2 Clean productive environment

- Planning and training in water catchment management,
- Planning for mitigation (e.g. measures reducing emissions for goods and services increasing use of low carbon technologies) and adaptation (e.g., drought tolerant seeds and livestock varieties, crop diversification, extension and education, water harvesting, soil and water conservation) to climate change.

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Table 2: Threshold Determinations for Each Activity Group: Negative and Positive Determinations

<table>
<thead>
<tr>
<th>Activity Group</th>
<th>Recommended Threshold Determination and 22 CFR Part 216 citation</th>
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<tbody>
<tr>
<td>Activities in Group 1: Micro credit, loans, MFIs and micro enterprises; loan guarantees, DCAs</td>
<td>A Negative Determination with Conditions recommended pursuant to 22 CFR 216.3(a)(2)(iii) for support to micro-finance institutions and MSEs; loan guarantees, DCAs</td>
</tr>
<tr>
<td>Activities in Group 2: Agricultural productivity technologies and inputs (e.g. fertilizers, pesticides, land and water management practices, irrigation, new crop commodity sub-sectors and construction),</td>
<td>Agricultural Production. A Negative Determination with Conditions recommended pursuant to 22 CFR 216.3(a)(2)(iii) for activities associated with agricultural productivity technologies and inputs (e.g., hybrid seeds, fertilizers, land and water management practices, irrigation, new crop commodity sub-sectors and construction),. Irrigation Infrastructure. Pursuant to 22 CFR216.2(d)(2) and 216.6, a Positive Determination is recommended for irrigation infrastructure activities (e.g., irrigation works rehabilitation and new development); construction of dams and other major agriculture infrastructure. They can have a major negative impact on the physical environment. Any USAID support for these activities under this program, an Environmental Impact Assessment (EIA) shall be developed before program can begin. Pest Management. A Negative Determination with Conditions is recommended pursuant to 22 CFR 216.3(a)(2)(iii) for programs involving pesticides, pest management products or technologies. This will need preparation of PERSUAPs in accordance with Agency guidance, and fulfilling all analytical elements required by 22CFR216.3(b), USAID’s Pesticide Procedures. The USAID/EA environmental staff will assist the Tanzania MEO and Activity Managers in establishing the need. New PERSUAPs will be commissioned as necessary, by the respective implementing partners, or collectively in FTF PERSUAP.</td>
</tr>
<tr>
<td>Activities in Group 3: Rural roads construction and rehabilitation</td>
<td>Pursuant to 22 CFR 216.3 (a)(2)(iii) a Negative Determination with condition is recommended for activities involving rural road construction and rehabilitation of old roads. Negative impacts on the environment may occur. For major road and related infrastructure construction, a Positive Determination is recommended, pursuant to 22 CFR216.2(d)(2) and 216.6. Any USAID support for the construction of roads under this program, an Environmental Impact Assessment shall be developed before program can begin.</td>
</tr>
</tbody>
</table>
### Activities in Group 4: Sub-grants

**Negative Determination with Conditions**, Pursuant to 22 CFR 216.3 (a)(2)(iii), a Negative Determination with condition is recommended for activities Sub-grants to business Associations, CS and private sector partners.

<table>
<thead>
<tr>
<th>Activity Group</th>
<th>Recommended Threshold Determination and 22 CFR Part 216 citation</th>
</tr>
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<tbody>
<tr>
<td>Activities in Group 4: Sub-grants</td>
<td>Negative Determination with Conditions, Pursuant to 22 CFR 216.3 (a)(2)(iii), a Negative Determination with condition is recommended for activities Sub-grants to business Associations, CS and private sector partners</td>
</tr>
</tbody>
</table>

### 4.1 Detailed Description of Mitigating Measures for Activities under Negative Determination with Conditions

#### 4.1.1 Activities in Group 1: Micro credit, loans, MFIs and micro enterprises; loan guarantees, DCAs

**Activity:** Support to micro-finance institutions and MSEs for activities involving: credit guarantee coverage; loan portfolio guarantee subsidy; micro enterprise creation; provision of micro credit to rural and under-served groups; provide in country micro-finance, micro enterprise development and business development; supporting producer associations by providing seed capital; and small grants for micro-enterprises start-ups.

**Conditions:** SO Team shall assist MFI and MSE credit and service providers to institutionalize environmental reviews of credit and service projects and individual activities. MSEs and MFIs shall receive training in the use of environment guidelines. The guidelines will illustrate how environmentally sound practices can be used to improve the effectiveness and efficiency of doing business.

Activities relating to the expansion of microfinance and or micro enterprise shall be subjected to environmental review. The Environmental Screening Form (ESF) in the *Environmental Guidelines for Small-Scale Activities in Africa* (EGSSAA) shall be tailored as needed, to assist in identifying potential environmental impacts that are likely to occur as a result of such micro enterprise activities. The ESF helps to classify such potential impacts into low risk, moderate risk and high risk categories. Mitigation measures will be identified for all moderate and high risk categories. (The SO Team shall use guidelines in USAID Bureau for Africa’s *Environmental Guidelines for Small-Scale Activities in Africa* (EGSSAA) Part III, “Guidelines for Micro and Small enterprises”). In addition, the SO team leader shall visit all such projects during implementation to ensure that they are not likely to cause any adverse environmental impacts, with a view to correcting and or initiating additional mitigation measures.

**Activity:** Facilitating financing options for producers and SMEs in maize, rice and horticulture value chains and other agriculture-linked enterprises via USAID-supported DCA.

**Conditions:** Approval of loans to finance activities described in subsections (2), (3), (6) or (7) of the DCA standard provisions will be contingent upon the submission by the Guaranteed Party of evidence sufficient to demonstrate compliance with Tanzania environmental regulations and procedures and to enable USAID to make an assessment of the environmental impact of such activities. This includes the guaranteed party submitting to USAID its proposed policies and procedures to ensure that projects financed are environmentally sound and comply with applicable laws and procedures.

- a) The Loan must not be used to finance any of the following:
  - 1) Goods or services which are to be used primarily to meet military requirements or to support police or other law enforcement activities,
  - 2) Surveillance equipment,
  - 3) Equipment, research and/or services related to involuntary sterilization or the performance of abortion as a method of family planning, or
  - 4) Activities which significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas,
b) The Loan must not be used to finance any of the following without the prior written approval of USAID:

1) Pharmaceuticals,
2) Pesticides
3) Logging equipment
4) ‘Improved’ fishing gear such as nets, boats/motors, traps, diving equipment or spear guns
5) Luxury goods (including alcoholic beverages and jewelry)
6) Establishing or expanding any enterprise that will export raw materials that are likely to be in surplus in world markets at the time such production becomes effective and that are likely to cause substantial injury to U.S. producers.
7) Activities which would result in the loss of forest lands due to livestock rearing, road construction or maintenance, colonization of forest lands or construction of dams or other water control structures,
8) Activities which are likely to have a significant adverse effect on the environment, including any of the following (to the extent such activities are likely to have a significant adverse impact on the environment):
   a. Programs of river basin development,
   b. Significant irrigation or water management projects (including dams and impoundments),
   c. Agricultural land leveling,
   d. Major drainage projects,
   e. Large scale agricultural mechanization,
   f. New lands development,
   g. Resettlement projects,
   h. Penetration road building or road improvement projects,
   i. Construction of power plants or industrial plants, or
   j. Large scale potable water and sewerage projects,
9) Activities which are likely to involve the loss of jobs in the United States due to the relocation or expansion outside of the United States of an enterprise located in the United States, or
10) Activities which the Guaranteed Party is aware are reasonably likely to contribute to the violation of internationally recognized rights of workers.

4.1.2 Activities in Group 2: Agricultural productivity technologies and inputs (e.g., hybrid seeds, fertilizers, pesticides, land and water management practices, staples and horticulture value chain development irrigation, new crop commodity sub-sectors and construction)

**Activity:** Provision and use of fertilizers

For introduction and dissemination of agricultural chemicals such as fertilizers training should be provided in product knowledge. Program activities will use best management practices for soil fertility and health, as described below (and fertilizer information sheet: attached to this IEE as Annex 3):

a) Integrated Soil Fertility Management (ISFM) – the use of both organic and inorganic sources of nutrients rather than either alone;
b) The use of legume cover crops (plus phosphorous) and green manures by fallow rotation or intercropping;
c) Agroforestry practices – in addition to soil conservation and production benefits, agroforestry transfers/cycles nutrients from within the soil profile (deeper levels to surface);
d) The use of conservation tillage rather than deep plowing (although conservation tillage can be harmful for production systems in certain regions);
e) Use farm site manures and household wastes, with or without composting; and
f) Choose crops and associated plants that have high nutrient use efficiency.

**Conditions:** Only fertilizers that are approved by both the local regulatory authority and the USEPA shall be introduced and utilized. Further, because of the environmental risks inherent in improper handling, storage, use and application, implementing partners must assure that potential users are trained in proper fertilizer handling, storage, use and application techniques.

As with any technology, however, it is recommended that fertilizers be thoughtfully employed according to best practice, promoting integrated soil fertility management, within the context of the prevailing biophysical and socio-economic conditions, as well as the desired outcomes.

**Activity:** Provision and use of pesticides

**Conditions:** USAID Activity Managers and COTRs/AOTRs and implementing partners must ensure the provisions in the PERSUAPs are being implemented and monitored and that the mitigation and reporting requirements are being met. Any new activities under these programs that involve pesticide use will require re-examination and amendments to the respective PERSUAPs covering their programs.

Any new activity involving pesticides, or new pest management products or technologies will necessitate the preparation of additional or amendment of the PERSUAPs in accordance with Agency guidance, and fulfilling all analytical elements required by 22CFR216.3(b), USAID’s Pesticide Procedures. The USAID/EA environmental staff will assist the Tanzania MEO and Activity Managers in establishing the need.

Another resource for proposed agricultural use of pesticides is EGSSAA Chapter 12– Integrated Pest Management ([http://www.encapafrica.org/EGSSAA/Word_English/ipm.doc](http://www.encapafrica.org/EGSSAA/Word_English/ipm.doc))

**Activity:** Activities associated with seeds, seed supply and planting materials

**Conditions:**
Suppliers shall:
1) Ensure appropriateness for the agroclimatic zone to which they are being introduced;
2) Avoid introducing exotic invasive species; and
3) Avoid providing or promoting GMOs.

This requires identifying and mitigating any potential direct adverse impacts on the physical environment and human health and safety (such as due to aflatoxin contamination) arising from distribution of free seeds.

In addition, the Foreign Assistance Act, Part I, Section 119 - Endangered Species - Sect. 119 (g) states “The USAID Administrator shall deny any direct or indirect assistance under this chapter for actions which significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas”.

**Activity:** Small-scale construction (e.g., market centers, cooling/processing plants)

Potential negative environmental impacts are possible with these interventions, and will depend on 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.

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 (1,000 sq meters), 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 Scale Construction chapter of USAID EGSSAA [http://www.encapafrica.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 Annex G (www.encapafrica.org/EPTM/AnnexG_EPTM_Mar2005b.pdf) of the Africa Bureau Environmental Procedures Training Manual (EPTM) (http://www.encapafrica.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 construction or rehabilitation of the facility includes road construction or rehabilitation, the conditions of 4.1.3 Activities in Group 3: roads construction and rehabilitation (see below) will apply to the project.

If construction or rehabilitation requires use of fungicides or pesticides for termite control or any other
reason, see *Provision and Use of Pesticides*, above.

**Activity:** *Land and water management, improvement in staples and horticulture value chain development*

These are small-scale agricultural activities including but not limited to crop production, drip irrigation, horticulture, rice, maize, and small-scale poultry and livestock at the household level to improve protein sources within the subsistence diet. They can adversely affect the condition and function 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.** This is a decrease in the ability of suitable land to support agricultural production, and has two primary elements - soil erosion and loss of soil fertility. As land degradation proceeds, farmers often are compelled to ‘shift cultivation’, often to more marginal cropland.

- **Soil erosion.** Improper and/or unsustainable agronomic practices such as poorly managed open-furrow agriculture, unsuitable crops, deforestation, or draining wetlands can cause soil erosion. Soil erosion is linked to losses of soil fertility and ‘mass wastage’; *i.e.*, 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 is an agent of soil erosion.

- **Reduction of soil fertility.** Soil fertility is dependent on three major nutrients (nitrogen, phosphorous and potassium), various trace elements and organic matter content. These elements can be removed by repeated cropping without fertilization, rainfall leaching, lack of a restorative fallow and removal or burning of crop residues.

- **Degradation of marginal lands** due to population pressure, lack of access to land or social equity issues. Expansion of agricultural activities onto these sub-optimal lands not only causes further degradation, but also displaces previous land uses (firewood gathering, livestock grazing, 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. The result is a loss of soil depth and fertility, loss of biodiversity, reduced resilience of ecosystems and degradation to early successional environments.

- **Drainage and degradation of wetlands and riparian areas.** Wetlands provide numerous 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 bodies, causing environmental harm and adversely affecting
human health. Animal manures transported from fields into water bodies through rainfall, runoff or irrigation can pollute domestic 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 decrease their utility for other uses such as fishing, aquaculture, recreation and tourism.

- **Pollution and disease from agro-vet waste.** Improper handling, storage and disposal of animal healthcare waste can spread human and animal disease. If waste is not treated in a way that destroys pathogenic organisms - viruses, bacteria, parasites or fungi – it remains a source of further infection. Disease may also spread via punctures and other breaks in the skin, mucous membranes in the mouth or by being inhaled, swallowed, or transmitted by a vector.

Pursuant to 22 CFR 216.2 (d)(2) and 216.6, a **Positive Determination** is recommended for irrigation infrastructure activities (e.g., irrigation works rehabilitation and new development); to ensure that optimal practices are followed. Pertinent chapters of the USAID EGSSA are the following: Chapter 1- Agriculture: Soil and Water Resources, including Irrigation ([http://www.encapafrica.org/EGSSAA/Word_English/agriculture.doc](http://www.encapafrica.org/EGSSAA/Word_English/agriculture.doc));

**Conditions:**

Improvements in land and water management techniques need to be reviewed to ensure they do not cause destruction or degradation of natural habitat, including deforestation, desertification and drainage of wetlands; lead to loss of biodiversity; do not lead to the introduction of exotic and non-native animals and plants; lead to erosion and loss of soil fertility, siltation of water bodies or reduction in water quality; or spread disease.

**4.1.3 Activities in Group 3: Rural roads construction and rehabilitation**

**Activity: Constructing rural roads and rehabilitation**

Pursuant to 22 CFR 216.3 (a)(2)(iii) a **Negative Determination with conditions** is recommended for activities involving minor rural road construction and rehabilitation of old roads. These activities have potential negative impacts on the environment.

**Conditions:** Rural roads development and improvement should be conducted in a manner consistent with the good planning, design and implementation practices described in **EGSSAA Chapter 14: Rural roads** ([http://www.encapafrica.org/EGSSAA/Word_English/roads.doc](http://www.encapafrica.org/EGSSAA/Word_English/roads.doc)).

An illustrative list of environmentally sound principles for rural roads development and improvement activities shall be adopted, they include:
- Roads that cross hilly or steep terrain should follow contours and have enough side drainage to minimize soil erosion.
- Plant vegetation (non-invasive) to stabilize slopes
- Maintain good road maintenance practices such as clearing drainage structures and restoring camber to minimize damage that the road might cause.
- Abandoned roads should be blocked to prevent their continued and development of gully erosion. or “ripped” to encourage re-vegetation.
- Practice proper management of fuels (petrol and diesel) and lubricants (oil and grease) from equipment to avoid contamination of water (particularly at depots ad fueling areas).
- Avoid routing roads though wetlands and in sensitive ecosystems and biodiversity areas (with threatened/and or endangered species).
Minimize the amount of clearing, clear small areas for active work one at a time.
- Training of maintenance personnel to maintain the roadway in a manner that prevents erosion and damage to water and natural resources

For major road and related infrastructure construction, a **Positive Determination** is recommended, pursuant to 22 CFR216.2(d)(2) and 216.6. Any USAID support for the construction of roads under this program, an **Environmental Impact Assessment** shall be developed and approved before program can begin.

### 4.1.4 Activities in Group 4: Sub-grants

**Activity:** Sub-grants

**Conditions:** Any sub-grants to support this program’s activities must incorporate provisions that the activities to be undertaken will comply with the environmental determinations and recommendations of this IEE. This includes assurance that the activities conducted with USAID funds fit within those described in the approved IEE or IEE amendment and that any mitigating measures required for those activities be followed. In addition, environmental screening will be required.

**Environmental Screening Process**
Implementing partners will take into consideration potential environmental impacts during the design and implementation process to achieve an environmentally-sound project design and to promote program sustainability. They will screen proposed activities according to the *Africa Bureau Environmental Report Form Review Process*, which is described in the *Bureau’s Environmental Procedures Training Manual*, “Annex G: Umbrella IEEs and Subgrant Environmental Screening,” as well as in the *Africa Bureau Environmental Guidelines, Part III*. Both can be found at [http://www.encafrica.org/resources.htm](http://www.encafrica.org/resources.htm) (Attached to this IEE as Annex 1). As described there, the screening categories include the following: **Very low risk** - activities that would normally qualify for a categorical exclusion under Reg. 216; **Moderate risk or unknown risk** - activities that would normally qualify for a negative determination under Reg. 216; **High risk** - activities that have a clear potential for undesirable environmental impacts and typically under Reg. 216 require an Environmental Assessment; and **High risk – typically not funded** - activities that either USAID cannot fund or for which specific findings must be made in an Environmental Assessment prior to funding.

The USAID/Tanzania Agriculture and Food Security Team shall be responsible for, first, clearing the implementing partner’s category determination of sub-grant activities. Classifications of **Moderate or unknown risk or higher** will be referred to the Mission Environmental Officer along with any required Environmental Review Reports (ERRs). All classifications of **High risk** and their ERRs must be approved by the Bureau Environmental Officer (BEO).

When ERRs are necessary, implementing partners will observe recommendations in the *Africa Bureau-EGSSAA* for relevant sectors when developing mitigation actions and monitoring plans. Once the ERRs are approved, project implementers should ensure mitigation measures and monitoring procedures described therein are in place as they will be considered requirements.
**Table 3. Requirements that apply to all activities falling under the threshold determination of “Negative Determination with Conditions”**

<p>| | |</p>
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<tbody>
<tr>
<td>1</td>
<td>The responsibility for implementing activities in accordance with the findings and</td>
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<td>conditions of this IEE must be incorporated into all contracts and grants that serve</td>
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<td>to implement activities covered under this IEE</td>
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<tr>
<td>2</td>
<td>Bi-lateral implementing partners under USAID/Tanzania’s Agriculture and Food</td>
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<td></td>
<td>Security portfolio will complete an annual Environmental Mitigation and Monitoring</td>
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<td></td>
<td>Report (EMMR) of all activities, using the guidance and forms in Section 5 and as</td>
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<td></td>
<td>explained further under “Monitoring, Compliance Assurance and Reporting”, below.</td>
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<td></td>
<td>Provision for completing EMMRs in October of each year should be a part of annual</td>
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<td></td>
<td>work plans.</td>
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<td>USAID/Tanzania CO/AOTRs, the MEO will work with the USAID/EA REA and implementing</td>
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<td>partners to review the continued validity and operation of provisions under the</td>
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<td>respective PERSUAPs during CY2009, and any needed amendment or development of new</td>
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<td>PERUSAPs will be undertaken and approved by the BEO</td>
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<td>3</td>
<td>Contracting and Agreement Officer Technical Representatives (CO/AOTRs) in USAID/</td>
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<td>Tanzania’s Agriculture and Food Security program will undertake field visits and</td>
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<td>consultations with implementing partners to jointly assess the environmental impacts</td>
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<td></td>
<td>of ongoing activities, and the effectiveness of associated mitigation and monitoring</td>
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<td>plans.</td>
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<td>4</td>
<td>Organizations receiving USAID/Tanzania funds and transferring them through grants or</td>
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<td>other mechanisms to other organizations must incorporate provisions stipulating:</td>
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<td></td>
<td>a) the completion of annual EMMRs, and</td>
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<td>b) that activities to be undertaken will be within the scope of the environmental</td>
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<td></td>
<td>determinations and recommendations of this IEE.</td>
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<tr>
<td>5</td>
<td>USAID/Tanzania will ensure that implementing organizations have sufficient capacity</td>
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<td></td>
<td>to complete the environmental screening process and to implement monitoring and</td>
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<td></td>
<td>mitigation measures.</td>
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<td>6</td>
<td>For activities that are not funded by USAID/Tanzania, but are an identifiable part</td>
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<td>of an Agriculture and Private Enterprise program activity (for example if another</td>
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<td></td>
<td>source of funding is supporting agricultural activities), the implementing partner</td>
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<td>must assure that, at a minimum, the equivalent USAID standards for mitigation, as</td>
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<td>presented in Section 5, are followed.</td>
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<tr>
<td>7</td>
<td>Adherence to applicable GOT environmental laws and policies</td>
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</table>

**5.0 Monitoring, Compliance Assurance and Reporting**

This IEE is prepared and approved at the Strategic Objective level, and all USAID/Tanzania programs funded under the Feed the Future program fall under its environmental threshold determinations. ADS 204.5.4 requires USAID/Tanzania 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.

The USAID/Tanzania Agriculture and Food Security Team 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 this 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 Agriculture and Food Security Team or the program’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 1 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/Tanzania Agriculture and Food Security 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/Tanzania under the bi-lateral award. The prime USAID/Tanzania 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 CO/AOTR 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/Tanzania Agriculture and Food Security 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. In these cases, compliance with ‘Conditions’ and mitigation will be undertaken as described in Section 4.1 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.
Annex 1.

ENVIRONMENTAL MONITORING AND MITIGATION REPORT (EMMR)

EMMR Part 1 of 3: Environmental Verification Form

USAID/Tanzania Award Name: ___________________________

Name of Prime Implementing Organization: _____________________________

Name of Sub-awardee Organization (if this EMMR is for a sub):
________________________________________

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: ____________

Date of Previous EMMR for this organization: _________________  (if any)

Indicate which activities your organization is implementing under EG funding.

<table>
<thead>
<tr>
<th>Activity Group</th>
<th>Group Description</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technical assistance, training, training modules development, capacity building, workshops, media events, radio programs, creating awareness, organizational strengthening, civic education, policy reforms, legal and social services, and development of business plans and strategies</td>
<td></td>
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<td>2</td>
<td>Micro credit, loans, MFIs and micro enterprises; loan guarantees, DCAs</td>
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<tr>
<td>3</td>
<td>Biotechnology</td>
<td></td>
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<tr>
<td>4</td>
<td>Fertilizers, pesticides, new agricultural productivity technologies, planting materials, seeds and construction</td>
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<td></td>
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<tr>
<td>5</td>
<td>Water, Sanitation and Hygiene Activities</td>
<td></td>
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<tr>
<td>6</td>
<td>Sub-grants</td>
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<tr>
<td>7</td>
<td>Other activities that are not covered by the above categories</td>
<td></td>
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</tbody>
</table>
EMMR Part 2 of 3: Mitigation Plan

<table>
<thead>
<tr>
<th>Category of Activity from Section 4 of EG IEE</th>
<th>Describe specific environmental threats of your organization’s activities (based on analysis in Section 4 of EG IEE)</th>
<th>Description of Mitigation Measures for these activities as required in Section 4 of EG IEE</th>
<th>Who is responsible for monitoring</th>
<th>Monitoring Indicator</th>
<th>Monitoring Method</th>
<th>Frequency of Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Education, technical assistance, training, etc.</td>
<td>No environmental impacts anticipated as a result of these activities.</td>
<td>Education, technical assistance and training about activities that inherently affect the environment includes discussion of prevention and mitigation of potential negative environmental effects.</td>
<td></td>
<td>Discussion of environmental impact included in education, technical assistance, training and other materials</td>
<td>Review of materials</td>
<td></td>
</tr>
<tr>
<td>2. Micro credit, loans, MFIs and micro enterprises; loan guarantees, DCAs</td>
<td>The Mission shall ensure the Guaranteed Party or Parties have environmental screening system sufficient to demonstrate compliance with local environmental laws and to enable USAID to make an assessment of the environmental impact of such activities and shall submit to USAID their proposed policies and procedures to assure that the projects financed are environmentally sound and comply with applicable laws and procedures.</td>
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<td>3. New agricultural productivity technologies, materials improvement, construction activities to be designed.</td>
<td>For Pesticides (incl. “natural” or botanical products such as rotenone), USAID Pesticide Procedures must be adhered to, and a PERSUAP or Pesticide IEE prepared and approved prior to any purchase, handling or use, and the Safer Use Action Plan should be implemented. The “legacy” PERSUAPs in Horticulture, Rice and Maize will be reviewed, amended and updated as required, within the calendar year 2010, If fertilizers are subject to approval by local regulatory authorities, then only those fertilizer products that are approved by the appropriate local authority may be used. (USEPA does not register or otherwise approve fertilizers as it does pesticides.) Further, because of the environmental risks inherent in improper handling, storage, use and application, implementing partners must assure that potential users are trained in</td>
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</tbody>
</table>
**Category of Activity from Section 4 of EG IEE** | **Describe specific environmental threats of your organization’s activities (based on analysis in Section 4 of EG IEE)** | **Description of Mitigation Measures for these activities as required in Section 4 of EG IEE** | **Who is responsible for monitoring** | **Monitoring Indicator** | **Monitoring Method** | **Frequency of Monitoring**
---|---|---|---|---|---|---

**4. Road construction and rehabilitation**

| | Environmental Assessment shall be developed and scoping process initiated which would lead to a scoping statement. All road construction and rehabilitation should be conducted in a manner consistent with the good design and implementation practices described in EGSSAA, Chapter 14: Rural roads (http://www.encapafrica.org/EGSSAA/Word_English/roads.doc). For Program Area Team Grantee/Contractor | Environmental Assessment and Scoping Statement | Amended IEE approved | | | |

- Proper handling, storage, use and application techniques.
  - Introductive of non-native seeds carries a potential risk of introducing invasive species.
  - Suppliers shall: 1) ensure appropriateness for the agroclimatic zone to which they are being introduced; 2) avoid introducing exotic invasive species; and 3) avoid providing or promoting genetically modified organisms (GMOs). This requires identifying and mitigating any potential direct adverse impacts on the physical environment and human health and safety (such as due to aflatoxin contamination) arising from distribution of free seeds.
  - Non-native plants will not be introduced into protected areas.
  - For small-scale construction (10,000 sq ft / 1,000 sq meters), follow guidance in (http://www.encapafrica.org/EGSSAA/Word_English/construction.doc).
  - Construction will not begin until such a review is completed and approved the Mission Environmental Officer.
  - Any activities dealing with land and water management improvements must ensure that best practices are followed, such as those presented in Chs. 1, 6, 11, 12 available at - USAID Africa Bureau's Environmental Guidelines for Small-Scale Activities in Africa.
<table>
<thead>
<tr>
<th>Category of Activity from Section 4 of EG IEE</th>
<th>Describe specific environmental threats of your organization’s activities (based on analysis in Section 4 of EG IEE)</th>
<th>Description of Mitigation Measures for these activities as required in Section 4 of EG IEE</th>
<th>Who is responsible for monitoring</th>
<th>Monitoring Indicator</th>
<th>Monitoring Method</th>
<th>Frequency of Monitoring</th>
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<td>example i) construction of roads along contours and with enough side drainage will minimize soil erosion. ii) Blocking abandoned roads will prevent development of gully erosion and ripping will encourage vegetation growth. Any USAID supported activity dealing with road construction and rehabilitation must ensure the best practices are followed such as those presented in Chapter 14 Rural roads (<a href="http://www.encapafrika.org/EGSSAA/Word_English/roads.doc">http://www.encapafrika.org/EGSSAA/Word_English/roads.doc</a>)</td>
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</table>

5. Sub-grants

|                                                                 | A Negative Determination with Conditions is recommended for all sub-grant programs because sub-grantees may use funds for activities that have a direct effect on the environment or human health. All sub-grant programs will include use of the USAID/ Africa Bureau Environmental Screening Form in their sub-grant procedures. |                                  |                    |                    |                    |                        |

EMMR part 3 of 3: Reporting form

<table>
<thead>
<tr>
<th>List each Mitigation Measure from column 3 in the EMMR Mitigation Plan (EMMR Part 2 of 3)</th>
<th>Status of Mitigative Measures</th>
<th>List any outstanding issues relating to required conditions</th>
<th>Remarks</th>
</tr>
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</table>
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 EG IEE:

__________________________  _________________
Signature                  Date

__________________________
Print Name

__________________________
Organization

BELOW THIS LINE FOR USAID USE ONLY

USAID/Tanzania Clearance of EMMR:

Contracting Officer’s / Agreement Officer’s Technical Representative: _________________
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 2: Environmental Screening Form for New Activities Proposed under USAID/Tanzania EG Feed the Future Initiative

Any bi-lateral Implementing Partner proposing an activity which is not covered by the existing USAID/Tanzania EG 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 USAID Administrator after, 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 EG CO/AOTR and approved by the USAID/Tanzania 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 EG 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**
(activity with low potential for adverse biophysical or health impacts including §216.2(c)(1)) | **High-risk activities**
(activity with high potential for adverse biophysical or health impacts including §216.2(d)(1)) |
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<tbody>
<tr>
<td><strong>Provision of education, technical assistance, or training.</strong> (Note that activities directly affecting the environment do not qualify.)</td>
<td><strong>Substantial piped water supply and sewage construction</strong></td>
</tr>
<tr>
<td><strong>Community awareness</strong> initiatives</td>
<td><strong>Large-scale borehole or water point construction</strong></td>
</tr>
<tr>
<td><strong>Technical studies and analyses</strong> and other information generation activities not involving intrusive sampling of endangered species or critical habitats.</td>
<td><strong>Large-scale irrigation</strong></td>
</tr>
<tr>
<td><strong>Document of information transfers</strong></td>
<td><strong>Large-scale water management structures such as dams and impoundments</strong></td>
</tr>
<tr>
<td><strong>Rehabilitation of water points</strong> 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.</td>
<td><strong>Drainage of wetlands</strong> or other permanently flooded areas</td>
</tr>
<tr>
<td>NOTE: USAID guidance on potable water requires water quality testing for arsenic, coliform, nitrates, and nitrites.</td>
<td><strong>Large-scale agricultural mechanization</strong></td>
</tr>
<tr>
<td><strong>Small-scale construction.</strong> Construction or repair of facilities if total surf area to be distributed is under 10,000 sq. ft. (approx. 1,000 sq. m) and without protected or other sensitive environmental areas could be affected.</td>
<td><strong>Light industrial plant production or processing</strong> (e.g., agro-industrial processing of forest products)</td>
</tr>
<tr>
<td><strong>Credit or financing.</strong> Support for credit arrangements (when no biophysical environmental impact can be reasonably expected).</td>
<td><strong>High-risk and typically not funded by USAID:</strong></td>
</tr>
<tr>
<td><strong>Capacity for development.</strong> Studies or programs intended to develop the capability of recipients to engage in development planning. (Does NOT include activities directly affecting the environment)</td>
<td><strong>Actions affecting protected areas and species.</strong> Actions determined likely to significantly degrade protected areas, such as introduction of exotic plants or animals</td>
</tr>
<tr>
<td><strong>Title II Activities.</strong> Food for development programs under Title III of P.L. 480, when no on-the-ground biophysical interventions are likely</td>
<td>Actions determined likely to jeopardize threatened &amp; endangered species or adversely modify their habitat (esp. wetlands, tropical forests)</td>
</tr>
<tr>
<td><strong>Small-scale Natural Resource Management activities</strong> for which the answer to ALL SUPPLEMENTAL SCREENING QUESTIONS (see Natural Resources supplement) is “NO.”</td>
<td>Activities in forests, including:</td>
</tr>
<tr>
<td></td>
<td>- <strong>Conversion of forest lands</strong> to rearing of livestock</td>
</tr>
<tr>
<td></td>
<td>- <strong>Construction of dams</strong> or other water control structures that flood relatively degraded forest lands</td>
</tr>
</tbody>
</table>

(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.

<table>
<thead>
<tr>
<th>Illustrative examples of moderate-risk activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
<tr>
<td><strong>Medium-scale construction.</strong> 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.</td>
</tr>
<tr>
<td><strong>Water provision/storage.</strong> 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”)</td>
</tr>
<tr>
<td><strong>NOTE:</strong> USAID guidance on water quality requires testing for arsenic, nitrates, and coliform bacteria</td>
</tr>
<tr>
<td><strong>Nutrition, health care or family planning,</strong> 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.</td>
</tr>
<tr>
<td><strong>Institutional support grants to NGOs/PVOs</strong> when the activities of the organizations are known and may reasonably have adverse environmental impact.</td>
</tr>
<tr>
<td><strong>Sampling.</strong> Technical studies and analyses or similar activities that could involve intrusive sampling of endangered species or critical habitats (includes aerial sampling).</td>
</tr>
</tbody>
</table>

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 or 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, rational, 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, inducted 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:

a. 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).

b. 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.
c. **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 CO/AOTRs 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/Tanzania EG activities

A. Applicant Information

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

B. Activities, screening results, and recommended determination

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

* These screening results require completion of an Environmental Review Report
C. **Summary of recommended determinations** (check ALL that apply)

<table>
<thead>
<tr>
<th>The proposal contains…</th>
<th>(equivalent Regulation 216 terminology)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Very low risk activities</td>
<td>Categorical exclusion(s)</td>
</tr>
<tr>
<td>☐ After environmental review, activities determined to have <strong>no significant adverse impacts</strong>*</td>
<td>Negative determination(s)</td>
</tr>
<tr>
<td>☐ After environmental review, activities determined to have <strong>no significant adverse impacts, given specified mitigation and monitoring</strong>*</td>
<td>Negative determination(s) with conditions*</td>
</tr>
<tr>
<td>☐ After environmental review, activities determined to have <strong>significant adverse impacts</strong>*</td>
<td>Positive determination(s)*</td>
</tr>
</tbody>
</table>

* 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.
### Clearance Record

<table>
<thead>
<tr>
<th>USAID/Tanzania EG CO/AOTR (signature)</th>
<th>(print name)</th>
<th>(date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Clearance given</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Clearance denied</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USAID/Tanzania MEO (signature)</th>
<th>(print name)</th>
<th>(date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Clearance given</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Clearance denied</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USAID REA* (print name) (signature)</th>
<th>(date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Clearance given</td>
<td></td>
</tr>
<tr>
<td>□ Clearance denied</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USAID BEO* (print name) (signature)</th>
<th>(date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Clearance given</td>
<td></td>
</tr>
<tr>
<td>□ Clearance denied</td>
<td></td>
</tr>
</tbody>
</table>

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

Background

Low soil fertility is a problem throughout most of Sub-Saharan Africa (SSA). Moreover, the drastic reduction in fallow periods and the almost continuous cropping without soil fertility restoration has depleted the nutrient base of most soils. By the mid-late 1990s, all SSA countries were demonstrating a negative annual nutrient balance. Countries that have the highest nutrient loss rates are the ones where fertilizer use is low and soil erosion is high. These areas include the East African highlands and a number of countries in West Africa.

Low soil fertility is also a driving force behind the conversion of natural areas for agricultural extension. It is generally accepted that agricultural intensification is the only viable means to conserve key natural areas while increasing food security for the continents growing population and generating economic growth through improved agricultural productivity. Land degradation undermines the ability of countries to move in this direction, and the loss of soil nutrients is the most important contributing factor to the land degradation process. The use of inorganic fertilizers is a critical part of the strategy to stop land degradation, restore soil fertility and better manage the soil resources that are fundamental for sustainable agricultural and economic development.

Fertilizers and USAID Environmental Procedures (22 CFR 216) –

Fertilizers are frequently lumped together with pesticides under the generic heading of “agro- or agrichemicals.” From an environmental compliance perspective (22 CFR 216), as well as from a field-level implementation point of view, this is inappropriate, because it implies that fertilizers require the same level of scrutiny reserved for pesticides. Whereas pesticides are subject to clearly defined environmental review procedures, and an approval process to promote safer use and integrated pest management, such procedures do not apply to fertilizers (procurement procedures do apply to bulk purchase). As with any technology, however, it is recommended that fertilizers be thoughtfully employed according to best practice, promoting integrated soil fertility management, within the context of the prevailing biophysical and socio-economic conditions, as well as the desired outcomes. This fact sheet was developed to assist in that regard.

Importance of Water Management to Nutrient Uptake –

Proper water management is important for maximizing crop use of nutrients. About 97% of crop nutrient uptake is from soil solution (water-soluble nutrients), which makes water by far the most important nutrient or fertilizer delivery medium. This also means that, for the most part, nutrient mobility is directly linked to water movement. In sandy soils, nutrients move more quickly through the root zone and soil profile than in other soil
types, and excessive water application (or heavy rainfall) can lead to nutrient loss through leaching. Run-off is most serious on loamy-sands or sandy loams that often have a strong surface crust formation. In heavier soils (clays), if nutrients are not adequately incorporated into the soil, the chances for surface runoff in the event of heavy rains or over-irrigation are increased. Sound water management is especially important in rainfed conditions (common throughout SSA). Overall, good water management leads to a more efficient use of fertilizers and increased nutrient uptake and vice versa.

General Soil Fertility Trends in Africa --

- Farmers who have taken measures to conserve moisture or increase soil organic matter are more likely to use inorganic fertilizer. When farmers in some areas have capital, they often invest first in increasing moisture retention and/or increasing soil organic matter and secondly in inorganic fertilizer.
- Farmers increase their use of fertilizer when investing more money in fertilizer is seen to be the best available option. This increase may result from changes in any of the following: fertilizer price, crop price, fertilizer availability, water availability, seed availability, knowledge about fertilizer use, or cropping pattern.
- In West Africa, integrated soil fertility management is progressively adopted. It concerns the combined use of soil amendments and inorganic fertilizer, leading in time to improved soil fertility and increased fertilizer use efficiency and profitability. The nutrient losses to the environment are decreasing.
- Given past and current use rates, USAID’s fertilizer-related activities in Africa are unlikely to cause environmental problems.

Fertilizer Application guidelines –

- Before applying fertilizers, obtain an assessment of soil conditions (fertility).
- Indiscriminate use of chemical fertilizers should be avoided.
- Different kinds of fertilizers are required in order to maintain a given level of soil fertility. This depends on site-specific factors, including the soil type, the nutrient requirement of the crop and the various sources of available nutrients. Nitrogen and Phosphorous are the most important nutrients lacking in SSA soils.
- Fertilizer application has to be considered in the context of the overall farming system. This includes the use of organic manure and residues, soil cultivation and crop rotation and water harvesting. Collectively, these factors influence the efficiency of nutrient use.
- When fertilizers are used, it is very important to apply the correct amount for the given situation. The challenge to the farmer is to match as closely as possible the input of nutrients to the nutrient uptake of the crop, thereby minimizing losses. Over fertilization is both costly (wasteful) and potentially harmful to the environment. To apply the correct amount, the farmer has to define his production goal.
Potential negative environmental effects of fertilizers –

Excessive application of nutrients over time can cause pollution. Such losses may occur when nutrients run off the land caused by heavy rainfall, are leached through the soil, beyond the root zone, eventually reaching the groundwater, or escape into the atmosphere as volatile gases.

Aspects of environmental impact can be illustrated as follows:

*Nitrogen fertilizers:* Inorganic nitrogen fertilizers are readily converted by soil organisms to nitrate in the soil. The nitrogen in soil organic matter and organic fertilizers becomes available more slowly. Nitrates may be readily leached if not used by crops or other vegetation. Leaching is particularly likely in sandy soils following heavy rainfall. Leached nitrates may contaminate underground water. This is of concern if the water is to be used for human or livestock consumption, as high concentrations of nitrate may affect health.

Nitrogen fertilizers can also accelerate the natural process of soil acidification. Some fertilizers (e.g. anhydrous ammonia and urea) may initially raise the soil pH at the site of application but in the long term acidify the soils. This occurs when ammonium is converted to nitrate. Acid produced in the nitrification process is used if the nitrate is taken up by plants or soil organisms, but if the nitrate is leached beyond the root zone, acidification occurs. Soil acidification reduces the availability of the trace element molybdenum, fosters the development of aluminum, iron and manganese toxicity and increases nodulation failure in legumes. Lime may be required where acidity is a problem (obtained from naturally occurring calcium carbonate) or the use of acid tolerant plant species can be considered. An illustrative list of crops with acid tolerant varieties include: rice, cassava, mango, cashew, citrus, pineapple and cowpeas.

*Phosphorus fertilizers:* Excess amounts of phosphorus have been associated with algal blooms and the eutrophication of lakes and waterways. In most waters, phosphorous functions as a growth limiting factor because it is usually present in very low concentrations. Algae only require small amounts of phosphorus to live. Excessive phosphorus over-stimulates the growth of algae, which could deplete the water of the dissolved oxygen that is vital to other aquatic life. Phosphorus is relatively immobile in the soil, so conservation and cultural practices which reduce soil erosion can significantly reduce phosphorus inputs into water bodies and the water table.

Phosphorus fertilizers contain various impurities from the phosphate rock and acid used in manufacturing the fertilizer. Increases in cadmium are the greatest concern as its compounds are toxic to human beings. Cadmium increases are most noticeable in certain
crops e.g. potatoes and leafy vegetables (lettuce and spinach) and in the organs (kidneys and liver) of animals. Almost all phosphate fertilizers contain traces of cadmium, and the concentration of cadmium varies considerably from source to source. At this time, there are efforts underway in West Africa to develop viable processes to remove cadmium from phosphate rock. Exports of rock phosphate represented a vital source of revenue for a number of developing countries in Africa.

**Fertilizer Effects on Soil Biology:** Good soil consists of 93% mineral and 7% bio-organic substances. The bio-organic parts are humus (85%), roots (10%) and soil organisms (5%). Most of the soil organisms are decomposers (bacteria and fungi), which are responsible for nutrient retention in soil. In order for nutrients to become available they must be mineralized by the interaction of decomposers and organisms that feed on the decomposers (protozoa, nematodes, microarthropods and earthworms). Plant growth is dependent on microbial nutrient immobilization. When the number of decomposers declines in soils, more nutrients are lost into the ground and surface water. Heavy treatments of chemical fertilizers can kill decomposers and other soil organisms, which will lead to a reduction in nutrient retention and possible surface and ground water contamination.

**A summary of best management practices for soil fertility and health** —
- Practice Integrated Soil Fertility Management (ISFM) – the use of both organic and inorganic sources of nutrients rather than either alone;
- Use of legume cover crops (plus phosphorous) and green manures by fallow rotation or intercropping;
- Promote agro forestry practices – in addition to soil conservation and production benefits, agro forestry transfers/cycles nutrients from within the soil profile (deeper levels to surface);
- Use conservation tillage rather than deep plowing (although conservation tillage can be harmful for production systems in certain regions^2);
- Use farm site manures and household wastes, with or without composting;
- Choose crops and associated plants that have high nutrient use efficiency.

**Notes:**
Additional Reading: