

## **Annex D: Examples of Categorical Exclusions (CEs) and Initial Environmental Examinations (IEEs)**

This Annex presents examples of approved CEs and IEEs from the Africa Bureau, and two draft IEEs of Title II activities. The Title II IEEs use the recommended BDCHA/FFP environmental documentation format. Each Bureau tries to maintain reasonable internal consistency in its IEE format. However, while formats of different Bureaus are similar, they are not necessarily identical.

### ***D.1 Categorical Exclusion—CARE/India Integrated Nutrition and Health Program, August 1998***

### ***D.2 Categorical Exclusion—Save the Children/Nicaragua: Targeted Food Assistance to Malnourished and At-Risk Mothers and Children***

### ***D.3 “Classical” or Standard IEE—Africare/Mozambique: Manica Oil Seed Food Security Initiative (FY 99 PAA)***

Includes both Categorical Exclusion and IEE Negative Determination. Includes a pesticide section.

### ***D.4 “Classical” IEE with Multiple Activities—CARE/Honduras: Sustainable Food Security for the Most Vulnerable in Honduras***

Facesheet only. Covers multiple activities with a positive determination for Roads.

### ***D.5 “Umbrella” IEE—CRS/Kenya: FY97–FY00 DAP***

### ***D.6 “Hybrid IEE”—Africare: Uganda Food Security Initiative DAP/PAA FY 98***

Includes Categorical Exclusion, elements of a “standard” or classic IEE with negative determination, and an umbrella component for community road improvements. (Note: Format does not follow the EPTM model.)



**Annex D.1**

**TITLE II ENVIRONMENTAL COMPLIANCE  
FACESHEET<sup>17</sup>**

**Title of DAP/PAA Activity:** PL 480 Title II CARE/India

**CS name/Country/Region:** CARE/India

**Funding Period:** FY 99 - FY 04

**Resource Levels:** Commodities (dollar equivalent, incl. monetization): \$343.4 million\*  
(Title II commodities inclusive of Monetization and Ocean Freight)

(\* subject to yearly approvals)

Total metric tonnage request: \_\_\_\_\_

202(e) grant: \$2.5 million  
(Section 202 (e) grant fund)

**Statement Prepared by:** Name Richard L. Edwards Date \_\_\_\_\_  
Title Deputy Director, USAID/India Office  
of Environment, Energy and Enterprise

**IEE Amendment (Y/N)?** N **Date of Original IEE:** \_\_\_\_\_

**Environmental Media and/or Human Health Potentially Impacted** (check all that apply):  
*air* \_\_\_ *water* \_\_\_ *land* \_\_\_ *biodiversity* (specify) \_\_\_\_\_ *human health* X *other* \_\_\_ *none* \_\_\_\_\_

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

X 1. *Categorical Exclusion(s)*

\_\_\_ 2. *Initial Environmental Examination:*

\_\_\_ *Negative Determination:* no significant adverse effects expected regarding the  
proposed activities, which are well defined over life of DAP/PAA. IEE prepared:  
\_\_\_ without conditions (no special mitigation measures needed; normal good practices and  
engineering will be used)

\_\_\_ with conditions (special mitigation measures specified to prevent unintended  
impact)

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<sup>17</sup> The original format has been readjusted to more closely follow that used in the  
Environmental Documentation Manual

Annex D.1

\_\_\_\_\_ *Negative Determination:* no significant adverse effects expected, but multiple sites and sub-activities are involved that are not yet fully defined or designed. "Umbrella IEE" prepared [go to Annex B and Annex F for examples]  
\_\_\_\_\_ conditions agreed to regarding an appropriate process of environmental capacity building and screening, mitigation and monitoring.

\_\_\_\_\_ *Positive Determination:* IEE confirms potential for significant adverse effect of one or more activities. Appropriate environmental review needed/conducted.  
\_\_\_\_\_ EA to be / being / has been (circle one) conducted. Note that the activities affected cannot go forward until the EA is approved.

\_\_\_\_\_ *Deferral:* one or more elements not yet sufficiently defined to perform environmental analysis; activities will not be implemented until amended IEE is approved. Briefly describe the nature of the deferred activities: \_\_\_\_\_

**Summary of Findings:**

The Integrated Nutrition and Health Program (NHP) of CARE - India aims to improve the nutritional and health status of women and children, especially pregnant women, lactating mothers and children under 2 years of age. INHP works with government and non-government counterparts in this endeavor. CARE-India focuses on activities with the greatest potential to reduce malnutrition and mortality.

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

**Clearance:**

Mission Director: \_\_\_\_\_ LEM \_\_\_\_\_ Date: \_\_\_\_\_  
Linda E. Morse

Food For Peace Director: \_\_\_\_\_ Jeane Markuras, Acting \_\_\_\_\_ Date: \_\_\_\_\_ 8/21/98  
Wm Thomas Oliver

**Concurrence:**

Bureau Environmental Officer: \_\_\_\_\_ JPDR \_\_\_\_\_ Date: \_\_\_\_\_ 8/21/98  
(BHR)

Approved: \_\_\_\_\_  X

Disapproved: \_\_\_\_\_

**Optional Clearances:**

FFP Officer: \_\_\_\_\_ Date: \_\_\_\_\_

Mission Food Aid Manager: \_\_\_\_\_ Date: \_\_\_\_\_

Mission Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_

Regional Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_

Geographic Bureau Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_

General Counsel: \_\_\_\_\_ Date: \_\_\_\_\_



## REQUEST FOR A CATEGORICAL EXCLUSION

### INDIA - INTEGRATED NUTRITION & HEALTH PROGRAM

August 1998

#### 1. Background and Activity Description

The Integrated Nutrition and Health Program (NHP) of CARE - India aims to improve the nutritional and health status of women and children, especially pregnant women, lactating mothers and children under 2 years of age. INHP works with government and non-government counterparts in this endeavor. CARE-India focuses on activities with the greatest potential to reduce malnutrition and mortality.

The program is implemented in 7 states - Andhra Pradesh, Bihar, Madhya Pradesh, Orissa, Rajasthan and West Bengal, spread over 912 blocks and 114,273 Anganwadi Centers (AWCs). This program reaches 6.6 million women (who are pregnant, a nursing and mothers of children under 24 months of age) and children up to 6 years of age. In addition to the program administration and monitoring/evaluation related costs, other activities funded through this program are supplementary feeding conducted under Title II (Public Law 480), provision of communication aids/teaching aids and capacity building of Government, non-government counterparts, Community Based Organizations, community members and leaders to enable women to learn and practice positive nutrition and health practices, thus empowering the community to be responsible for their own health.

#### 2. Justification for Categorical Exclusion Request

The INHP program consists exclusively of technical assistance, a capacity building, supplementary feeding under Title II (Public Law 480) and program administration cost. These activities are clearly within the Class of programs listed in paragraph (c) (1), "Categorical Exclusions" of Sector 216.2, "Applicability of Procedures" of Title 22 CFR Part 216, "AID Environmental Procedures."

Pursuant to 22 CFR 216.2 (c) (2) (i) (viii) (xi):

- (i) "Education, technical assistance, or training except to the extent such programs include activities directly affecting the environment (such as construction of facilities, etc.)"
- (viii) "Programs involving nutrition, health care or population and family planning services designed to include activities directly affecting the environment (such as construction of facilities, etc.)"
- (xi) "Programs of maternal or child feeding conducted under Title II of Public Law 480."

Pursuant to CFR 216.2 (c) (2) the proposed program is categorically excluded from further environment review. As per 22 CFR 216.2 (c) (i), environmental assessment is not required for the activities that are determined to fall within one of the categories listed in 22 CFR 216.2 (c) (2).

#### Authority

AID Environmental Procedures in 22 CFR 216.2 (c) (3) state that a categorical exclusion determination shall be reviewed by the Bureau Environmental Officer in the same manner as a Threshold Decision under 216.3 (a) (2).

You may signify your concurrence with the foregoing determination by signing on the attached face sheet for this amendment.





ANNEX D.2

TITLE II ENVIRONMENTAL COMPLIANCE  
FACESHEET  
SAVE THE CHILDREN NICARAGUA

**Title of DAP/PAA Activity:** Targeted Food Assistance to Malnourished and At-Risk Mothers and Children, Region II, Leon and Chinandega

**Funding Period:** FY 99 to FY 99

**Resource Levels:** Commodities (dollar equivalent, incl. Monetization) \$ 550,000  
Total Metric tonnage request 1090MT  
202 (e) grant: \$285,102

**Statement Prepared by:** **Name:** Margarita Clark **Date:** September 17, 1998  
**Title:** Program Manager

**IEE Amendment (YES/N):** N **Date of original IEE:** \_\_\_\_\_.

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

*Air* \_\_\_\_\_ *water* \_\_\_\_\_ *biodiversity (specify)* \_\_\_\_\_ *human health* \_\_\_\_\_ *other* \_\_\_\_\_ *none* x

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

x 1. Categorical Exclusion

*due to types of activities:* 1. *Education & training programs 216.2 c (2) (i)*  
2. *Nutrition & health care program 216.2 c (2) (viii) & (xi)*

\_\_\_\_\_ 2. Initial Environmental Examination:

\_\_\_\_\_ *Negative Determination:* no significant adverse effects expected regarding the proposed activities which are well defined over life of DAP/PAA. IEE prepared:

\_\_\_\_\_ without conditions (no special mitigation measures needed; normal good practices and engineering will be used)

\_\_\_\_\_ with conditions (special mitigation measures specified to prevent unintended impact)

\_\_\_\_\_ *Negative Determination:* no significant adverse effects expected, but multiple sites and subactivities are involved that are not yet fully defined or designed. "Umbrella IEE" prepared (go to Annex B and Annex F for examples)

\_\_\_\_\_ conditions agreed to regarding an appropriate process of environmental capacity building and screening, mitigation and monitoring.

\_\_\_\_\_ *Positive Determination:* IEE confirms potential for significant adverse effects on one or more activities. Appropriate environmental review needed/conducted.

\_\_\_\_\_ EA to be 'being' has been (circle one) conducted. Note that the activities affected cannot go forward until the EA is approved.

Annex D.2  
**REQUEST FOR A  
CATEGORICAL EXCLUSION  
SAVE THE CHILDREN NICARAGUA**

**1. Background and Activity Description**

The project: "Targeted Food Assistance to Malnourished and At-Risk Mothers and children of Region 11, Leon and Chinandega" provides PL 480 Title II food commodities in the form of CSB and Vegetable Oil as take-home rations for program participants to improve their health and nutritional status. In combination with Save the Children's Child Survival Program, the project uses a variety of integrated nutrition and health interventions to address the household food security of pregnant women, lactating women and children under three. Additionally through direct feeding in community services for children ages three through five, the program contributes towards more integral child development and on-going parent education.

Activities implemented do not have any adverse effects on the environment, as they are focused on maternal-child health and nutrition involving education and training as well as nutritional surveillance.

**2. Justification for Categorical Exclusion Request**

1. Education & training programs 216.2 c (2) (i)
2. Nutrition & health care program 216.2 c (2) (viii) & 216.2 c (2) (xi)

**Summary of Findings:**

Briefly (1 or 2 paragraphs) describe the activities being implemented or proposed, justify the reason for the recommended action(s), and cite appropriate sections of Reg. 216 as needed. For IEEs, reproduce here the Summary from Section 5 of the IEE narrative, and/or Section 2 of the Request for Categorical Exclusion.

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

Mission Director: Liliana Ayalde for Date: 9/22/98

Food For Peace Director: Jeane Markuras, Acting Date: 9/23/98

Concurrence:

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Bureau Environmental Officer: J Paul des Rosiers Date: 9/23/98  
(BHR)

Approved: X

Disapproved:    

Optional Clearances:

FFP Officer: \_\_\_\_\_ Date: \_\_\_\_\_

Mission Food Aid Manager: \_\_\_\_\_ Date: \_\_\_\_\_

Mission Environmental Officer: Margaret M Hawey

Date: 9/21/98

Regional Environmental Officer: \_\_\_\_\_

Date: \_\_\_\_\_

Geographic Bureau Environmental Officer: \_\_\_\_\_

Date: \_\_\_\_\_

General Counsel: \_\_\_\_\_

Date: \_\_\_\_\_

### Annex D.3

## INITIAL ENVIRONMENTAL EXAMINATION

### TITLE II ENVIRONMENTAL COMPLIANCE FACE SHEET

**Title Of DAP/PAA Activity:** Manica Oil Seed Food Security Initiative (FY'99 PAA)

**CS Name/Country/Region:** Africare/Mozambique/Africa

**Funding Period:** FY 1997 - FY 2001

**Resource Levels:** Commodities (dollar equivalent): \$3,737,486  
Total Metric Tonnage Request: 18,690 MT's (Wheat)  
202 (E) Request: \$647,522  
USAID/M Request: \$569,077  
PVO Contribution: \$189,693

**Statement Prepared by:** Name: William Noble  
Title: Country Representative

Date: 05/18/98

**IEE Amendment (Y/N?)** No **Date Of Original IEE:** \_\_\_\_\_

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

*air* \_\_\_ *water* *X* *land* *X* *bio-diversity(specify)* \_\_\_ *human health* \_\_\_ *other* \_\_\_ *none* \_\_\_

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

*X* 1. *Categorical Exclusion (s)*

*X* 2. *Initial Environmental Examination:*

*X* *Negative Determination:* no significant adverse effects expected regarding the proposed actions, which are well-defined over life of DAP/PAA. Prepare IEE:

\_\_\_ without conditions (no special mitigation measures needed; normal good practices and engineering will be used)

*X* with conditions (special mitigation measures specified to prevent unintended impact)

\_\_\_ *Negative Determination:* no significant adverse effects expected, but multiple sites and sub-activities are involved that are not yet fully defined or designed. "Umbrella IEE" prepared:

\_\_\_ condition agreed to regarding an appropriate process of environmental capacity-building and screening, mitigation and monitoring.

\_\_\_ *Positive Determination:* IEE confirms potential for significant adverse effect of one or more activities.

\_\_\_ EA to be / being / has been (circle one) conducted. Note that the activities affected cannot go forward until EA is approved.

\_\_\_ *Deferral:* one or more elements not yet defined, will not be implemented until amended IEE is approved.

**Summary Of Findings:**

This IEE has been completed under the guidelines issued by USAID/BHR/FFP and Africa Bureau to Title II Cooperating Sponsors implementing Development Activity Programs (DAP) for Environmental Compliance Procedures. Included is an analysis of all activities that have been begun by Africare (since FY'97) of its on-going Title II activity - the Manica Oil Seed Food Security Initiative - and other activities that will be completed during the expected life of activity. Based on this analysis, including a review of field experience, project impact and existing national and USAID regulations, the following determinations are being recommended:

**Categorical Exclusions** are recommended for the following activities:

Per 22 CFR 216.2 ( c ) (1) (i): 1) Monetization of agricultural commodities; 2) Support private sector to import and maintain stocks of presses and spare parts.

Per 22 CFR 216 2 ( c ) (2) (i): 1) Training and extension support in improved oil seed husbandry techniques; 2) Training and technical assistance to Press Owners; 3) Train rural artisans to provide repair services at the village level; 4) Training of sales agents to market oil presses.

Per 22 CFR 216 2 ( c ) (2) (ii): 1) Field level research of different varieties of oil seed.

Per 22 CFR 216 2 ( c ) (2) (v): 1) Oil press demonstrations at the community level; 2) Identification of different outlets for the sale of increased oil seed production (village presses and/or commercial refineries).

Per 22 CFR 216 2 ( c ) (2) (viii). 1) Formation and support of Village Food Security Committees (VFSC's); 2) Training and support of Community Nutrition Activists; 3) Development of a nutritional education curriculum (with IEC materials); 4) Monthly growth-monitoring/educational sessions of under-five children; 5) House to house visits with members of the VFSC's that have children with serious nutritional problems 6) Transfer and reinforcement of a series of nutritional-related messages, presented during culinary demonstrations, traditional theatre, radio "spots" and group discussions about diet, good health and obstacles to improve these; 7) Establishment of a "Micro-Project Fund" that supports community-based efforts to reduce constraints to improved household food security and nutrition.

Per 22 CFR 216 2 (c) (2) (x): 1) Sale and marketing of manual oil presses, including credit provision.

**Negative Determinations with conditions** are recommended for the following activities:

Per 22 CFR 216.3 (a) (2) (iii):

1) Promotion of open-pollinated high oil-content seeds for the small-scale farmer.

*Ensure that no adverse conditions are created, such as increased pest infestations for other crops or overly-depleted fields.*

2) Promotion of improved methods of post-harvest drying and storage of oil seeds.

*Drying tables on farmer's fields and storage sheds in the target districts will be properly sited to not increase soil erosion and will not be near fragile or inappropriate land.*

3) Promotion of the appropriate mix of oil seed "cake" for improved animal feed.

*Ensure that oil seed cake is disposed of properly, to not contaminate ground water sources.*

Per 22 CFR 216.3 (b) (1): 1) Establishment of a private-sector-driven seed multiplication system, including the application of insecticide to planting seed prior to long-term storage.

*Conditions as specified in Appendix A (Pesticide Analysis and Action Plan).*

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

**Clearance:**

Mission Director: \_\_\_\_\_ Date: \_\_\_\_\_

Food For Peace Director: \_\_\_\_\_ Date: \_\_\_\_\_

**Concurrence:**

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

(BHR)           Approved: \_\_\_\_\_

                  Disapproved: \_\_\_\_\_

**Optional Clearances:**

FFP Officer: \_\_\_\_\_ Date: \_\_\_\_\_

Mission Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_

Regional Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_

Geographic Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_

General Counsel: \_\_\_\_\_ Date: \_\_\_\_\_

## INITIAL ENVIRONMENTAL EXAMINATION

### **Program/Project Data:**

DAP/PAA Program/Activity: Manica Oil Seed Food Security Initiative  
Activity Numbers: FFP -G-00-97-00034-01 (BHR/FFP)  
# 656-0229-G-7063-00 (USAID/Mozambique)  
CS Name/Country/Region: Africare/Mozambique

## **1. BACKGROUND AND ACTIVITY DESCRIPTION**

### **1.1 Background**

During FY'97, Africare began implementation of the Manica Oil Seed Food Security Initiative (MOSFSI), in five districts of Manica Province in the central part of Mozambique. Years of war and drought have left the vast majority of Mozambique's population in poverty, and they face challenges in achieving minimum conditions of food availability, access and utilization necessary for survival let alone meeting "dietary needs for a productive and healthy life." The twin problems of low levels of agricultural productivity and malnutrition are felt in different ways depending on the region of the country (north, central and south). The central province of Manica, bordering Zimbabwe, possesses significant potential for improved agricultural production but is just now beginning to respond to the damages caused by war and drought.

Within Manica province since the end of the war in 1992, the majority of households have returned to using hoe culture and have not been able to cultivate all the land area formerly used by each household. The civil war and the attendant insecurity in the province resulted in the uprooting of a large numbers of the rural households. Initiatives are critically needed to increase agricultural production but a variety of measures are also required to improve utilization both of existing food and any additional food which becomes available through increased production and/or incomes. These practices combined with the general poverty translate into statistics on nutritional status for the area which are extremely poor.

Although conditions vary within the districts, the area as a whole has a high potential for agriculture as it is highly suitable for the production of a wide range of crops. Historically, Manica Province was a net exporter of surplus production, both food and cash crops. The agricultural production system in the family (small-scale) farm sector was formerly based primarily on a mixed cultivation system using animals for draught power, transport and manure and smaller livestock for meat. A variety of crops were grown by households and those with access to irrigation (for which there is a high potential in the area) cultivated a variety of vegetables in gardens with in-field banana and other fruit trees for erosion control.

Africare's DAP was designed to address both the problems of agricultural productivity and of household nutrition within Manica Province through an activity which integrates the promotion of oil seed production and processing with an initiative to improve household nutrition. Oil seed production and processing is an appropriate activity to be promoted because it is the cash crop with the largest participation from the "family"/small-scale farm sector (based on historical experience and its proven ease of application), the documented positive impact oilseed will have in the short run on household income levels and that the most severe nutritional problems are evident within the small-scale farming sector. The intervention will increase agricultural productivity/processing capabilities and target improved household nutrition simultaneously. The interface being created between these two components will increase the impact of the DAP considerably beyond what could be achieved by either as a stand alone activity to improve the food security situation within the target districts.

The MOSFSI's twin emphasis on increasing household income and improved nutritional status strongly supports the strategies of both USAID/Mozambique and USAID/BHR/FFP. Strategic Objective #1 of USAID/Mozambique is focused on increased rural household income, especially as influenced by the establishment and enhancement of rural enterprises such as small-scale oil pressing and the planting of cash crops such as oil seed. Improvements in nutritional status that will be impacted by the Household Nutrition Component (e.g.



stunting, underweight, exclusive breast-feeding) are part of the “Generic Indicators” included in BHR/FFP’s “Results Framework”.

## 1.2 Description Of Activities

The goal of the Manica Oil Seed Food Security Initiative (MOSFSI) is to significantly enhance food security in the Sussundenga, Gondola, Manica, Guro and Barue districts of Manica Province. There are two objectives of this activity, which are of equal priority. The first is development of a sustainable, small scale oil seed production and processing industry in the five districts. The second is increased awareness and application of improved nutrition and health practices. The Oils Promotion Component and the Household Nutrition Component are designed to reinforce each other as well as increase the success and impact of each component beyond that which it could achieve as a stand alone activity. A map of the implementation area is on the following page.

A table presenting the activities to be completed under each objective and the recommended environmental decisions is on the following pages. Further information about these activities is presented below:

- **Monetization of Agricultural Commodities:** Working in collaboration with five other PVO’s, Africare has begun the importation and monetization of wheat (4,620 MT’s in FY’97 and 4,460 in FY’98; a proposed LOA total of 18,690 MT’s), a key food commodity that is not produced in Mozambique. The wheat is sold to national millers, who are producing wheat flour for poor urban consumers and to be marketed in outlying rural districts. The umbrella monetization program in Mozambique is jointly-managed by all six PVO’s, with World Vision as the Lead Agency. In addition to wheat, unrefined sunflower oil is also monetized, to be sold to national oil refineries. The local currency generated from the sale of both of these commodities is distributed among the collaborating PVO’s to support their technical interventions.
- **Oil Seed Production:** Activities focus on training and extension support for small-scale farmers and outreach staff of other agencies in improved oil seed husbandry techniques; the provision of open-pollinated high oil-content seeds for the small-scale farmer through primarily private sector outlets; establishment of a private-sector-driven seed multiplication system that will provide high-germination planting seed for the small-scale farming sector at a reasonable cost; identification of different outlets for the sale of increased oil seed production (village presses and/or commercial refineries); field level research of different varieties of oil seed to determine “optimum” planting conditions and highest oil content; promotion of improved methods of post-harvest drying and storage of oil seeds.
- **Oil Seed Processing:** Activities focus on oil press demonstrations at the community level; sale and marketing of manual oil presses at the village level, including the provision of credit for this purchase; training and technical assistance to press owners to improve oil extraction rates, market locally-processed oil, maintain accurate business and inventory records and ensure a regular supply of crushing seed; provide training and support rural artisans to provide repair services at the village level; training of sales agents from rural stores and companies in how to market oil presses; establish the private sector’s role in the support given to these rural enterprises, including importing and maintaining stocks of presses and needed spare parts; promotion of the appropriate mix of oil seed “cake” to increase the nutritional benefits of animal feed for local livestock.
- **Nutrition Education And Monitoring:** Activities focus on the formation and support of Village Food Security Committees (VFSC’s) as a community-based mechanism to organize improved levels of awareness and applications; training and support of Community Nutrition Activists that will support the VFSC’s; development of a nutritional education curriculum (with IEC materials) that will be the basis of outreach with the VFSC’s and the field staff of other agencies involved in community health; monthly growth-monitoring/educational sessions of under-five children to reenforce the impact that improved nutrition has with weight gain and general well-being; house to house visits with members of the VFSC’s that have children with serious nutritional problems; transfer and reenforcement of a series of nutritional-

related messages that form the nutritional curriculum, presented during culinary demonstrations, traditional theatre, radio “spots” and group discussions about diet, good health and obstacles to improve these; establishment of a “Micro-Project Fund” that will make a limited amount of funds available to each VFSC (maximum of \$800) to reduce constraints to improved household food security and nutrition.

Field activities in Manica Province are being completed with a participatory approach in the five districts that integrates the activities of both the Oils Promotion and Household Nutrition components, working in collaboration with the Ministries of Agriculture, Health and other development agencies operating in the province. Monetization activities are completed in Maputo (the capital city) and are managed by the PVO Executive Committee that meets on a regular basis to coordinate the importation and sale of Title II commodities with local traders.

During FY’97, a comprehensive baseline survey was completed within the more than 80 communities that will receive assistance during the five year Life Of Activity. Separate surveys were completed for both agriculture (including oil seed crops) and health (including nutritional status and food consumption practices). There are 49,354 households within Africare’s DAP implementation area. With an average household size of 6.5 people, there is an estimated 320,801 people for a target population. More information about Africare’s baseline information can be found in the FY’97 Baseline Monitoring and Evaluation Report, submitted to USAID/BHR/FFP in November 1997.

### **1.3 Purpose And Scope Of IEE**

This IEE is accompanying the FY’99 Previously-Approved Activity (PAA) submission and addresses all the activities in the FY’97 DAP for Africare/Mozambique’s Manica Oil Seed Food Security Initiative. Included in the analysis are all activities that have been implemented since FY’97 and any others to be begun during the last three years of implementation within the five target districts. Appendix A is a Pesticide Analysis and Action Plan for a key sub-activity to be completed during the final quarter of FY’98: the application of post-harvest insecticide to protect multiplied seed to be stored for five months (August - December 1998), prior to being marketed to small-scale farmers during the 1999 planting season (detailed below).

Included in the PAA is a proposed expansion of oils promotion activities into two districts of neighbouring Sofala Province. This expansion would take place during FY’99. If approved, an amended IEE would be submitted to include an analysis of the activities to be completed in these two additional districts.

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

### **2.1 Country Overview**

Since the signing of the General Peace Accord in 1992 that ended seventeen years of fighting and subsequent multi-party elections in 1994, Mozambique has turned in one of the most positive sets of macro-economic conditions of any country on the African continent. Inflation in 1997 was estimated to be 17%, with an economic growth rate of 8%; this is expected to improve during 1998. A significant amount of private investment has begun in different sectors of the country (much of this from South Africa) to develop key infrastructure links and the basis for increasing manufacturing and processing industries.

Agricultural production levels have continually increased during the same period. Since the official declaration by the Mozambican government to end the “Emergency Period” in December 1995, the agricultural sector has generally performed beyond expectations. Significant marketing and rural transport bottlenecks remain, and the government is re-evaluating its role vis-a-vis the establishment of producer prices for key food and cash crops (to become “market-determined”). The 1998 agricultural harvest will be the third consecutive good harvest that should make the country virtually self-sufficient in terms of cereals (in 1997, the cereals harvest represented 88% of total cereals available for consumption). With the exception of flooding in different parts of the country during the past three years, the principal constraint to increased food availability has been poorly-developed

infrastructure to improve transport from the cereals-surplus north to the population-dense southern part of the country.

Mozambique is a predominantly tropical country with a total area of 784,000 square kilometers. It has a long coastline of approximately 2,500 KM's. Topographically, the country can be divided into four zones: coastal, middle plateau, northern plateau and western highland. The majority of USAID-funded activities take place in the middle plateau and northern plateau zones in the provinces of Nampula, Zambezia, northern Sofala and northern Manica. This area has traditionally been the most agriculturally-productive of the country. A key assumption of USAID's Country Program Strategy is that the impact from improving services, inputs and capacity in this region is critical to the rehabilitation of the rest of the country.

The results of the August 1997 Population and Housing Census indicate a total population of 15 million people, significantly less than what had been estimated (this was the first census in fourteen years and was completed after the repatriation and internal re-settlement of approximately 5.5 million people after the end of the war). Despite the macro-economic improvements the country has had since 1994, it remains one of the poorest countries in the world. Per capita income is estimated to be \$90; even with ten years of 10% annual growth (USAID's income growth target for its current strategy period), the country would still be extremely poor.

## **2.2 Manica Province**

Located in the central part of the country, bordering Zimbabwe to the west and Sofala Province to the east, Manica Province is part of the middle plateau zone, but with mountains on its western borders. Historically a net exporter of surplus production for both food (maize and sorghum) and cash crops (sunflower and tobacco), these levels were reduced significantly during the initial fifteen years of independence. Livestock was virtually eliminated during the war and a large percentage of the land that had been cultivated by the small-scale farming sector was abandoned because of insecurity.

Conditions within the province have improved greatly during the past five years, mirroring the rest of the country. However, this process has been uneven and not without difficulties. At the time of the design of Africare's DAP (early 1996), it was estimated that only 20% of the arable land within the province was actually being planted. This reflects the fact that while most people had returned to the country by 1995 (the end of the repatriation), many were still reluctant to resume farming in the more isolated parts of the province. Since the beginning of Africare's activities, it has been determined that more land is being brought under production, especially by the small-scale sector, often with support from one of several large agri-business concerns (in tobacco and cotton) or with support from agricultural development initiatives similar to Africare's.

Because Manica is slightly higher than neighboring Sofala Province, and has mountains on the western side, rainfall levels are significantly higher in the central part of the province (these are the areas where Africare is working). Beside the "Beira Corridor" linking Beira with the Zimbabwean border, that passes through the center of the province, there is a good road that goes through the northern part of the province and links Chimoio, the capital city, with Tete Province. These two roads are the principal conduit by which the agricultural surplus that has been produced during the past three years in this area is transported to Beira and the three southern provinces to improve the country's structural food availability deficit situation.

The five districts in which Africare is working are considered to have the highest potential for improved agricultural production and marketing. The eastern part of these districts are considered more marginal, with slightly lower rainfall, but still possessing significant potential for production agriculture. Each district has one or both of the principal roads running through it; most of the communities where Africare is promoting oil seed production and processing are within 40 kilometers of one of these principal roads. The estimated population of these five districts is 563,000 people (from the 1997 census). The population of the target area surveyed by Africare in its baseline field work contains 49,354 households (320,801 people). Not surprisingly, this is the area with the most fertile soils, much of which has only been brought back into production during the past three years.

There are no protected areas or conservation zones (e.g. game reserves or national parks) within the five target districts. There are several rivers that flow through these areas, including the Honde (Barue), the Revue (Sussendenga, Gondola), the Pungue (Manica, Gondola) and the Rotanda (Sussendenga). The Chicamba Dam in Manica district is the principal water source for the capital city of Chimoio. In normal rainfall years, water availability is not a constraint for small-scale agriculture. Average annual rainfall is more than 1,000 mm; slightly less in the more marginal areas. This part of Manica Province has been classified as a “semi-intensive” agro-ecological zone (USAID/M SEA 1994).

Soil conditions<sup>18</sup> in the areas with more than 1,000 MM of annual rainfall are very conducive to production agriculture. They are well-drained, highly weathered, deep to moderately deep, stable red soils with good permeability and water holding capacity. In areas with lower rainfall, the soils are generally brown to dark brown, moderately shallow sandy loams of moderate fertility. Areas of moderately deep soils occur on the crests of ridges between the major rivers. Alluvial soils have a scattered distribution pattern along the major streams and rivers. They have provided the nucleus for settlement and intensive cultivation.

Vegetation zones in the five districts include the following: semi-deciduous high rainfall woodland (Sussendenga, Gondola, Barue), moist semi-deciduous forests (Guro, Barue, Sussendenga, Manica), deciduous savana woodlands (Gondola, Sussendenga) and deciduous lowland savanna woodlands (Guro - area of marginal rainfall). Beginning in northern Barue district, the vegetation begins to change most clearly, to a drier ecology (rainfall levels in Guro district have always been significantly lower than the other target districts).

A principal reason for promoting oil seed in this area, besides its historical importance to the small-scale sector, is its inherent drought-resistant qualities (the roots of the sesame plant especially will grow significantly down into the soil to capture retained moisture). Part of the area where Africare is working has more fragile soils and lower rainfall levels (in the eastern part of the province). Despite this fact, oil seed is still considered a viable (and profitable) crop, albeit at lower levels of production.

The mean number of plots cultivated in 1997 by the farmers interviewed in Africare’s baseline was 2.4 (each with no more than .3HA/plots). The percentage of small-scale farmers who used chemical fertilizers was 1% and the percentage that used other inputs (improved seed, insecticide, herbicide etc.) was 5%. In 1993, it was estimated throughout the province that 106,349 small-scale operators were cultivating 120,000 HA’s of land (1.1 HA/farm family). This average has increased (for example, during 1997, the average amount planted in oil seed alone was .14 HA’s/family; this planting took place before Africare’s outreach began).

Oil seed fits well into the Manica farmer’s planting schedule. Land clearing and planting for maize and sorghum is completed during mid-November through the end of December. It is often inter-cropped with cassava or ground nuts (especially in the northern part of the province). Oil seed is planted during the period mid-January through the end of February. There is limited competition between the principal food crops and oil seed.

Most of the labor provided for small-scale agriculture comes from the family. Given the large amounts of arable land to be brought back into production and that the secondary return movement of the population from the urban and rural commercial centers to the more isolated parts of the districts would be somewhat restricted due to insecurity, Africare determined (in 1996) that labor scarcity would be the principal constraint to increase land under cultivation by the small-scale sector (beyond 2 HA’s/family). Because of its prior large livestock population and a tradition of using animal traction, it was hypothesized that this would be the most appropriate method by which more land could be tilled, and planted in oil seed. The experience to date supports that hypothesis, available outside labor remains scarce, but a significant number of farmers who have received support from Africare are using

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<sup>18</sup> The discussion on soils conditions and vegetative zones in Manica Province is taken from the Integrated Rural Development Strategy Plan for Manica Province, prepared by GTZ’s Mozambique Agricultural Rural Reconstruction Program, January 1995.

animal traction to prepare their land for planting (animal traction promotion is not an explicit activity of Africare's program).

### **2.3 Mozambican Environmental Policies And Procedures**

In May 1996, the Ministry of Coordination For Environmental Action (MICOA) published the *Programa Nacional De Gestão Ambiental* (National Program Of Environmental Management - NPEM). This document represents several years of effort to present the Mozambican government's policies on environmental monitoring and objectives. This document identifies the government's principal environmental policy challenges as 1) a weak institutional capacity for rational management of its national resources, weak technical capacity, lack of intra-sectorial coordination and over-centralization of authority; 2) an inappropriate and/or incomplete sectorial legislation; 3) lack of an environmental education program; 4) limited information and research about the environment, especially in relation to coastal development.

Mozambique's environmental policy can be summarized as follows:

"Targeting the progressive eradication of poverty and the improvement in the quality of life as well as a reduction in environmental damage. The principal objective is to guarantee sustainable development, considering specific conditions, via an acceptable and realistic compromise between socio-economic progress and environmental protection" (page 63).

In relation to rural communities (such as where Africare is working), the NPEM seeks to create incentives in the rural population to increase agricultural production and to establish the legal and institutional capacity for decentralization and a community management system of natural resources. The "service delivery" implied in the NPEM is to be provided by other ministries and governmental agencies that work in rural zones. As such, the NPEM is a comprehensive policy document with limited resources to support its implementation at the local level.

The time frame for the implementation of the NPEM is ten years. Since its publication, much effort has been made by the MICOA to secure donor support for its activities at the provincial and district level. Inter-sectorial coordination is being promoted, with MICOA providing general guidance. At the local level, the active participation of communities is being solicited, including the development of environmental education materials.

Africare has negotiated a Project Accord with the Manica Provincial Government in support of the MOSFSI, and separate Protocols of Cooperation with the Provincial Directorates of Agriculture and Health. The Ministry of Agriculture recognizes the importance of oil seed to the small-scale farmer, and has welcomed Africare's involvement in this crop's promotion. During the 1997 and 1998 planting seasons, government extension agents did not have an extension strategy for oil seed; no policy guidance was prepared (at either the national or provincial levels) and most of the field staff were not minimally-trained in this crop's husbandry techniques. Part of Africare's support has been to become well-integrated within the MOA's planning efforts, specifically for oil seed. This regular collaboration takes place at both the provincial and district level, and has included specific training activities for government extension agents in oil seed crop husbandry practices. This support has been well-received and it is probable that by the end of the DAP implementation period, ministry guidelines for oil seed cultivation in Manica Province will be a direct result of Africare's outreach and collaboration.

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

### **3.1 Introduction**

Many of the activities being completed under the technical components of the MOSFSI are related to training and the provision of technical assistance and are having little impact on the local environment. There are certain aspects of the program that deserve analysis, these are presented below.

### **3.2 Monetization**

The importation and monetization of agricultural commodities is one of the principal sources of funding for Africare's DAP (and the other five Cooperating Sponsors that participate in the joint monetization program). The commodities are shipped from the US and are turned over to local traders at a Mozambican port. The PVO's do not physically import, clear, nor store the commodities; that is the responsibility of the trader. Sufficient storage exists at each of the three principal ports where both of the commodities are physically received (wheat and unrefined oil). This is confirmed by annual updates of the Bellmon Determination and Disincentive Analysis (the most recent copy of this analysis is included in the FY'99 PAA). All processing of the commodities takes place within the same city where it is received, using existing infrastructure owned by the traders (wheat mills and oil refineries), including packaging and marketing to urban consumers and rural commercial centers. There is limited present or future changes to the environment anticipated from the monetization activity.

### **3.3 Oils Promotion Component**

The principal activities being completed by the Africare Oils staff in Manica Province are presented and analyzed below for potential environmental impact.

#### **Oil Seed Production:**

- 1) Training and extension support in improved oil seed husbandry techniques.

Africare has established a system for the transfer and reenforcement of key husbandry messages to small-scale farmers to improve yields of both sunflower and sesame. Fifty Lead Farmers have been trained in these techniques and are responsible to transfer them to the different farmer groups with whom they are working. This process is supervised by an Africare extensionist (one per district). Africare's agronomist spends most of his time in the field, observing the transfer of these messages (proper planting space, number of seeds per station, appropriate time for "rogueing", thinning and weeding) and making needed refinements. During FY'98, approximately 3,500 families have received extension support by Africare's staff, in addition to other extension support provided by ministry officials and other agencies (with whom Africare works closely). All of the farmers with whom Africare is working are planting fields of less than one hectare. No chemical inputs are included in the husbandry package being promoted and there are no natural reserves or special protected land zones within the target areas. The use of improved seed is the key to ensuring higher yields, in addition to solid farm management. The LOA target for number of hectares planted with oil seed is 17,783 HA's (planted by an estimated total of 42,402 farmers).

The environmental impact of adoption of these messages within the farmer's farm management include reduced erosion (proper plant spacing), maintain soil fertility (timely weeding and thinning) and improved stalk development (limited number of seeds planted within each station). These impacts will be sustainable because experience with similar activities in Mozambique and Southern Africa (in addition to Africare's initial planting season in 1998) make clear that the impact of these management practices are a significantly higher yield of high-oil content seeds. Small farmers will rationally continue these practices after they have "seen" the positive result.

- 2) Promotion of open-pollinated high oil-content seeds for the small-scale farmer.

Open-pollinated varieties of oil seed are superior in oil content to other varieties that have been harvested in the province during the past several years (including promotion by other organizations of second and third

generation hybrid seed). The advantages to the small-scale farmer of open-pollinated oil seed include an acceptable germination rate in the second and third generations with no increased field management inputs and a significantly lower cost per hectare for planting seed when compared to hybrid varieties. These advantages have been documented by the on-going oil seed promotion activities throughout Southern Africa (Zimbabwe, Zambia, Tanzania, Kenya, Uganda and northern Mozambique). The seed that is being sold through the Lead Farmers and private sector sales points is the “Black Record” variety, originally from Romania, that has been brought to and successfully adapted within Southern Africa during the past fifteen years.

A principal difference between open-pollinated and hybrid seeds (besides cost) is that hybrid seeds are much more responsive to chemical inputs, which are quite expensive and generally unavailable in the Mozambican market. Traditional small-scale farming practices include the “selecting out” of part of each year’s harvest to be planted the following year. The promotion of open-pollinated varieties is preferred because 1) no chemical inputs are required to receive acceptable yields and 2) their use directly complements the farmer’s existing practices to select part of each year’s harvest to be planted the following season and still receive positive germination rates and yields of higher oil content seed.

From an environmental perspective, open-pollinated seed offers additional important advantages. Research completed by the “Sunflower Project” of Universidade Eduardo Mondlane indicates that open-pollinated sunflower (including Black Record) produces well under reduced rainfall conditions, with minimal nutrient depletion of the soil. Both the sunflower and sesame plants have the ability to grow significantly into the soil horizons to access retained moisture and nutrients at these lower levels. This is especially important within the context of Mozambique’s susceptibility to drought. There is a strong tradition of oil seed planting in Manica Province (see Africare’s DAP, pages 1 -5) and small-scale farmers with whom Africare is working have been able to plant open-pollinated seeds on the same plot 2-3 years consecutively with minimal reductions in yields. One of the reasons for this is the fact that soils in the province (especially in the majority of the implementation area within the five target areas) are generally well-drained and fertile. Manica province is one of the major cereals producers for the southern part of the country; the amount of marketed agricultural production has grown significantly during the past three years. Another environmental advantage to sesame in Manica is its inherent resistance to nematode development within the soil. Sesame is used in rotation with several cash crops in the province (principally tobacco and cotton) because of this characteristic.

Working with the university and the National Seed Service, Africare has supported training of provincial-based Seed Inspectors to improve their ability to monitor plant development of sunflower in the field. One aspect of this training has been to ensure that oil seed planted in the province is not creating unforeseen environmental impacts. Examples include identification of the most appropriate sites (e.g. well-drained) for seed multiplication to take place (Africare consulted with SNS to identify the plots being used for multiplication on several commercial farms), recognition of the possible types of pests that can attack sunflower or sesame during plant growth and the types of response to these infestations (pests have not been a problem during the 1998 growing season) and assessment of stalk development after germination to determine if the field is well-maintained.

Selected parts of the eastern half of Africare’s target districts are considered more marginal, because of slightly lower rainfall levels and a higher prevalence of the tse-tse fly, reducing the possibility of using animal traction to increase land under production. However, the drought-resistance qualities of open-pollinated seed are recognized by local farmers in these areas, especially during minimal rainfall seasons, making it superior to staple food crops such as maize. Sunflower is successfully inter-cropped with beans, taking advantage of the “nitrogen fixing” characteristics of the latter crop, while both plants’ root systems do not compete because they are accessing water and nutrients at different soil horizons.

The possibility of increased pest infestation and/or disease exists with oil seed, as with any other crop. This is being monitored by Africare staff, as are any other unforeseen changes in environmental conditions as a result of increased oil seed planting (See Section 4.2 below).

Africare has supported the formation of an “Oils Consortium”, comprised of the PVO’s working in the oils sector, commercial oil refineries and the university’s Sunflower Project. The consortium meets twice per year to review activities, compare experiences and jointly plan collaborative research activities. This latter activity includes the sharing of different oil seed varieties for applied research under different agronomic conditions and the dissemination of any unforeseen changes, including environmental impacts.

- 3) Establishment of a private-sector-driven seed multiplication system.
- 4) Identification of different outlets for the sale of increased oil seed production (village presses and/or commercial refineries).

These two activities are jointly discussed because they are focused on how the farmer receives planting seed and sells harvested seed for crushing. Africare has developed a seed provision system that satisfies several needs. For the 1998 planting campaign, 14 MT’s of planting seed was purchased from CARE’s oil program in Nampula Province (this has been sold and planted during the current planting year).. In addition, a limited amount of “basic” and “pre-basic” seed was sourced from Africare’s oils program in Zambia and from the government’s research station in Sussendenga. Contracts have been made with three commercial agricultural enterprises to multiply a large amount of basic seed during 1998, to provide 60 MT’s planting seed that will be sold during 1999. A limited amount of “pre-basic” seed will be selected out of the 1998 harvest, that will be the “basic or bulking” seed for 1999, that will provide the planting seed for 2000. Seed multiplication has been established within the province to develop locally-produced open-pollinated, high oil content varieties of oil seed that are most appropriate to Manica’s soils, in addition to providing an ample supply of crushing seed to satisfy local demand.

These multiplication contracts require the commercial farmer to provide a stipulated amount of seed, that will be purchased at an agreed upon price after the harvest. The multiplier must follow Africare’s husbandry practices (timing for weeding etc.), allow the field to be inspected by the National Seed Service, have irrigation available (if necessary) and apply the micro-nutrient “Boron” to the plant at flowering. During FY’98, the role of the commercial farmer will be limited to the provision of the multiplied seed to Africare. One of the commercial farms has been contracted to clean and bag the seed, prior to its being stored by Africare until the 1999 planting season. It is expected that these companies will increase their role in this system, eventually to include all aspects of wholesale promotion of planting seed as a fully commercial activity.

The packaging of the seed to be promoted involves placing each type of oil seed (sunflower and sesame) in 1 KG or 2 KG bags, that will be sold to individual farmers. It is necessary to store the planting seed for several months after the harvest, prior to the subsequent planting season. For this reason, the multiplied or certified seed must be cleaned immediately after harvest, and have Actellic Powder applied (an insecticide that protects the seed during storage from pest infestation) and package the seeds, prior to secure storage for several months. The Actellic Powder dissolves 7 - 14 days after application and is necessary to minimize damage prior to planting. It is applied only once prior to storage, by trained Africare senior technical staff. Per CFR 216.3 (b) (1), Appendix A is a *Pesticide Analysis And Action Plan* that details the conditions under which this sub-activity will take place.

A farmer makes the decision to plant oil seed based on the opportunities for selling the harvest. Establishment of manual presses is an obvious sales source (and press owners are involved in the sale of planting seed within their communities). Africare is also facilitating contacts with a commercial expeller in Chimoio and a large refinery in Beira, to purchase large amounts of crushing seed.

- 5) Field level research of different varieties of oil seed.

Working in collaboration with several other agencies (Agricultural Research Service, World Vision and SEMOC/Seed Co.), research plots have been established within the target districts, to compare performance of open-pollinated and hybrid varieties of oil seed. These plots cover less than .25 HA. In addition, Results Demonstration Plots were established by both Africare extensionists and Lead Farmers, near principal roads, to provide an example to other farmers. These plots are also on less than .25 HA’s of land. No chemical inputs are



used in either type of plot. The research plots are based on a comparison of different management techniques (amount of weeding, thinning) and the reaction of different varieties to local conditions. Another important objective of this activity is to determine if there are any unforeseen environmental consequences to oil seed planting (i.e. reduced drainage).

6) Promotion of improved methods of post-harvest drying and storage of oil seeds.

During the 1998 harvest, a limited number of “drying tables” will be established at Leader Farmer fields. These will be constructed from local materials, and use plastic sheeting as the key component to improve drying of the seed. They will be used by Leader Farmers as an example to other farmers of the improvement in oil extraction from properly dried seeds.

Africare will build ten small storage facilities (maximum capacity of 10 MT’s of seed each) at selected points in the target districts. These facilities will be constructed from local materials and be designed to reduce pest infestation and maintain the most appropriate air environment for short-term seed storage. The seed that is harvested by small-scale farmers to be sold to village presses and/or commercial refineries will be placed in these facilities during April - July (the pressing season). The seed treated with insecticide will be multiplied and stored in these same facilities during August - December.

The land onto which these sheds will be constructed will be level and well-drained. No site will be selected on fragile soils nor any “sensitive” areas.

Besides being an on-field storage site, they will be used in collaboration with several store owners to improve marketing of large amounts of seed, to be sold to commercial refineries (i.e. provide another local outlet for a farmer to sell his harvest in addition to the village-based press). The seed stored in these facilities during the harvest season will not be there for longer than several weeks, because the demand for crushing seed will be high.

**Oil Seed Processing:**

7) Oil press demonstrations at the community level.

The most effective method to generate demand for manual processing technology is the community press demonstration. Africare has completed more than 150 demonstrations to date. Often in collaboration with a press owner from a neighboring community, the press is presented to the people in attendance and a limited amount is pressed. This oil is then passed through a “bucket” filter or is boiled in water (these are the two methods to complete the processing). An explanation is given about the way to acquire a press. Because the press is mobile, the demonstration can take place anywhere within the district. Each demonstration takes place within the community (at a public meeting place) and takes approximately two hours to complete.

8) Sale and marketing of manual oil presses, including credit provision.

The sale of oil presses involves contact between interested people and Africare’s oil promotion staff (often after a community press demonstration). The terms to purchase a press are presented and an agreement signed. If the press owner cannot pay the entire amount up front, there are several credit options (including leasing). Of the 27 press sales during FY’97, 75% were made by credit. Africare’s target for operating presses in the target districts by the end of FY’98 is 85 (370 by LOA).

Manual oil press technology is considered “environmentally friendly” because the entire oil seed is effectively used. In addition to the oil that is produced, the remaining “cake” is an excellent source of livestock feed. The press itself is mobile (less than 40 KG’s) and no construction is required prior to pressing.

9) Training and technical assistance to Press Owners.

A variety of training is provided to new press owners, about daily maintenance that is required, the most effective pressing techniques, the different ways by which pressing services can be offered, and establishment of an inventory and cash flow system. This support continues throughout the pressing season (at least weekly visits).

10) Train rural artisans to provide repair services at the village level

This training will take place during the second half of FY'98, and provide local blacksmiths and bicycle mechanics with the knowledge they need to repair the most common problems that manual presses have.

11) Training of sales agents to market oil presses.

12) Support private sector to import and maintain stocks of presses and spare parts.

Contacts between Africare and the private sector are focused on increasing the latter's participation in support of processing activities. This includes training private company employees and rural store owners about the advantage of the press and its proven profit-making qualities. A large amount of presses will be imported from Zimbabwe during FY'98 by a commercial operator in Chimoio. This importation is being made for Africare and will increase the private sector's involvement in the provision of presses and spare parts.

13) Promotion of the appropriate mix of oil seed "cake" for improved animal feed.

The "cake" that remains in the press after oil extraction is a high nutrient product that can be used to make an improved livestock feed. Because livestock in Manica is relatively important (and has increased significantly during the past five years), the sale of oil seed cake to livestock producers is an additional source of income for the press owner. When mixed properly with other types of grain "chaff", it is an excellent feed for small livestock. Working with the Press Owners and Lead Farmers, the use of cake for livestock feed will be promoted. No chemical by-products will be used (salt will be added to the feed).

One possible environmental consequence from oil seed cake is if it were not to be used as a livestock feed and simply "thrown away" (i.e. possibly entering ground water sources). This will not occur for several reasons. The cake represents an additional source of income for the press owner (most of the cake produced during the 1997 pressing season was sold for livestock feed). Small-scale livestock is an important secondary activity for most families in the province. The cake is especially appropriate for goats, chickens, pigs and turkeys which are raised in every community that will have an oil press. Part of Africare's outreach is to encourage the use of oil seed cake for livestock feed and to monitor if existing stocks are not being consumed. Africare staff have received training in the most appropriate mixes of oil seed cake for small-scale livestock; this training has been incorporated into the recommendations being made within the target communities.

### **3.4 Household Nutrition Component**

The principal activities being completed by the Africare Nutrition staff in Manica Province are presented and analyzed below for potential environmental impact.

- 1) Formation and support of Village Food Security Committees (VFSC's).
- 2) Training and support of Community Nutrition Activists.
- 3) Development of a nutritional education curriculum (with IEC materials)

The three activities presented above are the basis of Africare's training and outreach within nutrition education. An important part of this process is the facilitation of a community analysis to identify constraints to improved food security. Fifty VFSC's will have been established and operating by the end of FY'98 (80 by LOA).

- 4) Monthly growth-monitoring/educational sessions of under-five children.

The purpose of the weighing sessions is to reinforce to the mother that if the child eats a better balanced diet, monthly weight gain will be improved. These sessions are directed by Africare's nutritionists and/or nutrition activists, using a weighing scale that is designed to show illiterate mothers how a child's weight fluctuates from month to month. These sessions are conducted outdoors and no local materials are needed.

- 5) House to house visits with members of the VFSC's that have children with serious nutritional problems.

As a follow-up to support for Village Food Security Committees, Africare staff are completing house to house visits to provide more specific training to mothers with children in difficult nutritional circumstances.

- 6) Transfer and reinforcement of a series of nutritional-related messages, presented during culinary demonstrations, traditional theater, radio "spots" and group discussions about diet, good health and obstacles to improve these;

The culinary demonstrations take place with small groups of mothers, focusing on enriched weaning foods and increased consumption of leafy vegetables and oil. Only local foods are used, with an increasing amount of the food used in the demonstrations to be provided by the mothers. These sessions are followed by group discussions of food preparation and the relationship different foods have with health and nutritional well-being. Theater and radio are reinforcing activities for improved nutritional practices.

- 7) Establishment of a "Micro-Project Fund" that supports community-based efforts to reduce constraints to improved household food security and nutrition.

This activity will begin during the second half of FY'98. A limited amount of funding will be provided to those Village Food Security Committees that have proven to be well-organized and willing to work with Africare staff. The funding will be used to purchase items in support of an activity that will improve food security for the members. Examples are gardening tools, vegetable seeds and improved storage containers. All labor must be provided by the community. No micro-projects will involve construction or land clearing/development.

## **RECOMMENDED MITIGATION ACTIONS (INCLUDING MONITORING AND EVALUATION).**

### **4.1 Recommended IEE Determinations**

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216.2 ( c ) (1) (i)...*"having no adverse effect on the natural or physical environment"*.

- Monetization of agricultural commodities
- Support private sector to import and maintain stocks of presses and spare parts

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216 2 ( c ) (2) (i)...*"education, technical assistance or training programs to the extent such programs includes activities directly affecting the environment"*:

- Training and extension support in improved oil seed husbandry techniques.
- Training and technical assistance to Press Owners.
- Train rural artisans to provide repair services at the village level
- Training of sales agents to market oil presses.

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216 2 ( c ) (2) (ii)...  
“controlled experimentation exclusively for the purpose of research and field evaluation which are confined to small areas and carefully monitored”:

- Field level research of different varieties of oil seed.

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216 2 ( c ) (2) (v)...  
“document and information transfers”:

- Oil press demonstrations at the community level.
- Identification of different outlets for the sale of increased oil seed production (village presses and/or commercial refineries).

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216 2 ( c ) (2) (viii)...  
“Program involving nutrition, health care or population & family planning services except to the extent designed to include activities directly affecting the environment”

- Formation and support of Village Food Security Committees (VFSC’s).
- Training and support of Community Nutrition Activists.
- Development of a nutritional education curriculum (with IEC materials)
- Monthly growth-monitoring/educational sessions of under-five children.
- House to house visits with members of the VFSC’s that have children with serious nutritional problems.
- Transfer and reenforcement of a series of nutritional-related messages, presented during culinary demonstrations, traditional theater, radio “spots” and group discussions about diet, good health and obstacles to improve these;
- Establishment of a “Micro-Project Fund” that supports community-based efforts to reduce constraints to improved household food security and nutrition

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216 2 ( c ) (2) (x)...  
“support for intermediate credit institutions when the objective is to assist in the capitalization of the institution or part thereof and when such support does not involve reservation of the right to review and approve individual loans made by the institution”:

- Sale and marketing of manual oil presses, including credit provision

A **Negative Determination With Conditions** is recommended for the following activities, per 22 CFR 216.3 (a) (2) (iii)... “ a Negative Determination will be recorded if the proposed activity will have no significant impact on the environmen”:

- Promotion of open-pollinated high oil-content seeds for the small-scale farmer.
- Promotion of improved methods of post-harvest drying and storage of oil seeds.
- Promotion of the appropriate mix of oil seed “cake” for improved animal feed.

While negative environmental impact is not expected with an increased planting of open-pollinated oil seed, monitoring by Africare staff will ensure that no adverse conditions are created, such as increased pest infestation for other crops or overly-depleted fields.

The drying tables on farmer’s fields and storage sheds at selected points in the districts will be properly “sited” to not increase soil erosion and will not be near fragile land.

An important part of Africare's outreach and monitoring of oil seed cake usage will be to ensure that the cake is disposed of properly, to not contaminate ground water sources.

A **Negative Determination With Conditions** is recommended for the following activity, per 22 CFR 216.3 (b) (1) (iii)... "*assistance for procurement or use, or both, of pesticides registered for the same or similar uses by USEPA...*":

- Establishment of a private-sector-driven seed multiplication system, including the packaging and protection of planting seed (with insecticide) prior to long-term storage.

The potential for adverse impact is significantly reduced because the insecticide is only applied once, under the direct supervision of trained Africare senior staff, prior to completing the bagging of the seeds and placement for storage (these will be the only individuals to physically handle the product). Promotion with small-scale farmers to use this type of storage insecticide is not included in Africare's program. Specific conditions are included in Appendix A (Pesticide Analysis and Action Plan).

#### 4.2 Mitigation, Monitoring And Evaluation

Despite the fact that most of the activities to be completed under the MOSFSI are being recommended as having no direct adverse impact on the environment, Africare staff will complete regular monitoring of field implementation to ensure that no unforeseen impacts develop. The majority of this environmental monitoring is taking place with the Oils Promotion Component. It is unlikely that any changes in the monetization program will create adverse environmental impacts. The Household Nutrition Component will also not likely develop environmental impacts, given that outreach activities such as immunization, blood testing or family planning promotion services are not included (nor are they expected to be added at a later date). However, should major modifications to the Household Nutrition Component occur that would incorporate new and potentially damaging activities, appropriate modifications to the recommended Threshold Decisions for each activity would be made.

The improved husbandry techniques being promoted for oil seed by Africare are "environmental friendly". Proper plant spacing, limiting the number of seeds per planting station and timely weeding are recommended techniques for any type of improved farming. Land preparation prior to planting is not included in the outreach program, but techniques such as contour planting, wind break establishment and animal traction are being promoted by other agencies and complement Africare's program. The initial experience with farmers during the 1998 planting season is that it is critical to reinforce the messages that are transferred; a significant amount of oil seed was "broadcast planted" despite repeated messages and demonstrations about the advantages of proper line spacing that result in higher yields.

Africare staff are responsible for monitoring any detrimental effects that result from an increase in oil seed planting and confirming that open-pollinated varieties continue to be the most appropriate from a financial and environmental perspective. Support is being provided to local farmers as they identify land to be prepared for oil seed planting. Fragile soils more prone to excessive erosion will be identified. Possible impacts on the local environment are included in the husbandry messages being transferred to farmers. Problems resulting from pest infestation and/or disease will be reported to Africare to expand collaborative work with other organizations to identify solutions, including Integrated Pest Management techniques, or more appropriate inter-cropping planting combinations. Research trials with other PVO's, the Sunflower Project and the Agricultural Research Station in Sussendenga will continue through the end of the DAP implementation period. The sharing of research conducted in other parts of Mozambique (through the Oils Consortium) is a source of information to overcome any negative environmental impacts that might be recorded.

Should increased soil erosion or poor drainage be identified by Africare staff (especially in the eastern more marginal rainfall areas of the target districts), specific recommendations will be made to the farmer to reduce this adverse impact (i.e. selection of land to be planted and/or specific land preparation techniques). An important monitoring activity is the tracking of yields on a representative sample of the farmers planting oil seed, and how

this changes from one year to the next. Significant reductions in yields due to insufficient nutrients in the soil would require the farmer to leave plots of land in fallow on a regular basis (although experience in Manica suggests that most farmers already do this).

This field monitoring takes place with government and research service personnel; one of the objectives of the Research and Results Demonstrations Plots is to identify the most appropriate combination of seed variety with different agronomic and climatic conditions, to receive high yields and minimal land degradation. All improved seeds that are being promoted have been certified for minimal oil content and germination rates by the National Seed Service.

Pesticides and fertilizers are not part of the Oils Promotion extension program. However, the use of fertilizer can effectively increase oil seed production (this has been little used in Mozambique to date, due to its prohibitive cost per hectare). Should Africare staff become aware of individual farmers using chemical fertilizers or a decision be made to include this input into the package being promoted, this would be included in an annual update of the IEE for the DAP, before promotion of this input. Any changes in the recommended IEE determinations would require USAID approval (e.g. to include chemical inputs in the outreach program).

The establishment of oil processing enterprises is also considered “environmental friendly” because the press is portable and requires no construction prior to its use. More importantly, it uses the entire harvested seed, first during the oil extraction process and second by the “cake” that provides the basis for improved animal feed. The farmers and press owners that are involved in the oil seed industry being created in the five target districts receive regular support from Africare staff throughout the growing season and the pressing season, respectively.

In addition to the district-based Oil Promoters/Extensionists, there are four technical staff that spend 50-60% of their time in the target districts. Finally, Africare has a full time M&E Officer that spends the majority of his time in the districts, recording the types of activities being completed and, more importantly, the impacts (both positive and negative) these activities are having at the community and household level. An important part of this monitoring includes the proper siting of on-farm drying tables and improved storage facilities and confirming that oil seed cake is being effectively used for livestock feed and not disposed of in an environmentally inappropriate manner. The storage sheds to be constructed during FY’98 will be directly managed by Africare and no further construction of similar structures will take place during the remaining three years of the DAP.

The initial experience with the packaging and storage of planting seed (identified above) will take place during the last quarter of FY’98. The multiplication of the seed is being completed under contract with commercial farmers. The cleaning and bagging of the seed will be completed by one commercial farm. Insecticide application and storage of the seed until the subsequent planting season will be completed by Africare staff. It is expected that in future years, commercial farmers will become more involved in this process (as part of the general objective to increase the role of the private sector in support of an oils industry), including the packaging and storage of seed prior to the subsequent planting season. This would also involve the application of insecticide to the seed by the multiplier, which would take place under the supervision of Africare staff.

As presented in Appendix A, post-harvest insecticide will be applied within an enclosed structure by trained Africare staff, in the appropriate quantities to provide long-term protection from pest infestation. The recommended product for this application, Actellic, is registered by both USEPA and the Mozambican Department of Plant Protection for use with stored grains. This product is available in Manica and appropriate equipment and protective clothing will be used. Provincial agricultural authorities will be requested to monitor this application, to ensure that Africare adhere’s to existing guidelines. The use of this product is not being promoted within the small-scale farming sector.

## **5. SUMMARY OF FINDINGS**

This IEE has been completed under the guidelines issued by USAID/BHR/FFP and Africa Bureau to Title II Cooperating Sponsors implementing Development Activity Programs (DAP) for Environmental Compliance Procedures. Included is an analysis of all activities that have been begun by Africare (since FY’97) of its on-going

Title II activity - the Manica Oil Seed Food Security Initiative - and other activities that will be completed during the expected life of activity. Based on this analysis, including a review of field experience, project impact and existing national and USAID regulations, the following determinations are being recommended:

A **Categorical Exclusion** is recommended for the following activities per 22 CFR 216.2 ( c ) (1) (i): 1) Monetization of agricultural commodities; 2) Support private sector to import and maintain stocks of presses and spare parts.

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216 2 ( c ) (2) (i): 1) Training and extension support in improved oil seed husbandry techniques; 2) Training and technical assistance to Press Owners; 3) Train rural artisans to provide repair services at the village level; 4) Training of sales agents to market oil presses.

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216 2 ( c ) (2) (ii): 1) Field level research of different varieties of oil seed.

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216 2 ( c ) (2) (v): 1) Oil press demonstrations at the community level; 2) Identification of different outlets for the sale of increased oil seed production (village presses and/or commercial refineries).

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216 2 ( c ) (2) (viii). 1) Formation and support of Village Food Security Committees (VFSC's); 2) Training and support of Community Nutrition Activists; 3) Development of a nutritional education curriculum (with IEC materials); 4) Monthly growth-monitoring/educational sessions of under-five children; 5) House to house visits with members of the VFSC's that have children with serious nutritional problems 6) Transfer and reinforcement of a series of nutritional-related messages, presented during culinary demonstrations, traditional theater, radio "spots" and group discussions about diet, good health and obstacles to improve these; 7) Establishment of a "Micro-Project Fund" that supports community-based efforts to reduce constraints to improved household food security and nutrition.

A **Categorical Exclusion** is recommended for the following activities, per 22 CFR 216 2 ( c ) (2) (x): 1) Sale and marketing of manual oil presses, including credit provision.

A **Negative Determination with conditions** is recommended for the following activities, per 22 CFR 216.3 (a) (2) (iii):

1) Promotion of open-pollinated high oil-content seeds for the small-scale farmer.

*Ensure that no adverse conditions are created, such as increased pest infestations for other crops or overly-depleted fields.*

2) Promotion of improved methods of post-harvest drying and storage of oil seeds.

*Drying tables on farmer's fields and storage sheds in the target districts will be properly sited to not increase soil erosion and will not be near fragile or inappropriate land.*

3) Promotion of the appropriate mix of oil seed "cake" for improved animal feed.

*Ensure that oil seed cake is disposed of properly, to not contaminate ground water sources.*

A **Negative Determination with conditions** is recommended for the following activity, per 22 CFR 216.3 (b) (1): 1) Establishment of a private-sector-driven seed multiplication system, including the packaging and protection of planting seed (with insecticide) prior to long-term storage.

*Conditions as specified in Appendix A (Pesticide Analysis and Action Plan).*

## REFERENCES

Africare: Manica Oil Seed Food Security Initiative, FY'97 Development Activity Proposal, May 1996.

\_\_\_\_\_ : Manica Oil Seed Food Security Initiative, FY'99 Previously-Approved Activity Request, April 1998.

CARE/Mozambique, Request For Authorization To Apply Post Harvest Pesticide, Submitted To USAID/Mozambique, August 1995.

GTZ MARRP: Integrated Rural Development Strategy for Manica Province, January 1995.

Ministry of Agriculture Department Of Plant Protection: "Guia De Pesticidas", January 1994.

USAID Bureau for Africa: Environmental Guidelines For Small-Scale Activities in Africa, June 1996.

USAID Bureau for Humanitarian Response: Environmental Documentation Manual, Final Draft January 1998.

USAID/Mozambique: Supplemental Environmental Assessment Of Pest Management and Pesticide Use In the Private Voluntary Organization Support Projects of USAID/Mozambique, January 1994.



## **Appendix A: Pesticide Analysis And Action Plan**

### **Africare/Mozambique Title II IEE/CE Request Post-Harvest Insecticide Application On Oil Seed**

#### **Background**

During the 1998 planting season, Africare contracted three commercial farmers in Manica Province to multiply “basic” open-pollinated sunflower and sesame seed on their own fields. The seed that will be harvested on these farms will be the planting seed to be sold to small-scale farmers within Africare’s target districts during the 1999 planting season. The original target of multiplied seed to be received was 60 MT’s. The harvest period has begun (at the time of this writing - May 1998). It is expected that at least 40 MT’s will be harvested during the period June - July 1998.

It will be necessary to store this multiplied seed for up to five months (through December 1998), prior to beginning the marketing of this planting seed to small-scale farmers. The seed will be stored in improved storage sheds that are being constructed under Africare’s management (see IEE text, section 3.3). To further protect this seed from insect damage, authorization is requested to apply the “Actellic” insecticide to the seed prior to it being bagged and stored.

#### **Analysis**

The following analysis follows the recommended outline, as per 22 CFR 216.3 (b) (1) (a-1):

##### *USEPA’s registration status of the requested pesticide:*

Actellic (generic name perimiphos-methyl) is a USEPA-registered pesticide that is classified for “general use”. It is an organophosphate with a USEPA Toxicity Class of III (Caution). It controls a wide range of pests affecting grains and other stored products. It is a rapid acting chemical with a 7 day toxicity cycle and is effective in warm and humid climates. Actellic acts through fumigation and ingestion and has a low mammalian toxicity. Authorization is requested to use this product in powder form.

##### *Basis for selection of the requested pesticide:*

Actellic is highly recommended for use on stored grains (and is approved for this purpose in the Supplementary Environmental Assessment completed for USAID/M’s PVO Support I Project). Attached is a copy of a table from the SEA that identifies perimiphos-methyl as approved for use with stored grains. It is registered by the Mozambican Ministry of Agriculture’s Department of Plant Protection for use on stored grains and is the least toxic of other available products. Previous experience by other PVO’s (CARE/Nampula) has confirmed that it is the most effective product for this purpose.

##### *Extent to which the proposed pesticide is part of an IPM:*

This application is not part of an Integrated Pest Management strategy because post-harvest insecticide application is not included in Africare’s outreach and training with small-scale farmer’s in Manica Province. This application is to be made to protect multiplied seed in storage prior to being sold to small-scale farmers. Its use will take place within a secure environment (i.e. within an enclosed structure) by trained Africare staff.

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*Proposed method or methods of application, including availability of appropriate application and safety equipment:*

The application of this product will take place prior to the bagging of the seed into 1 KG polyurethane bags. The bagging and cleaning will take place within a large warehouse on the grounds of one of the commercial farms that have multiplied seed during 1998. This farm has been contracted by Africare to clean the seed that will then be placed into large sacks, capable of holding up to 50 KG's of seed each. The Actellic powder will be applied directly (dusted) onto the seed in these large bags (an application rate of 20 - 50 grams of powder per 100 KG's of seed). This will take place at the warehouse where the bagging will take place. The seed will be sealed in these large bags for 15 days prior to initiating bagging into the smaller bags.

After it has been bagged in 1 KG bags, the seed will be stored in ten different storage sheds located throughout Africare's target districts. Each shed has a maximum capacity of 10 MT's; part of the walls will be wire-mesh, providing appropriate ventilation. Prior to placing the bagged seed in each storage shed, it will be disinfected with a common cleaning product.

The following equipment will be used by Africare staff during this application:

- Protective mask
- Rubber gloves and boots
- A set of overalls

The precautionary recommendations included on the packaging of this product will be strictly followed, including the use of a mask over mouth and nose, immediate removal of clothing used during application and burning of used containers. Prior to application and as per recommendations on the Actellic container, the product will be stored in its original container in Africare/Chimoio's warehouse. The warehouse will be locked and well-ventilated. Any person entering the warehouse will be informed of its existence and be aware of the toxicity of the product.

*Any acute and long-term toxicological hazards, either human or environmental, associated with the proposed use and measures available to minimize such hazards:*

Acute toxicity (LD50 in MG/KG) of Actellic is +2,000 oral and + 4,592 dermal. Eye effects are no corneal opacity, irritation is reversible in seven days. Skin effects are moderate irritation at 72 hours. Soap, water and hand towels will be available during application for immediate washing of hands and eyes (if necessary).

*Effectiveness of the requested pesticide for the proposed use:*

According to the Department of Plant Protection's "Guia de Pesticidas Registados em Moçambique" (1994), Actellic is "registered for use in public health and to control pests in stored products". It has a toxicity level of "Ligeiramente" (USE WITH CAUTION). As per the SEA completed for USAID/Mozambique in 1994, Actellic is most appropriate to be used with stored grain (see attached table and presentation of Actellic uses).

*Compatibility of the proposed pesticide with target and non-target ecosystems:*

The proposed application of Actellic by Africare will take place within an enclosed structure only. The use of Actellic powder within an enclosed, ventilated warehouse is recommended (see attached information). Because of the controlled conditions under which application will take place, no contact with non-target ecosystems is expected.

*Conditions under which the pesticide are to be used, including climate, flora, fauna, geography, hydrology and soils:*

The use of Actellic as presented for post-harvest storage protection (within an enclosed warehouse) will not contact flora, fauna, open water sources or fragile soils.

*Availability and effectiveness of other pesticides or non-chemical management methods:*

While there are other pesticides available that are effective for the proposed use, it has been determined that Actellic is the least toxic and has been used successfully for similar purposes within Mozambique (post-harvest storage protection of oil seed). Due to the length of time required to store this seed, it has also been determined that an exclusive non-chemical storage management strategy would result in significant losses due to pest infestation.

*Requesting country's availability to regulate or control the distribution, storage, use and disposal of the requested pesticide:*

As presented in the SEA for USAID/M, there is limited control of pesticide use in the country and “...much of the responsibility for safe and effective pesticide use by PVO's must be borne by the PVO Support Project and the PVO's themselves (page 38)”. Limited support has been provided to the Ministry of Agriculture in warehouse inspection and plant quarantine, but this has not covered the entire country. Africare's own contacts in Manica Province indicates that very little, if any, regulation of pesticide use takes place on a regular basis. The Manica Provincial Directorate of Agriculture will be informed of this pesticide application and requested to inspect the facilities and preparations prior to application.

*Provisions made for training of users and applicators:*

Actellic will be applied by Africare/Chimoio's agronomist (trained at a Atechnical-vocational level), who has 10 years experience working in agricultural development projects, including the use of pesticides. He has been involved with research activities and on-farm trials of different chemical inputs in small-scale agricultural initiatives and has worked with Actellic previously. The expatriate Oils Promotion Coordinator will supervise this application. He also has worked with Actellic previously and has 6 years experience working with oil seed crops.

*Provisions made for monitoring the use and effectiveness of the pesticide:*

Actellic is available within Manica Province in sufficient quantities to complete this application (with detailed instructions in Portuguese). It will be transported to the application sites in the back of Africare vehicles, well-secured to ensure no spillage if there are sudden stops, starts or turns. There will no sharp objects in the vehicle that could puncture the containers during transport. Only the amount necessary to protect the multiplied seed will be acquired; no additional containers of Actellic will be purchased and stored (in the medium term) by Africare.

During application, preparations to apply Actellic powder to the seed will follow the instructions on the label, in the proper sequence. No one will handle the product without the proper protective clothing and soap and water will be available for immediate cleaning of hands and eyes. Partially-used containers will be securely sealed during the application process and returned to storage. After completing the application, the empty containers will be burned (per the Mozambican “Pesticide Guide”). The clothing and other equipment used during the application will be thoroughly cleaned (the clothes will be washed separately from other clothes). They will be stored in the Africare/Chimoio warehouse.

Because the application will take place within an enclosed warehouse, there should not be “drifting” problems (movement of pesticide dust away from the seed to be treated). Application will take place in the early morning (prior to 10:00 AM), avoiding the hottest part of the day. No food or drink will be consumed within the warehouse during application. Should anyone show signs of pesticide poisoning, the application will be stopped and first aid will be immediately sought.

The treated seed will be sealed for 15 days prior to initiating the bagging into 1 KG bags. There will be no subsequent applications during the storage period.

**INITIAL ENVIRONMENTAL EXAMINATION  
SUSTAINABLE FOOD SECURITY FOR  
THE MOST VULNERABLE IN HONDURAS - CARE/HONDURAS**

Project Location: Honduras

Project Title: Sustainable Food Security for the Most Vulnerable  
in Honduras

Funding Source: PL-480 Title II CARE Grant provided by the BHR Bureau in USAID/Washington

Life of Project: 1996 to 2000 (5 years)

Life of Project Funding: \$23,100,000

IEE Prepared by: Becky Myton, Honduras  
Environmental Consultant

Date submitted: September 11, 1997

Gerald P. Bauer, USAID/Nicaragua  
Natural Resource Management Officer

Scott Solberg, CARE/Honduras  
Food Security Advisor

IEE Reviewed By: Albert L. Merkel  
Mission Environmental Officer

Threshold Decision for Activities during FY97 through FY00

**A. Categorical Exclusions for the following actions:**

1. Education and training programs (216.2 ( c ) (2) (i))
2. Nutrition and health care programs (216.2 ( c ) (2) (viii) & 216.2 (2) (xi))

**B. Negative Determinations for the following actions (216.3 (a) (2) (iii)):**

1. Agricultural demonstration plots.
2. Physical improvement of markets.
3. Construction of new markets.
4. Physical improvements to homes.
5. Environmental protection and reforestation

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**Under no circumstances will funds for new activities be used for, 1) the purchase of equipment which could be used for commercial timber harvesting, 2) activities, projects, or programs involving commercial timber harvesting, unless the appropriate EA is considered, and approved by the BHR Environmental Officer.**

**C. The following actions merit a Positive Threshold Decision and, hence, require Environmental Assessments:**

1. Improvement of existing roads (216.2 (d) (1))
2. Construction of new roads (216.2 (d) (2))

Mission Director's Decision

Approved: EB  
Elena Brineman  
Mission Director

Disapproved: \_\_\_\_\_  
Elena Brineman  
Mission Director

USAID APPROVAL OF ENVIRONMENTAL ACTION(S) RECOMMENDED:

Clearance:

BHR/FFP WTO Date: 2/4/98  
William T. Oliver, Director

Concurrence:

BHR/BEO PEDR Date: 2/5/98  
Paul E. des Rosiers  
Environmental Officer

**TITLE II ENVIRONMENTAL COMPLIANCE  
FACESHEET**

Title of DAP/PAA Activity:

Development Activity Proposal  
FY 1997 B 2000  
Catholic Relief Services/Kenya Project Number 648-96-013  
CS name Country/Region

Catholic Relief Services B USCC Kenya Program

**Funding Period:** FY 1997 B FY 2000

**Resource Levels:** Commodities (dollar equivalent, incl. Monetization) \$6,722,250  
Total metric tonnage request: 24,483MT  
202(e) grant: \$ \_\_\_\_\_

**Statement Prepared by:** Name: Jean Marie Adrian **Date:** July 9, 1998  
Title: Country Representative

**IEE Amendment (Y/N)?**  N  Date of Original IEE \_\_\_\_\_

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

Air  N  Water  Y  land  Y  biodiversity(specify)  N  human health  Y  other  none   N

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

Yes  1. Categorical Exclusion(s)

Yes  2. Initial environmental Examination

\_\_\_\_\_ Negative Determination: no significant adverse effects expected regarding the proposed activities, which are well defined over life of DAP/PAA. IEE prepared:

\_\_\_\_\_ without conditions (no special mitigation measures needed; normal good practices and engineering will be used)

\_\_\_\_\_ with conditions (special mitigation measures specified to prevent unintended impact)

Yes  Negative Determination: no significant adverse effects expected but multiple sites and sub-activities are involved that are not yet fully defined or designed "Umbrella IEE" prepared (go to Annex B and Annex F for examples)

Yes  conditions agreed to regarding an appropriate process of environmental capacity building and screening, mitigation and monitoring

\_\_\_\_\_ Positive Determination: IEE confirms potential for significant adverse effect of

## Annex D.5

one or more activities. Appropriate environmental review needed/conducted.

\_\_\_\_\_ EA to be/being/has been (circle one) conducted. Note that the activities affected cannot go forward until the EA is approved.

\_\_\_\_\_ Deferral: one or more elements not yet sufficiently defined to perform environmental analysis; activities will not be implemented until amended IEE is approved.

### SUMMARY OF FINDINGS

#### a) For activities associated with the Food Assisted Child Survival (FACS)

The activities under FACS fall into Categorical Exclusion (CE) as per section 2(c) (2) of 22 CFR 216. The specific citations are 216.2(c) (2)(i), 216.2(c) (2)(iii), 216.2(c)(2)(viii), and 216.2(c)(2)(xi), hence require no mitigation.

#### b) **Complementary Activities B** Negative Determination with conditions (Umbrella IEE)

This Initial Environmental Examination (IEE) satisfies the conditions of the environmental procedures for umbrella activities and delegation of environmental review responsibilities to Missions for PVO/NGO umbrella-type projects (Cable 95 STATE 257896). A screening form and environmental reviews will be prepared.

#### **Environmental Determinations**

##### ***Negative Determination with Conditions (Umbrella IEE)***

Based on environmental review procedures, promotion of environment review capacity building monitoring, evaluation, and mitigation procedures specified in this IEE, to which the Mission commits itself, a **Negative Determination with Conditions (Umbrella IEE)** is recommended for complementary activities of FACS. The complementary activities of FACS which use of the umbrella IEE process is recommended are:

- I. sustainable agriculture with emphasis on soil fertility improvement by using farm yard manure and/or compost, practicing organic farming, crop rotation, mixed farming and minimizing land degradation;
- II. improving agricultural production by facilitating access to high quality germplasm, credit for draught animals and improving extension services to small holder farmers;
- III. agroforestry practices;
- IV. increasing livestock production through training small holder farmers in livestock management and offering them credit to purchase bulls and dairy animals;
- V. providing potable water in shallow wells, bore holes, small earth dams/pans, de-silting of earth dams, by rain water harvesting and protecting springs;
- VI. improving sanitation by constructing pit latrines;
- VII. community training;
- VIII. community organization and mobilization;
- IX. technical assistance; and
- X. small enterprise promotion by providing credit to the poor



Annex D.5

This IEE specifies a set of steps, in accordance with the Africa Bureau's *Environmental Guidelines for Small-Scale Activities in Africa*, to ensure adequate environmental review of USAID supported activities, including capacity building elements. This negative determination is also conditioned on the provision of supplemented project technical assistance and training support to augment existing efforts. These capacities will be developed and implemented in close collaboration with USAID/Kenya and CRS/Kenya local implementing partners.

**The screening form will be used to confirm a Categorical Exclusion** for these complementary activities: community training, community organization and mobilization, food rations, technical assistance, small enterprise promotion by providing credit facilities to the poor. They have no physical intervention and no direct effects on the environment pursuant to 22 CFR 216.2(c)(2)(i), 216.2(c)(2)(iii), 216.2(c)(2)(viii) and 216.2(c)(2)(xi). These activities will be grouped under Category 1 in the Screening Form to be prepared.

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

**Clearance:**

Mission Director: \_\_\_\_\_ Date: \_\_\_\_\_  
Dennis Weller (Acting)

Food for Peace Director: \_\_\_\_\_ Date: \_\_\_\_\_  
William T. Oliver

**Concurrence:**

Bureau Environment Officer: \_\_\_\_\_ Date: \_\_\_\_\_  
(BHR) J. Paul DesRosiers

Approved: \_\_\_\_\_

Disapproved: \_\_\_\_\_

**Optional Clearances:**

FFP Officer/Mission Food Aid Manager: \_\_\_\_\_ Date: \_\_\_\_\_  
George Mugo

Mission Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_  
Dennis Weller

Regional Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_  
Charlotte Bingham

Geographical Bureau Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_  
Carl Gallegos

General Counsel: \_\_\_\_\_ Date: \_\_\_\_\_  
Stephen Tisa

## INITIAL ENVIRONMENTAL EXAMINATION

### **Program Data:**

DAP (FY 1997-2000); CRS Project Number - 648-96-013  
Catholic Relief Services, Kenya, East Africa Region

## **1.0 BACKGROUND AND ACTIVITY DESCRIPTION**

### **1.1 Background**

Kenya is a low income, food insecure country with a per capita income of US\$ 270. A majority of its inhabitants suffer from food insecurity, drought and famine conditions and 80% of the population lives in rural areas, which are classified as Arid and Semi-Arid Lands (ASAL). Food production of these farmers is insufficient to meet household needs. Reports from these areas indicate that childcare practices are deficient and that knowledge of other preventive health practices, including those for pregnant women and children, is woefully inadequate. Inadequate feeding practices, high levels of anemia and poor nutrition for women and children are common in these arid and semi-arid areas. Furthermore, recent statistics demonstrate that vaccination coverage and feeding practices in these regions are some of the lowest in the country (GOK, 1995).

The goal of the Catholic Relief Services (CRS) Kenya Program is to contribute to the reduction in infant and child mortality and morbidity through improved knowledge and health practices among women from food insecure households, and their communities. CRS's sub-goal is to improve utilization of food by pregnant/lactating women and children under the age of 24 months. Our strategic objective I is improved health status of women and children.

The CRS/Kenya program focuses on proven low cost Child Survival interventions which addresses inadequate infant feeding practices and maternal and newborn care knowledge, practice and coverage that present adequate the consumption/utilization of food. In addition, CRS/Kenya has moved from center-based to community-based health care programming for health interventions because of its proven effectiveness in improving the targeting of food resources and sustainability of health activities at the community level.

### **1.2 Description of Activities**

Catholic Relief Services- Kenya Program FY 1997-2000 Development Activity Proposal (DAP) addresses several factors relating to food security in multiple targeted geographic areas in Kenya through food assisted child survival (FACS) and complementary activities which include sustainable agricultural, savings and credit, water and sanitation.

For the purpose of this Initial Environmental Examination (IEE), CRS activities have been categorized into two, namely activities which fall under FACS, and complementary activities. Specifically CRS/Kenya focuses its efforts on the communities which are located in areas plagued by food insecurity.

The CRS/Kenya Title II Program proposed in this four-year DAP focuses primarily on one intervention-Food Assisted Child Survival (FACS) - which was formerly the Maternal and Child Health intervention. CRS/Kenya focuses on an integrated approach to achieve success in the FACS program. That is, the FACS program activities take place in specifically defined communities and will be complemented by projects in sustainable agriculture, potable water, sanitation, and savings/credit. This integrated approach allows CRS/Kenya to achieve a greater level of program impact in the area of food security, and results in a greater concentration of resources in fewer geographical areas under stronger management structures.

## **1. FACS ACTIVITIES**

The FACS activities can be grouped in the following major categories:

Community training on child survival messages

Community organization and mobilization

- Targeted, monthly food rations
- Community-based data collection
- Child growth monitoring
- Counseling and home visits
- Provision/distribution of de-worming medicine, iron, folic acid and vitamin supplements

## **2. COMPLEMENTARY ACTIVITIES**

The complementary projects, will be decided as needs are identified by the FACS target communities after community mobilization and training. It is expected that, after community mobilization and training, the target community will identify other needs to improve their food security. These needs, prioritized by the community, will be considered for support by CRS. The support of the selected interventions will be determined by 1) their technical soundness 2) community capacity to implement and operate; 3) availability of the required natural resources and 4) future sustainability. The complementary activities can be grouped under the following major interventions:

- I. sustainable agriculture with emphasis on soil fertility improvement by using farm yard manure and/or compost, practicing organic farming, crop rotation, mixed farming and minimizing land degradation;
- II. improving agricultural production by facilitating access to high quality germplasm, credit for draught animals and improving extension services to small holder farmers;
- III. agroforestry practices;
- IV. increasing livestock production through training small holder farmers in livestock management and offering them credit to purchase bulls and dairy animals;
- V. providing potable water in shallow wells, bore holes, small earth dams/pans, de-silting of earth dams, by rain water harvesting and protecting springs;
- VI. improving sanitation by constructing pit latrines;
- VII. community training;
- VIII. community organization and mobilization;
- IX. technical assistance; and
- X. small enterprise promotion by providing credit to the poor

### **1.3 Purpose and Scope of IEE**

This IEE is for the approved DAP for 1997-2000. It is presented with the PAA for FY 1999 due to the recent focus on the necessity of environmental review for Title II activities within USAID. This IEE covers activities for monetization and activities supported by such funds, namely Food Assisted Child Survival (FACS) and complementary activities for the period FY 1999 - 2000.

## **2.0 COUNTRY AND ENVIRONMENTAL INFORMATION**

## 2.1 Locations affected

The locations affected are only briefly described, because for any complementary activity they will be described specifically and in more details in the Environmental Review following the procedure for environmental screening and review under umbrella procedures.

The four major areas in which the above mentioned activities will be implemented are

South Nyanza (Homa Bay and Suba Districts),  
North Eastern (Tana and Lamu Districts), and  
the semi-arid communities of Laikipia/ Nyandarua/ Nyeri Districts.

All the areas affected are in the arid and semi-arid lands (ASAL) of Kenya. The description of the physical environment of the ASAL herein is per GoK (1992) policy document titled “Development Policy for the Arid and Semi-Arid”.

### Climate and Rainfall of ASAL

Evapotranspiration rate is twice the annual rainfall. Rainfall is low and highly variable. Average annual rainfall (mm) range from 200 - 850 mm. Rains come in two seasons, long and short. ASAL soils are variable, ranging from light to medium texture and are shallow. The soils are subject to compaction and susceptible to erosion. In the very dry areas, soils have problems of salinity and sodicity.

### Vegetation of ASAL

The vegetation is a variety of grasslands, bushlands, woodlands and some forest cover. River plains become important grazing fields during dry seasons. Density of tree and bush cover is very low, but evergreen forest occurs along the major rivers and highlands. Degradation of wood resources occurs locally, but elsewhere the fuelwood needs of low population densities are met.

### Patterns of land use in the affected locations in ASAL

In Homa Bay, and Suba districts of South Nyanza, the farming system is mixed. The main crops are maize, beans and cotton. Cattle, goats and sheep are of local breeds. Productivity is much related to rainfall amount and pattern. In Tana River and Lamu districts, it is pastoralism and mixed farming.

## 2.2 Environmental policies and procedures

### (a) Government of Kenya Laws, Policies and Procedures

The Government of Kenya addresses issues of the environment through:

Agriculture Act, Chapter 318 Section 48 of the Laws of Kenya on the preservation of the soil and its fertility. Under the law, whenever the Minister for Agriculture considers it necessary or expedient so to do for the purposes of the conservation of the soil of, or the prevention of the adverse effects of soil erosion on, any land, he may, with the concurrence of the Central Agricultural Board make rules that preserve the soil and its fertility. CRS/Kenya undertakes to abide by any rule made by the Minister for Agriculture according to Section 318 Section 48 of the laws of Kenya.

Water Act, Chapter 372 Section 50 and 53 of the Laws of Kenya does not allow the construction of wells within a half a mile from each other. In cases where the wells are within a half a mile from each other, the Water Apportionment Board will specify particular tests to be carried out. Such tests may include rate of pumping and rest levels of water. In case of high pumping rate or low water rest levels, the Board will stop further pumping. Section 68 of the Act deals with the contamination and pollution of ground water. The section also gives measures to be taken to control contamination and pollution of ground water such as effective sealing of the top of wells, disposal of wastewater, disposal of effluent or drainage from any household. For small dams, the guidelines for the design, construction and rehabilitation of small dams and pans in Kenya published in 1992 by the Ministry of Water Development will be used, also the provision of the Water Act Part XI will be followed.

According to the Ministry of Water Resources, Design Manual for Water Supplies in Kenya, gives guidelines on testing bacteriological and chemical quality of potable water. The guidelines are similar to those of World Health Organization (WHO).

Bacteriological and chemical quality of water source should be tested before selecting a water source, and routinely during the operation of a supply. The manual also gives guidelines on sampling and maximum acceptable values. CRS/Kenya and its partners will follow the recommendations.

A number of registered water testing laboratories are available in Nairobi. These include the Government of Kenya (GoK) Chemist, the Ministry of Water laboratory, the University of Nairobi in Kenya and several other private laboratories. These registered laboratories will be utilized. The parameters to be tested will include coliform organisms, arsenic, fluoride, nitrate and nitrites and other. All water sources will be tested for both chemical and bacteriological quality before being put to use, according to GoK and USAID guidelines.

- i. Environment Action Plan (NEAP) of Kenya of the Ministry of Environment and Natural Resources. The NEAP report addresses environmental issues in a cross- sectoral and in an integrated fashion.
- (b) Catholic Relief Services standards for community health, poverty lending, gender responsive programming, capacity building.
- (c) Catholic Relief Services complies with USAID environmental compliance procedures.

### **3.0 EVALUATION OF ACTIVITIES/PROGRAM ISSUES WITH RESPECT TO ENVIRONMENTAL IMPACT POTENTIAL**

#### **3.1 Activities associated with the Food Assisted Child Survival (FACS)**

Activities under FACS are not expected to have potential significant (deleterious) effects on the environment, and fall into Categorical Exclusions (CE) as per section 2(c) of 22 CFR 216. Please refer to Appendix I for the specific citations of Regulation 216 for each activity of FACS.

#### **3.2 Complementary Activities**

## Annex D.5

In addition to FACS, CRS will address food security through complementary activities. These complementary activities were listed in section 1.2 number 2 herein.

All complementary activities are small-scale and are not expected to have significant adverse environmental impacts. They are recommended for a **Negative Determination** with conditions for use of the Screening Form and preparation of an Environmental Review when the application of the Screening Form so requires. Items 7, 8, 9, and 10 have no direct impacts on the environment, and will qualify as Category I under the screening form, which will be used to verify that there are no environmental impacts.

The potential environmental impacts of some of complementary activities may be:

- *Under Sustainable Agriculture*
  - insignificant depletion of vegetation
  - soil loss and erosion
  
- *Under provision of potable*
  - deplete/lower ground water table causing damage to agricultural crops or natural vegetation
  - lowering the ground water head/level may affect the yield of other wells e.g. shallow wells
  - increase incidence of diseases (i.e., for dams)
  
- *Under latrine construction*
  - groundwater contamination
  
- *Under small enterprise promotion by providing credit to the poor*
  - no foreseeable affects (note that activities to be promoted by credit will be determined by borrowers)

The physical and topographic conditions, climate, soils, and ecosystems as well as social and economic characteristic that could be encountered are quite variable. Because the specific characteristics and locations of these activities are not definitive, the potential for adverse environmental impacts cannot be excluded until additional information about design and location becomes available. Each therefore, require environmentally sound design and review to determine the specific nature and magnitude of potential impacts. Activities do share the common characteristic of being small in scale. The complementary activities are small. The funds are limited to \$200,000 for all the complementary activities. Also, the implementing partners prefer small-scale initiatives that reach between 50 - 300 families.

### **4.0 RECOMMENDED MITIGATION ACTIONS (INCLUDING MONITORING AND EVALUATION)**

This IEE evaluates each of the main FACS and complementary activities.

#### **a) For Activities associated with the Food Assisted Child Survival (FACS)**

The activities under FACS fall into Categorical Exclusions (CE) as per section 2(c) of 22 CFR 216 hence require no further mitigation.

#### **b) For Complementary Activities**

Complementary activities are expected to have no significant adverse impact on the environment, and, therefore, a Negative Determination (ND) with conditions is preferred. Due to the factors outlined above, CRS/Kenya proposes to prepare and submit this screening forms and environmental reviews under umbrella IEE.

#### **4.1 Recommended planning approach**

##### **Complementary Activities**

The complementary activities will be in the field of Sustainable Agriculture, Small Enterprise Development, Water and Sanitation, rural credit and, training/capacity building. The complementary activities will be integrated with FACS activities to maximize participant's benefits. Through this integrated approach, CRS will address, in the most cost effective way, problem of food insecurity in the target communities. For maximum efficiency and effectiveness, these review procedures are to be applied within the context of development plans, natural resource management plans, or land use plans developed for the areas in which the activities will take place.

#### **4.2 Environmental Screening and Review Process for Complementary Activities**

These environmental screening and review procedures specify how the complementary activities to be undertaken by CRS/Kenya, will be examined on an individual basis in order to comply with the determinations of this IEE in accordance with Reg. 216, Section 216.3. These procedures are intended to result in environmental accountability and soundness, by requiring that USAID/Kenya put in place specific mechanisms to promote environmental review capacity and other environmental capacity for the implementing partners. To ensure that the interventions are designed in a sound and sustainable manner, the Mission Environmental Officer (MEO) and/or USAID Project Manager will work with CRS/Kenya and the local implementing partners to achieve compliance with these procedures.

CRS/Kenya is the primary co-operating sponsor of the complementary activities. The Catholic Dioceses of Kenya are by large, the local implementing partners (sub-grantees) for the complementary activities.

These procedures are based upon utilization of a Screening Form. This form is consistent with the "Environmental Screening Form for NGO/PVO Activities and Grant Proposals" contained in the African Bureau *Environmental Guidelines for Small-Scale Activities in Africa*. USAID/Kenya will facilitate the refinement of this form with CRS/Kenya and the REO/MEO to meet project needs and to incorporate, where appropriate, information that will serve to identify any need for environmental assessment in accordance with Kenyan's environmental assessment policy and future legislation.

If it becomes necessary to construct small dams/pans, the Ministry of Water Development guidelines in the design, construction and rehabilitation of small dams in Kenya will be used. The guidelines have a section on environmental considerations.

Adherence to the procedures in this IEE, it must be emphasized, cannot be considered in lieu of Kenyan requirements or vice versa. Efforts will be made, however, in the refinement of the Screening Form to dovetail respective assessment information requirements to the maximum extent allowable.

This IEE does not cover pesticides or other activities involving procurement, use, transport, storage or disposal of toxic materials, and any situation dealing with such will require an amended IEE, except to the extent covered in Category 2 of the Screening Form that will be attached.

## Annex D.5

The complementary activities, including grants and sub grants will be individually screened using the Screening Form (to be prepared and sent to USAID/Kenya), which utilizes a four-tier categorization process consistent with Africa Bureau's *Environmental Guidelines*. The complementary activities are categorized as below.

**Category 1:** *Activities that do not require environmental review under the Environmental Screening Form.*

- community training
- community organization and mobilization
- technical assistance
- small enterprise promotion by providing credit to the poor

**Category 2:** *Activities that would normally qualify for a negative determination under Reg. 216, based on an environmentally-sound approach to the activity design and incorporation of appropriate mitigation and monitoring procedures.*

- sustainable agriculture with emphasis on soil fertility improvement by using farm yard manure and/or compost, practicing organic farming, crop rotation, mixed farming and minimizing land degradation
- improving agricultural production by facilitating access to high quality germplasm, credit for draught animals and improving extension services to small holder farmers
- agroforestry practices
- increasing livestock production through training small holder farmers in livestock management and offering them credit to purchase bulls and dairy animals
- providing potable water using shallow wells, bore holes, small earth dams/pans and protecting springs
- improving sanitation by constructing pit latrines

CRS/Kenya will employ the Screening Form (to be refined as needed with consultation with the REDSO/REO or REA) and the Environmental Review Reports prepared as a result of the categorization process to evaluate activities/or proposals. CRS/Kenya will ensure that all proposals from the local implementing partners (sub-grantees), seeking to implement any of the above referenced complementary activities, must comply with Advisory Committee approval criteria and review procedures, which will also include this requirement for environmental screening and review, as well as any other CRS/Kenya or USAID/Kenya requirements designed to ensure developmentally sound and sustainable activities.

An Environmental Review Report shall be prepared for all Category 2 activities. The MEO or Mission Director, or Acting Director, on behalf of USAID/Kenya, shall be responsible for clearances on category determination and Environmental Review Reports. Since majorities of complementary activities fall within Categories 1 and 2, they can be approved locally by USAID/Kenya without further external review.

Each activity will be proposed based on need arising from communities following mobilization and training by FACS program. In planning and design of these activities, approved procedures and standards will be used to reduce adverse environmental effect.

A project proposal will be prepared for each specific intervention and location. The proposal format is being revised to include environmental issues, and a strong monitoring and evaluation component. Each project proposal is vigorously reviewed at several different levels, starting internally within CRS Kenya by



competent staff members. Only project proposals which meet the review criteria are submitted to the Regional Technical Commission (RTC). The RTC members are appropriate CRS regional technical staff. Key staff members from the region, who are members of the RTC, have received training on USAID Environmental Compliance Procedures. The CRS Regional Office oversees the review process and maintains a high standard of project conceptualization before approval/funding is authorized.

Catholic Relief Services commit to USAID/Kenya approval of environmental reviews for the complementary activities under Category 2 for the whole period. CRS/Kenya shall fully co-operate with USAID Mission Environmental Officer (MEO), Regional Environmental Officer (REO) and Bureau Environmental Officer (BEO). CRS/Kenya shall give to USAID/Kenya, an annual report on the status of environmental compliance with regard to complementary activities. The reporting format shall be based on, but not limited to, section 4.0 - 4.5 of Annex F in the Environmental Documentation Manual of 1998.

#### **4.3 Promotion of Environmental Review and Capacity Building Procedures**

The partner organizations will be involved in all stages of project development and this will form part of capacity building. Awareness on the importance of environmental protection already exists among CRS/Kenya partners. In essence, implementation of the complementary activities, for example, agroforestry and sustainable agriculture, will augment sustainable use of the environment.

CRS/Kenya project officers have attended a training workshop on USAID Environmental Compliance Procedures, therefore they will in turn, up grade the capacity of CRS/Kenya local implementing partners through training, monitoring and project development. CRS/Kenya project staff, together with partners, will include environmental indicator in project monitoring and evaluation systems. Environmental monitoring and evaluation process will be put in place and used by CRS/Kenya, its partners, in collaboration with USAID/Kenya and the following Kenyan Government agencies:

- a) Ministry of Environment and Natural Resources specifically, the Kenya National Environment Secretariat
- b) Ministry of Agriculture
- c) Ministry of Water Resources

CRS/Kenya and its partners will continue applying appropriate Kenyan Environmental assessment policies and procedures.

#### **4.4 Environmental Responsibilities**

1. USAID/Kenya will be responsible for environmental review and decision making for all USAID assisted CRS/Kenya complementary activities.
2. CRS/Kenya undertakes to work with the local implementing partners to ensure that proposals for the complementary activities take into consideration potential environmental impacts and their mitigation, including avoidance, and will design the complementary activities with an environmental monitoring system in place.
3. The local implementing partners (sub grantees) and CRS/Kenya will use the Screening Form to categorize proposals, and the MEO will review and pass on to the REO and BEO any category 3 or 4 and, as he/she determines, some Category 2 activities.

#### Annex D.5

4. The local implementing partners for the complementary activities, with assistance of CRS/Kenya, will ensure implementation of agreed upon mitigation measures and environmental impact monitoring.
5. USAID/Kenya's Food for Peace Officer will be ultimately responsible for monitoring environmental impacts of all project-financed activities, as further specified below (Section 4.5).
6. Periodic visits of the REO or REA will also be requested for advice, refresher training and validation that environmental processes are in place.

#### **4.5 Mitigation, Monitoring, and Evaluation**

CRS together with implementing partners will incorporate appropriate mitigation and monitoring procedures as follows:

By utilizing the Environmental Guidelines for Small-Scale activities in Africa to assist them in determining what potential impacts should be of concern for different complementary activities in various settings. Thereafter, CRS/Kenya will determine which impacts to mitigate and monitor for each complementary activity.

- by abiding by appropriate policies, procedures and regulations contained in the National Environment Action Plan (NEAP) of Kenya, Agricultural Act and Water Act of Kenya and other environmental enforcing agencies
- by including environmental issues as a part of the project planning process
- by including environment indicators, and monitoring effects as a part of the overall Monitoring and Evaluation System.

CRS/Kenya and the local implementing partners commit to identify in each proposal each proposal for funding of complementary activities, and in the accompanying environmental review reports all proposed environmental mitigation and monitoring requirements.

The generic monitoring and mitigation measures CRS/Kenya will put in place for some of the complementary activities falling in Category 2 are summarized in the Table 1 below. The mitigation and monitoring activities, specifically defined, will be incorporated within the specific Environmental Review report for each activity or groupings thereof.

**An Illustrative Table 1:  
Monitoring and Mitigation Procedures for Complementary Activities**

<b>Activity</b>	<b>Sub Activity</b>	<b>Monitoring</b>	<b>Mitigation measures</b>
Improving Agricultural Production	land tillage	soil erosion depletion of vegetation	- contour farming - terracing - planting trees (agroforestry)
Providing potable water	constructing shallow wells, bore holes, small earth dams/pans	deplete/lower ground water table incidence of diseases (i.e., for dams)	- avoid wells being close by. - regular monitoring of water levels - water quality testing will be carried out for arsenic, coliform, nitrates and nitrates in accordance with USAID and GoK guidelines.  - proper sealing of wells top - proper drainage around wells -introducing fish in the dams - fencing around the dams - provide livestock drinking troughs
Improving sanitation	constructing pit latrines	ground water contamination	- proper siting of latrines -latrines to be at least 30 m from wells - proper drainage around the latrines

Since the complementary activities are not yet fully defined, the specific monitoring and mitigation procedures might vary at time of implementation.

Once the environmental review reports are approved, the mitigative measures and monitoring procedures stated in the environmental report shall be considered a requirement.

The local implementing partners, with the assistance of CRS/Kenya and other appropriate partners will be responsible for the implementation of the agreed-upon measure and monitoring of impacts. All periodic

## Annex D.5

reports of CRS/Kenya and its local implementing partners, under these procedures to CRS/Kenya, and of CRS/Kenya to USAID/Kenya shall contain a section on environmental impacts, success or failure of mitigative measures being implemented, results of environmental monitoring, and any major modifications/revisions to the complementary activities, mitigative measures or procedures.

USAID/Kenya ultimately is responsible for:

- Monitoring and evaluation of activities after implementation with respect to environmental effects that may need to be mitigated, a process which should be integrated into the Mission's pertinent Performance Monitoring and Evaluation Plan;
- Review of CRS/Kenya reports with respect to results of environmental mitigation and monitoring procedures;
- Incorporating into Mission field visits and consultation with implementing partners periodic examination of the environmental impacts of activities and associated mitigation and monitoring; and
- Reporting on implementation of mitigation and monitoring requirements as part of the summary of activities and their status that is passed to the REO and BEO.

### 5.0 SUMMARY OF FINDINGS

#### a) For activities associated with the Food Assisted Child Survival (FACS)

The activities under FACS fall into Categorical Exclusion (CE) as per section 2(c) (2) of 22 CFR 216. The specific citations are 216.2(c) (2)(i), 216.2(c) (2)(iii), 216.2(c)(2)(viii), and 216.2(c)(2)(xi), hence require no mitigation.

#### b) Complementary Activities B Negative Determination with conditions (Umbrella IEE)

This Initial Environmental Examination (IEE) satisfies the conditions of the environmental procedures for umbrella activities and delegation of environmental review responsibilities to Missions for PVO/NGO umbrella-type projects (Cable 95 STATE 257896). A screening form and environmental reviews will be prepared.

### Environmental Determinations

#### *Negative Determination with Conditions (Umbrella IEE)*

Based on environmental review procedures, promotion of environment review capacity building monitoring, evaluation, and mitigation procedures specified in this IEE, to which the Mission commits itself, a **Negative Determination with Conditions (Umbrella IEE)** is recommended for complementary activities of FACS. The complementary activities of FACS for which use of the umbrella IEE process is recommended are:

- I. sustainable agriculture with emphasis on soil fertility improvement by using farm yard manure and/or compost, practicing organic farming, crop rotation, mixed farming and minimizing land degradation;
- II. improving agricultural production by facilitating access to high quality germplasm, credit for draught animals and improving extension services to small holder farmers;
- III. agroforestry practices;

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- IV. increasing livestock production through training small holder farmers in livestock management and offering them credit to purchase bulls and dairy animals;
- V. providing potable water in shallow wells, bore holes, small earth dams/pans, de-silting of earth dams, by rain water harvesting and protecting springs;
- VI. improving sanitation by constructing pit latrines;
- VII. community training;
- VIII. community organization and mobilization;
- IX. technical assistance and
- X. small enterprise promotion by providing credit to the poor.

This IEE specifies a set of steps, in accordance with the Africa Bureau's *Environmental Guidelines for Small-Scale Activities in Africa*, to ensure adequate environmental review of USAID supported activities, including capacity building elements. This negative determination is also conditioned on the provision of supplemented project technical assistance and training support to augment existing efforts. These capacities will be developed and implemented in close collaboration with USAID/Kenya and CRS/Kenya local implementing partners.

**The screening form will be used to confirm a Categorical Exclusion** for these complementary activities: community training, community organization and mobilization, technical assistance, small enterprise promotion by providing credit facilities to the poor. They have no physical intervention and no direct effects on the environment pursuant to 22 CFR 216.2(c)(2)(i). These activities will be grouped under Category 1 in the Screening Form to be prepared.

**APPENDIX 1: SUMMARY OF IEE ACTIVITIES AND EXPECTED DETERMINATIONS****GOAL: CONTRIBUTE TO THE REDUCTION IN INFANT AND CHILD MORTALITY AND MOBILITY THROUGH IMPROVED KNOWLEDGE**

SUB-GOAL: IMPROVED UTILIZATION OF FOOD BY PREGNANT/LACTATING WOMEN AND CHILDREN UNDER THE AGE OF 24 MONTHS.

**SO1: Improved health status of women and children**

IR1: Improved infant feeding practices

IR2: Improved nutritional status of children

IR3: Improved maternal and newborn care

**SO2: Developed sustainable community structures for the health of women and children**

IR1: Transition from center based to community based health care

Types of Activities	Geographical Location. (provinces)	Sites/ Projects (districts)	Scale & Quantity	Unit	% of Title II	Expected Determination
Community training on child survival	-Nyanza -N. Eastern -Semi-arid communities (see districts to the right)	-Homa Bay, Suba - Tana, Lamu - (s-arid) Laikipia, Nyandarua, Nyeri				CE 216.2(c)(2)(i)
Community organization and mobilization	A	A				CE 216.2(c)(2)(i)
Targeted monthly food rations	A	A				CE 216.2(c)(2)(xi)
Community based data collection	A	A				CE 216.2(c)(2)(iii)
Child growth monitoring	A	A				CE 216.2(c)(2)(iii) and 216.2(c)(2)(viii)
Counseling and home visits	A	A				CE 216.2(c)(2)(i) and 216.2(c)(2)(viii)
Provision and distribution of de-worming medicine, iron, folic acid & vitamin supplements	A	A				CE 216.2(c)(2)(viii)
Complementary activities	A	A				216.3(a) (2) (iii) Environmental Guidelines for Small-Scale Activities in Africa.

**ENVIRONMENTAL SCREENING/REPORT FORM  
FOR NGO/PVO ACTIVITIES & GRANT PROPOSALS**  
[See EDM Annex F]

## Annex D.6

### **Preamble for Africare Uganda Food Security Initiative (UFSI): FY 1998 IEE**

Here's an IEE that puts roads under an umbrella procedure. The process used was devised collaboratively by the Cooperating Sponsor and the Mission Environmental Officer. This is NOT the only way to handle roads under an umbrella screening and review process. In Mozambique, for example, the CSs are using a screening and review process that entails use of a specific form for roads that was already in use for roads being funded by the Mission itself. USAID/Tanzania has an IEE process for non Title II roads that is a combination of the process in place in Mozambique and Uganda. Thus, sponsors contemplating roads may wish to consult with USAID/Mozambique (or USAID/Madagascar which has a similar process for roads) or look at other variations.

Some CSs will also have community-proposed (demand-driven) activities that are not roads or in which roads are only one possibility among a variety of interventions. Under such circumstances, the more generic environmental screening and review process described in Annex F would be more applicable.



DRAFT (2 October 1997)

INITIAL ENVIRONMENTAL EXAMINATION  
AND REQUEST FOR A CATEGORICAL EXCLUSION

**PROGRAM/ACTIVITY DATA:**

**Title of Activity:** Uganda Food Security Initiative (UFSI): FY 1998 IEE

**Program/Activity Number:** FFP-G-00-97-00040-00

**Country/Region:** Africare/Uganda

**Funding Begin:** 1 Oct 97    **Funding End:** 30 Nov 01

**Sub-activity Amounts:** N/A

Resource Levels: Commodities (dollar equivalent, incl. Monetization): \$ 4,665,690

Total metric tonnage request: 16,089 MT

202(e) grant: \$ \$ 783,978

**Statement Prepared By:** G. Bellas, Africare Oct 1997 and revised by Karen Menczer, USAID Mission Environmental Officer, May 1998

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

air  water  land  biodiversity (specify)  (potential deforestation) human health  other  none

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

- 1. Categorical Exclusion(s)
- 2. Initial Environmental Examination:
  - Negative Determination: no significant adverse effects expected regarding the proposed activities, which are well defined over life of DAP/PAA. Prepare IEE-
  - without conditions (no special mitigation measures needed; normal good practices and engineering will be used)
  - with conditions (special mitigation measures specified to prevent unintended impact)
  - Negative Determination: no significant adverse effects expected, but multiple sites and sub-activities are involved which are not yet fully defined or designed
  - Umbrella IEE prepared
  - condition agreed to regarding an appropriate process of environmental capacity building and screening, mitigation and monitoring.
  - Positive Determination: IEE confirms potential for significant adverse effect of one or more activities. Appropriate environmental review needed/conducted.
  - EA to be/being/has been (circle one) conducted. Note that the activities affected cannot go forward until the EA is approved.
  - Deferral: one or more elements not yet defined, will not be implemented until amended IEE is approved.

**SUMMARY OF FINDINGS:**

Based on the environmental review presented in this IEE, the following determinations are made:

1. A **Categorical Exclusion** is recommended for training and technical assistance activities in support of the proposed agricultural production/postharvest handling/nutrition programs pursuant to 22 CFR 216.2(c)(2)(i). These activities will not have adverse effects on the environment.
2. A **Negative Determination** (22 CFR 216.3(a)(2)(iii)) is recommended for physical interventions under the agricultural production/postharvest handling/nutrition programs (i.e., provision of agricultural inputs such as improved seed, and hand tools); and for monetization of commodity imports. These activities will not result in adverse environmental impacts.
3. A **Negative Determination with Conditions** (22 CFR 216.3(a)(2)(iii)) is recommended for proposed soil conservation/soil fertility interventions and rural road improvement. These activities involve physical interventions which could result in environmental impacts. The conditions presented in this IEE are intended to make certain that these activities will be implemented and monitored by Africare, in conjunction with its local partners, in a manner which ensures that they have no significant environmental impacts.

Potential environmental impacts (identified in this IEE) of the planned soil conservation/soil fertility activities shall be mitigated by adopting the measures detailed in Section 4.1 of this IEE.

Community road improvement activities shall be implemented in accordance with environmental criteria adapted for Uganda - specific circumstances from USAID/Mozambique, USAID/Madagascar and USAID/Cambodia approved rural road environmental criteria. Local partners, a District Engineer's representative, and Africare's on-site road engineer will be trained to use the criteria to conduct Environmental Reviews (ER). ERs shall be submitted to Mission Environmental Officer for approval prior to beginning rehabilitation work. Local implementation partners will be made fully aware of, and made responsible for adhering to the environmental mitigation and monitoring requirements presented in this IEE and in follow-on ERs.

Proposed community road improvements do not pass through undegraded forest nor do they pass adjacent to protected areas. Road rehabilitation will not indirectly affect undegraded forest nor protected areas.

New activities introduced into the project which are substantively different from those presented in this IEE will require submission of an amended IEE to USAID/Uganda. No activities will be conducted prior to receiving approval of the amended IEE.

This IEE does not cover activities involving assistance for the use or procurement of pesticides or activities involving procurement, transport, use, storage, or disposal of toxic materials, which will require an amended IEE submitted to USAID/Uganda.

Annex D.6

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

**Clearance:**

Mission Director: \_\_\_\_\_ Date: \_\_\_\_\_  
Donald Clark

Food for Peace Office Director: \_\_\_\_\_ Date: \_\_\_\_\_  
W. Tom Oliver

**Concurrence:**

Bureau Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_  
Paul E. des Rosiers

Approved \_\_\_\_\_

Disapproved \_\_\_\_\_

**File No:** \_\_\_\_\_ (AID/W)

**CLEARANCES:**

Mission Project Manager: \_\_\_\_\_ Date: \_\_\_\_\_  
Greg Farino

Mission Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_  
Karen Menczer

Regional Environmental Advisor: \_\_\_\_\_ Date: \_\_\_\_\_  
Charlotte Bingham

Africa Bureau Environmental Officer: \_\_\_\_\_ Date: \_\_\_\_\_  
Carl Gallegos

General Counsel: \_\_\_\_\_ Date: \_\_\_\_\_

**INITIAL ENVIRONMENTAL EXAMINATION****PROGRAM/PROJECT DATA:**

Program Number: FFP-G-00-97-00040-00

Country/Region: Uganda/Africa

Program/Activity Title: Uganda Food Security Initiative (UFSI)

**1.0 BACKGROUND AND PROJECT DESCRIPTION****1.1 Background**

Africare has recently begun implementation of the Uganda Food Security Initiative (UFSI) in the southwestern district of Kabale in support of the national efforts being made by the Government of Uganda to increase food production. Agriculture has been cited as the "engine of economic growth". The strong correlation between agricultural growth and poverty reduction in Uganda is based on the large number of poor rural farmers who derive their incomes from agriculture.<sup>19</sup> The Government of Uganda has articulated several key means of raising rural incomes. Among these are increased agricultural production; improved trunk, feeder, and community roads; and better dissemination of information on agricultural markets, prices, and technology. In addressing many of these issues the UFSI is at the same time addressing the USAID/Uganda Mission Strategic Objectives (SO1) of helping to increase rural household incomes and the GHAI objective of enhancing food security in the Greater Horn of Africa region.

For decades Kabale District has been a key food producing region of Uganda. However, as a result of high population density and intensive land use, the district is rapidly approaching a soil degradation crisis which, if it continues, will render significant areas of land useless for cultivation. While terracing and other soil conservation measures have long been used in the region, they are increasingly neglected, in part due to the pressure to maximize planted areas. In association with declining agricultural productivity, Kabale District is faced with increasing levels of nutrition deficiencies. According to a 1993 World Bank study, with a rate of 54%, Kabale District has the country's highest level of stunting of children (lower than normal height-for-age)<sup>20</sup>.

Kabale District Agricultural Production Unit ranks production and post harvest interventions as top priorities. The National Agricultural Research Organization of the Ministry of Agriculture (NARO) has developed improved yielding varieties of seed and planting stock suitable to the area for crops such as beans, potato, sorghum and maize. Unfortunately, dissemination of the improved varieties is inadequate. The post harvest handling unit of the Kawanda Agricultural Research Station has researched and identified a variety of post harvest handling and storage interventions that could significantly reduce the loss rate of harvested and stored crops, but these also have not adequately reached Kabale farmers.

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<sup>2</sup> Background to the Budget, 1995-1996: Economic Performance and Medium Term Strategy 1995/96-1997/98", Republic of Uganda, Ministry of Finance and Economic Planning, June 1995.

<sup>3</sup> Uganda: Agriculture - World Bank Country Study; The World Bank, 1993.

The rural road system in Kabale District is inadequate for providing farmers with an efficient means for transporting agricultural products to market and is a constraint on expanded extension efforts. While feeder road improvements are currently being carried out at the district level by the Ministry of Local Government, improvements to the network of smaller “community roads”, which connect villages and farms to the feeder roads, are the responsibility of the Local Councils. Often steep terrain or stream crossings present challenges which the rural population does not have the technical or financial resources to overcome. Improvements to these farm-to-market access routes will have a direct impact on lowering production and transportation costs, thus raising income among the rural farming families of the district.

## 1.2 Project Description

The Uganda Food Security Initiative is a multi-year integrated rural development project which will operate in three counties in Kabale District. The overall goal of the project is to improve food security in Uganda thus strengthening the country’s role in enhancing food security for the Greater Horn of Africa. The specific objectives of the UFSI are: to increase the quantity of food available for home consumption and commercial sale in Uganda; improve farm family access to food for home consumption in Kabale District; and enhance household utilization of food in Kabale District. Africare intends to accomplish these goals and objectives through four areas of intervention:

- Monetization of Commodity Imports. Africare proposes to import and monetize, through Agricultural Cooperative Development International (ACDI), up to 16,089 MT of hard winter wheat. This activity will supply a desired high energy commodity to the country, complement locally available soft wheat, encourage the growth of the local flour milling industry, and generate local currency needed to implement UFSI activities.
- Agriculture Production/Postharvest Handling/Nutrition. These interventions will involve providing information and inputs to farmers on improved farm practices such as the use of improved seed varieties and weeding; provide training in organic farming, promoting techniques for decreasing postharvest losses such as appropriate drying and storing methods; and providing education to farm families related to improved dietary and sanitation practices as well as maternal and child nutrition. Twenty-one villages in the sub-counties of Kaharo, Kitumba, and Bubare have been targeted for this assistance.
- Soil Conservation/Soil Fertility. These activities are intended to increase awareness of destructive farming practices and promote terrace construction/maintenance, agroforestry interventions, crop rotation, and zero grazing practices. These activities will be implemented in the 21 targeted villages.

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- **Community Road Improvements.** This intervention will involve providing technical and financial assistance to Local Councils, typically at the parish level (LC3), to improve existing village level farm-to-market roads. The objective of this intervention is to make sufficient improvements so that these roads can provide year round vehicle access for farmers to efficiently transport agricultural products to market. The types of improvements which will be undertaken are all small-scale and will primarily utilize local materials and village-based manual labor, and available machines, where feasible. Typically the individual community road segments to be improved are under 10 km in length, with a total of 120 km of road scheduled for improvement during the five-year implementation period of the project. The Local Council at the district level (LC5) is committed to maintaining the roads once they have been improved.

UFSI staff will take an interdisciplinary, participatory rural appraisal (PRA) approach in working with district and community level organizations to establish long-term, sustainable solutions to the identified household food security problems. For the village based-components of the project, the UFSI will focus on simple small-scale interventions that can be easily organized, carried out, sustained, and replicated. UFSI will make full use of local agencies as implementing partners.

### 1.3 Purpose and Scope of IEE

This IEE, to be included in the 1999 PAA, presents a review of the reasonably foreseeable effects on the environment of the actions proposed under the UFSI. The IEE provides the basis for a threshold decision as to whether an Environmental Assessment or an Environmental Impact Statement will be required.

Adherence to the procedures in this IEE is not in lieu of any environmental assessment procedures required under Ugandan law, nor can adherence to Uganda's environmental procedures be substituted for compliance with the procedures in this IEE. However, efforts will be made to ensure a maximum degree of compatibility of the two respective assessment information requirements.

## 2.0 COUNTRY AND ENVIRONMENTAL INFORMATION (BASELINE INFORMATION)

### 2.1 Country Overview

Despite impressive economic recovery from the disastrous mismanagement during the period 1971-86, Uganda's per capita income level of \$225 USD (an increase from \$170 in 1990) places it in the ranks of the world's poorest countries. Nearly 90% of the population are rural dwellers, making their living from increasingly fragmented smallholder agriculture. Approximately 85% of rural households have an average of two hectares or less for all food, cash-crop, and livestock needs; in many cases this total is split between a number of non-contiguous plots.

In 1995 the total population of Uganda was estimated at 18.4 million, with an annual growth rate of 2.5%. Poverty and population growth represent major sources of pressure on the country's rich natural resource base.

Although not a large country by African standards (241,000 km<sup>2</sup>), Uganda is among the continent's richest countries with respect to its natural environment. Nearly 20% of the national surface area is covered by bodies of water, most notably Lake Victoria. Seven of Africa's 18 biogeographic regions (the highest concentration on the continent) and some 90 vegetation communities are represented. Occupying a transition zone between East African savanna systems and the moist tropical forests of the Congo Basin, Uganda's highly diverse landscape includes rift valleys, highlands and mountain ranges, papyrus swamps, acacia

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savannas, and an extensive network of interconnected rivers and lakes. Pronounced differences in elevation help define Uganda's agro-ecological zones: the Albert Nile valley along the northwestern border with Sudan is just 600 m above sea level, while the Rwenzori mountain range, along the western border with the Democratic Republic of Congo, and Mt. Elgon on the southeastern border with Kenya, exceed 5,000 and 4,000 m respectively. Annual rainfall varies from 500 mm in the arid northeast to over 2000 mm in mountainous areas and along the larger lakes.

Forest and woodland cover has declined in modern times, from an estimated 45% of land area in 1890 to around 21% at present. Agricultural conversion has played a major role in this process, although urbanization, infrastructure development, harvesting of wood fuels, and logging are also factors. Population pressure has increased sharply: population density per unit of land is now more than four times higher than in 1950. Cropland increased by 18% between 1980 and 1990.

### **2.2 Kabale District**

Kabale District is located in southwestern Uganda with Ntungamo and Rukungiri Districts to the north, Kisoro District to the west, and the Republic of Rwanda to the south and east. Kabale District covers an area of 1,827 km<sup>2</sup>. It is divided into four administrative counties including the Municipality of Kabale and is further divided into 22 sub-counties.

Altitudes in Kabale District range from 1,200 m to over 2,300 m above sea level. The topography is dominated by steep hills with typical slopes of 25% to 35%. Long northwest trending ridges form valleys which are generally 400 m to 500 m lower in elevation. Valley bottoms are typically nearly level swamp lands which, in relatively recent times, have been partially drained and are now used for grazing and crops. Located within Kabale District is Lake Bunyonyi which is approximately 20 km long and from 1 to 2 km wide. It is reported to be the second deepest lake in Africa.

Temperatures in Kabale District range from a mean maximum of 23°C to mean minimum of 10°C. The district receives an average annual rainfall of 1,000 - 1,480 mm and has two rainfall seasons. The two agricultural seasons for short rotation crops are March - May, harvesting in June - August and September - December, harvesting in January - March. The long rotation crops, such as sorghum and sweet potatoes, are grown from September - July, with harvesting in August.

The soils of the district are mainly sandy loam volcanic andosols and nitosols. Although the steep terrain subjects these soils to soil erosion, they are moderately fertile and can support vegetables, legumes, bananas, coffee, and other food crops and livestock. Anti-erosion bunds with natural grass and in a few cases planted elephant grass are common features forming a terrace landscape. Mineral fertilizers are, for the most part, not used and even manuring generally only occurs on fields close to homesteads. The major crops grown in Kabale District are sweet potatoes, sorghum, beans, Irish potatoes, field peas, maize, wheat, and vegetables. Sorghum is the main cash crop. Few families keep cattle, while small stock (goats, sheep, pigs, poultry) are kept by most families. The animals are grazed on marginal hill land, valley bottoms, roadsides, and interseasonal fallows. Trees are found around homesteads and in small woodlots. They are mainly eucalyptus and black wattle.

Kabale District is one of the most densely populated districts in Uganda with a total population of 483,846 (projected from 1991 census) and a population density of about 265 persons per sq km. Of the total population, 111,285 are women between the ages of 15 - 49. The people are Bakiga, a Bantu speaking ethnic

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group. Their major occupation is subsistence farming. The land tenure system is customarily private land ownership. Over 95% of the population in Kabale District is rural and land is scarce with most of the farm families owning or controlling less than one hectare. The household size averages between 6 and 10 people. The homesteads are found mainly in the valleys with a few on the slopes. The slopes and ridge tops are otherwise completely cultivated with terraced plots. The family is the main source of labor. Hired labor is sometimes used where people have small families or are aged and do not have relatives in the area. Labor is also used in exchange for renting land for the season by those who do not have enough land. Women and children are mainly responsible for farming and taking care of the home. The men are engaged in off-farm activities such as building and maintaining the home, fencing, and employment often outside the district.

### **2.3 Uganda Environmental Policies and Procedures**

The Uganda Environment Statute of 1995 establishes general principles for environmental management in Uganda as well as requirements for environmental planning at both national and local (district) levels; a framework for environmental impact assessment (EIA); requirements for adoption of environmental standards; environmental management measures for sensitive resources; provisions for environmental restoration orders; and other requirements. EIA guidelines and standards have recently been finalized. The development of both the Statute and the implementing regulations for environmental review was influenced considerably by USAID technical assistance. As a result, the regulations and processes in place closely resemble those of the United States.

## **3.0 EVALUATION OF ENVIRONMENTAL IMPACT POTENTIAL OF PROJECT**

### **3.1 Introduction**

Many of the proposed UFSI activities are either training oriented or very small-scale and as such will have little or no direct effect on the environment. There are, however, some aspects of the proposed interventions which, unless carefully implemented and monitored, could potentially result in negative environmental effects.

### **3.2 Monetization**

Monetization of commodity imports, which is the funding mechanism for the UFSI, is being carried out by ACDI. This process of import and sale of wheat at market prices will involve sea and land transportation, storage, and some packaging activities all of which will utilize existing infrastructure. Therefore there is limited present or future impacts to the environment anticipated from this intervention.

### **3.3 Agricultural Production/Post Harvest Handling/Nutrition**

The village-based activities planned under this group of interventions are primarily training oriented but will include the provision of some agricultural inputs such as improved seeds and hand tools. UFSI will not supply or promote the use of agricultural chemicals.

The input of improved seeds is intended to increase farmers' yields. The traditional practice of obtaining seed from the annual harvest has, over time, led to a degradation of seed quality. UFSI, through a local implementing partner, will assist farmers in obtaining high-quality sanitized seeds to enhance the yields from their farms. The source of these seeds will be institutions such as Kaleyengere and Kawanda Research Stations as well as commercial seed growers sanctioned by the government of Uganda. Given that the



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provision of this input will be limited to seeds for crops which are currently grown in the District, there is no foreseeable environmental impact as a result of this activity.

UFSI will also assist in the construction of simple home-based food storage systems. While this is a physical activity, because of its scale it is unlikely to have any adverse affect on the environment.

UFSI will not fund activities involving assistance for the use or procurement of pesticides without submitting an amended IEE to USAID/Uganda.

This component will not result in the conversion of natural areas, such as swamp and forest, to agricultural land. Because agricultural productivity will be increased, there will be less need to clear additional land for crops. See Table 1 for a breakdown of potential environmental impacts and mitigation measures.

### 3.4 Soil Conservation/Soil Fertility

While project interventions related to soil conservation and soil fertility are primarily training activities on the part of the UFSI and local partners, when implemented by the participating farmers they have a potential for environmental impact. UFSI intends these impacts to be positive, and to improve the deteriorating environmental condition in Kabale; and any unintentional or unavoidable adverse effects will be kept to an absolute minimum. The following activities have some potential for affecting the environment:

- Soil conservation and soil fertility enhancement using agroforestry interventions. This activity, to be implemented by a local partner, will be a comprehensive program aimed at promoting the establishment of fodder producing hedgerows, tree crops for fallowing, and wood lots on slopes which are inappropriate for tilling. The highly defined fixed-duration program held in interested participating villages will include formal training, field trips to demonstration plots and successful farm applications, provision of seedlings and tools, work sessions, and follow up visits. There are few adverse environmental impacts, short or long-term, envisioned as an outcome of these activities. The program will, however, involve the propagation of exotic as well as native tree species, and if not well designed or monitored, this could result in uncontrolled spread of a particularly aggressive species or in the introduction of new pests into an area. Mitigation measures are detailed in the next section.
- Soil conservation and soil fertility workshops. These short duration workshops are intended to promote construction and maintenance of terraces and other erosion control techniques such as grass strips, minimal tilling, and zero grazing. Soil fertility enhancement through crop rotation and organic farming techniques will be emphasized. The introduction of chemical fertilizers will not be a UFSI activity. The workshops will primarily be training activities which will likely also include tool distribution. Little negative environmental impact is anticipated as a result of the activities promoted other than the possible adverse health effects of increased handling and concentration of animal waste near homesteads as a result of the promotion of zero grazing. Mitigation measures are detailed in the next section. The retention of natural woody vegetation for wind breaks, erosion control, and boundary markings will help promote forest conservation and decrease the area cleared for agriculture.  
See Table 1 for a breakdown of potential environmental impacts and mitigation measures.

### **3.5 Community Road Improvements**

More than any other component of the USFI, the Community Road Improvement activities will result in direct physical effects on the environment. However, if these roads are properly designed, carefully constructed, and regularly maintained, there is likely to be a net improvement on the present conditions of uncontrolled soil erosion on the typical existing non-engineered, poorly maintained community road. In addition to the needed financial and material inputs, UFSI will provide the Local Councils with technical assistance to evaluate the environmental impacts of the proposed community road activities. Besides direct environmental impacts, road rehabilitation could result in indirect environmental impacts. The environmental criteria/environmental review process detailed in section 4.2 will ensure that direct and indirect environmental impacts are evaluated and that negative environmental effects are minimal.

The road improvement activities are small-scale and will typically be undertaken with manual labor, although mechanical labor (bulldozer, grader, compactor) will be used as necessary and where possible. The construction activities and the potential environmental impacts include:

- Clearing of right of way. Potential environmental impacts include loss of arable land, loss of vegetation, and possible soil erosion during and immediately after construction.
- Limited road widening typically involving cut and fill on hillsides. Potential environmental impacts include increased soil erosion and minor failures of cuts until stabilized with vegetation, and loss of vegetation.
- Drainage improvements such as road side ditches and cross drainage culverts. Potential environmental impacts include concentration of flow causing gully formation and erosion at culvert outfalls.
- Addition of fill to cross valley bottom land. Potential environmental impacts include loss of wetland vegetation and altering of natural water courses.
- Installation of culverts at stream crossings. Potential environmental impacts include constriction of channel flow resulting in upstream flooding.
- Improved road surface material (gravel) and grading in some locations. Potential environmental impacts include water ponding in abandoned borrow pits and creating breeding grounds for mosquitos. In addition, the use of a motor grader will create dust during operation.

After improvements are completed there will be an inevitable increase in traffic on the community roads. This will likely result in an increase in dust, noise, and possibly traffic accidents. In addition, there may be a greater population concentrated along the road.

## **4.0 RECOMMENDED MITIGATION MEASURES, CRITERIA, MONITORING, AND EVALUATION**

### **4.1 Mitigation Measures for Soil Conservation/Soil Fertility Interventions**

- To the extent that exotic tree, shrub, or grass varieties are introduced into the area, UFSI will ensure

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that these are well tested, non-nuisance varieties approved by the Government of Uganda, Ministry of Agriculture.

- Inputs of seedlings to any group or individual will include a variety of plant species.
- If improved seed, treated with material toxic to humans, will be dispensed to farmers, UFSI staff will ensure that warning labels are intact, and that end-user awareness is incorporated into the UFSI extension service. UFSI will provide field workers involved with dispensing seed and monitoring its use, training in safe handling and use of treated seed.
- In conjunction with soil conservation and soil fertility workshops, the concerns and costs of chemical inputs will be emphasized.
- In association with the promotion of zero grazing activities, training will emphasize the need for proper handling of animals and animal waste.

### **4.2 Environmental Criteria for Community Road Improvements**

The full spectrum of environmental impacts of road improvement can only be evaluated and mitigated on a site-specific basis. Most importantly, to assess indirect and cumulative impacts of rural road upgrade, site-specific information is necessary.

Therefore, this IEE sets up an umbrella process of environmental review. Environmental criteria will be developed to guide a reviewer through a site-specific Environmental Review (ER). An ER will be conducted for each segment, and submitted for MEO approval prior to beginning repair activities. The umbrella process will ensure that the BEPs are implemented; and that site-specific analysis is conducted, environmental concerns are assessed, potential impacts mitigated, and indirect and cumulative effects are considered for each segment.

Environmental Criteria for community road improvements will be revised from already approved criteria in use in other USAID missions and they will be submitted to BHR/BEO for project files. The USAID/Uganda MEO will train relevant UFSI partners to use the environmental criteria, and to conduct an ER. Africare will be responsible for submitting ERs for MEO approval prior to beginning repair activities. If, based on the ER, MEO determines that a significant impact could result from rehabilitation activities, UFSI will be notified that work must not begin until an EA is conducted and approved. BEO will be notified in the case of possible significant impacts; otherwise the MEO will approve the ER (with or without conditions), and repair work may begin.

The ER should require approximately one field day/segment ( $\leq 10$  km), and the ER will be approximately three pages in length plus maps of the road segment showing baseline data and areas of concern. The ER will consist of a field check of the baseline environment at the site of the road segment; an evaluation of the potential environmental effects of the proposed action; an analysis of the indirect effects, with emphasis on the potential for increased migration into the area due to road repair (both positive and negative effects) and effects of possible changes in farming strategies (subsistence versus cash crop); and site-specific mitigation measures recommended to minimize environmental impacts, direct (using BEPs established in this IEE and others developed during on-site review) and indirect.

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In addition, Section 118 of the Foreign Assistance Act requires that “the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands must be conducted in compliance with an Environmental Assessment (EA).” The USAID/Uganda MEO has determined, through a field check of the proposed road segments, through maps and interviews, that roads proposed for upgrade pass through land under cultivation, villages, and small tracts of eucalyptus. Proposed road upgrades do not pass through relatively undegraded forest. If during the ER, reviewer finds that a segment passes through relatively undegraded forest, an EA must be conducted prior to beginning repair, and the ER should include notification of this. USAID/Uganda MEO will then notify BHR/BEO.

### **4.3 Promotion of Environmental Review and Capacity Building**

Africare intends to carry out most of the activities of the UFSI through a variety of contract and sub-grant arrangements with local implementing partners. While these local partners will be given comprehensive responsibility for implementation of various project activities, the objective and detailed scope of work for a given activity will be clearly established. Contracts, letters of understanding, and other types of formal agreements will be the norm. Within this framework, relevant environmental mitigation and monitoring measures established in this IEE will be incorporated into the agreements with local partners.

In addition, UFSI staff will strive to sensitize local government agencies and NGOs, which have less formal relationships to the project, to the environmental issues associated with project implementation. All local partners involved with project activities which have a potential for environmental impact will be given a copy of the USAID Africa Bureau Environmental Criteria for Small-scale Activities in Africa (June 1996).

### **4.4 Monitoring and Evaluation**

During the five year UFSI implementation period, Africare is required to monitor and evaluate the project's success against indicator benchmarks. Africare is designing a Monitoring and Evaluation (M and E) Plan which will incorporate the monitoring of environmental indicators into this program. Specifically, UFSI will carry out the following monitoring activities related to the soil conservation/soil fertility and community road improvement interventions.

#### Soil Conservation/Soil Fertility:

- UFSI will monitor the type and mix of trees and shrubs which are being supplied to farmers participating in agroforestry programs to ensure that they are well tested, non-nuisance varieties approved by the Government of Uganda, Ministry of Agriculture.
- Where zero-grazing practices have been promoted, UFSI will monitor the sanitary conditions in and around animal enclosures, and if determined to be necessary, will initiate additional training in the proper handling of the animals and animal waste.

#### Community Road Improvements:

- During the design, layout, and construction phases of each road improvement project, UFSI will monitor activities to ensure that the recommended mitigation measures are incorporated into the work, and that ERs are carried out as required.
- The integrity of the completed road improvements will be checked after the first heavy rain and at three month intervals for one year. Specific indicators that will be monitored include formation of

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gullies in roadside ditches, on road surfaces, or on adjacent slopes affected by the work; soil erosion at culvert outfalls; stability of cut and fill slopes; and reestablishment of vegetation along right of way and borrow areas.

- UFSI will take responsibility for coordinating any remedial action which is required within the first year of completion of the road improvements.
- Upon completion of each road improvement project, UFSI will formally notify the Local Council at the district level (LC 5) that it is officially responsible for implementing the road maintenance program according to their agreement. After three months this will be followed up to confirm that appropriate arrangements have been made.
- UFSI will monitor the implementation of any mitigation measures required and/or conduct additional monitoring as required in the site-specific ERs.

USAID/Uganda will:

- Assist in designing rural road environmental criteria and provide training in using the criteria so that on-site UFSI staff can conduct ERs.
- Review and approve ERs for each road repair segment.
- Review UFSI reports on results of environmental mitigation and monitoring activities.
- Incorporate into Mission field visits and consultations with UFSI staff, field examination of the environmental impacts of activities and feedback on mitigation and monitoring.
- Report on implementation of mitigation and monitoring requirements as part of the summary of activities and their status based on monitoring reports submitted by Africare.
- Assist Africare to monitor and evaluate activities after implementation with respect to environmental effects that may need to be mitigated.

### 5.0 SUMMARY OF FINDINGS:

Based on the environmental review presented in this IEE, the following determinations are made:

1. A **Categorical Exclusion** is recommended for training and technical assistance activities in support of the proposed agricultural production/postharvest handling/nutrition programs pursuant to 22 CFR 216.2(c)(2)(i). These activities will not have adverse effects on the environment.
2. A **Negative Determination** (22 CFR 216.3(a)(2)(iii)) is recommended for physical interventions under the agricultural production/postharvest handling/nutrition programs (i.e., provision of agricultural inputs such as improved seed, and hand tools); and for monetization of commodity imports. These activities will not result in adverse environmental impacts.
3. A **Negative Determination with Conditions** (22 CFR 216.3(a)(2)(iii)) is recommended for proposed soil conservation/soil fertility interventions and rural road improvement. These activities involve physical

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interventions which could result in environmental impacts. The conditions presented in this IEE are intended to make certain that these activities will be implemented and monitored by Africare, in conjunction with its local partners, in a manner which ensures that they have no significant environmental impacts.

Potential environmental impacts (identified in this IEE) of the planned soil conservation/soil fertility activities shall be mitigated by adopting the measures detailed in Section 4.1 of this IEE.

Community road improvement activities shall be implemented in accordance with environmental criteria adapted for Uganda - specific circumstances from USAID/Mozambique, USAID/Madagascar and USAID/Cambodia approved rural road environmental criteria. Local partners, a District Engineer's representative, and Africare's on-site road engineer will be trained to use the criteria to conduct Environmental Reviews (ER). ERs shall be submitted to Mission Environmental Officer for approval prior to beginning rehabilitation work. Local implementation partners will be made fully aware of, and made responsible for adhering to the environmental mitigation and monitoring requirements presented in this IEE and in follow-on ERs.

Proposed community road improvements do not pass through undegraded forest nor do they pass adjacent to protected areas. Road rehabilitation will not indirectly affect undegraded forest nor protected areas. New activities introduced into the project which are substantively different from those presented in this IEE will require submission of an amended IEE to USAID/Uganda. No activities will be conducted prior to receiving approval of the amended IEE.

This IEE does not cover activities involving the use or procurement of pesticides or activities involving procurement, transport, use, storage, or disposal of toxic materials, which will require an amended IEE submitted to USAID/Uganda.

## **ENVIRONMENTAL CRITERIA FOR COMMUNITY ROAD REHABILITATION**

### **BACKGROUND**

As required by USAID Environmental Procedures, an Initial Environmental Examination was conducted on the Africare UFSI Title II Program, and a Conditional Negative Determination for community road improvements was issued by the Bureau of Humanitarian Relief (BHR) Bureau Environmental Officer (BEO) in USAID/Washington. This decision means that road improvements are not expected to result in adverse environmental impacts, provided that environmental criteria are followed. This document contains the environmental criteria that must be used to plan, design, implement, and monitor activities to ensure adverse environmental impacts do not occur.

### **PHILOSOPHY OF ENVIRONMENTAL REVIEW**

USAID is required by law to ensure that environmental factors and values are integrated into its decision making process, and to assess the environmental effects of its actions. But not only does USAID view the environmental review process as a legal requirement, it is also one of the best practical methods to incorporate the views of partners/collaborators/beneficiaries, and to guarantee that environmental aspects are considered and integrated into all phases of a project.

Besides specific environmental procedures that USAID must comply with to minimize adverse environmental effects of its actions, USAID must also deny financial assistance for: the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands unless a formal Environmental Assessment is conducted.

Therefore, these environmental criteria are for use only in cases where there is no undegraded forest. USAID-Africare field checks have confirmed that planned community road improvement activities in Kabale District will not pass through relatively undegraded forest.

### **ROLES AND RESPONSIBILITIES**

Use of these environmental criteria constitutes the "Environmental Review" (ER) of the activity (road rehabilitation/ repair/maintenance). Each road segment will go through an ER. The report to be submitted (by Africare to USAID/Uganda's Mission Environmental Officer - MEO) documenting the process of using these environmental criteria is called the "Environmental Review Document" (ERD). An ERD should be submitted for each road segment (it is up to the Environmental Reviewer to define "segment," however, every stretch of road to be repaired must have an ER completed prior to construction).

Africare has the ultimate responsibility to ensure that ERs are carried out as necessary, and that USAID receives the appropriate ERD. Africare should ensure that all those responsible for, and involved in road rehabilitation and maintenance, including beneficiaries, have the chance to participate in ERs.

The principal person(s) responsible for using the environmental criteria (roles to be assigned by Africare), is speaking for the environment (this includes the human environment, i.e., sociocultural aspects). The ER Specialist must remove her/himself from any other role while conducting the ER. Others involved in

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planning, design, implementation, maintenance, and monitoring will be concerned with engineering aspects, funding aspects, employment aspects, etc. But the ER Specialist speaks for the environment.

### **TIMING AND LEVEL OF EFFORT**

These criteria are designed to be used at all stages of the project: planning and design; implementation; maintenance; and monitoring. The ER is a process involving field observation and discussions with local people and experts. The ERDs that Africare will provide to USAID document that process and analyze the results of the process.

The level of effort for an ER should be commensurate with the expected extent of environmental impacts. Mainly, the ER Specialist should use common sense when determining the level of effort necessary for each ER. An estimate, from field checks of the project area, is that an ER for a typical 10 km stretch of repair work will require one to two days of field time, including on-site interviews and fieldwork. The ERD should normally be approximately a three page report (one page-indirect effects; one page-direct effects; one page-best engineering practices/ mitigation, and monitoring) plus maps. However, the report may be adjusted according to information that is elicited from the fieldwork and interviews.

### **USE OF ENVIRONMENTAL CRITERIA - GENERAL**

These environmental criteria do not purport to contain the full range of environmental impacts that may result from road repair; nor do they contain all possible questions regarding road repair activities and their effect on the environment. They are a framework to guide the ER Specialist, and as questions and issues become apparent, they should be included in the ERD. The ER should be viewed as a learning process for all involved, and so that future ERs will have the benefit of experience, any information deemed useful should be appended to these criteria.

These criteria are not meant to be a technical design guide. Technical design aspects are in the road engineer's realm. The ER Specialist will no doubt use the road engineer's expertise to assist in conducting the ER, and may design a mitigation measure that will require the road engineer to modify his design. But it is not part of the ER Specialist's job to design the technical aspects of road rehabilitation.

The ER should be just as concerned with increasing the possible positive benefits as it is with decreasing the negative effects. Therefore, the ER Specialist should document where the road repair activities are having a positive, as well as a negative, effect, and try to build on the positive.

These environmental criteria are to be used specifically for community road improvement activities. They are designed to evaluate environmental impacts from the repair of community roads designated in Figure 1, "Community Roads System Map." Through field checks by USAID/Uganda's MEO and Africare, potential environmental impacts of repair work of those roads designated in Figure 1 are filtered down to:

#### 1. Direct Impacts

Potential environmental impacts that are at the location of the road repair (on-site) and a direct effect of repair activities.

- Erosion/sedimentation increased
- Drainage pattern altered
- Vegetative cover altered
- Dust pollution increased



## 2. Indirect Impacts

To the extent possible, from field checks and review of documents, these issues have been determined not to be significant. However, typical of indirect impacts, they are difficult to predict, do not necessarily become obvious at the time of project implementation, and are sometimes difficult to link to the project activity - although a link may exist. Therefore, it is critical that the ER Specialist understands all forces acting upon the environment in the project area so that a reasonable prediction of indirect impacts can be made. These criteria will give the ER Specialist tools to help make these predictions.

- Effect on forest cover extent
- Land use changes
- Effect on water availability (quality and quantity)
- Sociocultural changes
- Changes in wildlife populations
- Changes in farming practices

### **STEPS FOR ENVIRONMENTAL REVIEW**

#### **Step 1**

##### **Define the Road Segment and Repair Activities**

In step 1, the ER Specialist will use a map to define the road segment under consideration (location, length, type of road); and will review the construction/engineering plan to determine the specific actions of concern.

Possible actions of concern:

- bridge or culvert repair/replacement
- movement of roadfill material
- side casting of material (temporary or permanent)
- brush cutting
- constructing passing lanes
- mining of roadfill material from borrow pits
- land-take

#### **Step 2**

##### **Assessment of Direct Environmental Impacts**

First, the ER Specialist should review the objective of the road repair--to improve access from where to where?; to improve access for whom?; where is the demand and where is the supply? Is the selected segment the most rational choice to fulfill the purpose or is there another possible choice? If there are other possible routes that will accomplish the same objectives, document them, since later it may become necessary, due to degree of environmental impacts along the chosen route, to search for alternative routes.

To evaluate direct impacts along the chosen segment, the ER Specialist should have a clear picture of the exact actions that will take place: repair directly on the road; repair to culverts/drainage systems beneath the

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road; construction of passing areas along the road; road widening; mining material from borrow pits; road realignments (if necessary to complete a road segment, however, these criteria assume that realignments will be for very minor stretches of the roadway, only where the original alignment is impossible to repair, or where a realignment will benefit the natural environment).

In addition, the ER Specialist must obtain information on the type of construction--mechanical and/or manual that will be used to undertake repairs. Each type of construction method will have particular concerns that go with it.

The ER Specialist must go to the location (including borrow pits) of each action (see list of possible actions of concern under step 1), and evaluate the effect of the action on the environment. In addition to looking at each discrete action, look at the road segment as a whole, and imagine the construction process along the entire road segment.

We know from preliminary field checks by USAID-Africare that potential impacts have been filtered down to:

- Erosion/sedimentation increased
- Drainage pattern altered
- Vegetative cover altered
- Dust pollution increased

Increases, decreases, or other types of changes in the above could affect natural resources of concern. Will the action affect:

- waterways parallel to and/or perpendicular to the road segment or in the vicinity of the road repair.
- drinking water sources (natural waterways or wells).
- wetlands (depressions that contain water or waterlogged soils - of course this depends on the season during which the field check is conducted - however, regardless of the season, there will be evidence in the soil, vegetation, or microgeography of the area to determine if there is a wetland present, i.e, (a swamp).
- other natural vegetation adjacent to the road (shrubby vegetation, forested areas, live fences).
- prime agricultural land.

### Step 2B

#### **Rating the importance of the natural resource:**

The ER Specialist may wish to talk to local people to determine the importance of the natural resource, rather than solely relying on the field check. Some questions to ask to determine the importance of the natural resource are:

Waterway/Wetland:

Is this a source of drinking water or does it flow into a drinking water source?

Are people fishing along the waterway?

Is the water flowing or is it still? (if water is flowing, there may be a fishery resource, and could indicate wildlife habitat; if the water is still, it may be a wetland of value, where aquatic species lay eggs, where wildlife may feed).

Natural Vegetation:

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Does the vegetation support important wildlife populations/species? (forest, shrubby areas, woodlands may be prime wildlife habitat)

Is the shoulder of the road sloping, and the vegetation serving to hold soil in place?

Are live fences mitigating dust pollution?

Are live fences providing wildlife habitat?

If the answer is yes to any of the above, the natural resource is important. The "possible actions of concern" could affect these natural resources, and best engineering practices (BEPs) should be implemented (see annex 2). Implementation of BEPS is probably sufficient to ensure impacts will be minimal. Although BEPs are standard practices, the ER Specialist needs to document the areas of concern, and the BEPs that should be implemented to ensure these areas will not be adversely affected.

If the answer is no to all the above questions, the resource may not be important, and BEPs may not be warranted. The ER Specialist is the judge, and must determine how important the resource is, and if it requires protection against possible impacts. All decisions must be documented in the ERD.

Remember, the environmental review process is not only for decreasing the negative effects, it is for increasing the positive effects. Therefore, if a degraded natural resource (an unimportant resource) could benefit by implementing BEPs, the ER Specialist must determine if this is a worthwhile effort, and document the necessary BEPs.

There may be potential impacts that cannot be mitigated using the BEPs in Annex 2. In this case, the ER Specialist may design other BEPs/mitigation measures. Or if the ER Specialist determines that a natural resource is important, but is unable to design any BEP/mitigation measures to protect it, the ER Specialist will need to bring this to the attention of Africare, Kampala Office. The particular action affecting the resource of importance may need to be deleted from the design plans; or an alternative route which will accomplish the same objectives may need to be chosen, and an ER conducted on it.

The result of this assessment of direct effects should be documentation - a map and narrative - of the specific areas of concern, the specific repair activities of concern, and the BEPs chosen to mitigate impacts.

### **Step 3**

#### **Assessment of Indirect Environmental Impacts**

The ER Specialist must next evaluate the potential for indirect impacts. This will involve discussions with local people, review of landuse maps, if available, and prediction.

This is where the ER Specialist will need to be especially thoughtful and creative because there are no standard procedures for predicting indirect effects nor standard practices for minimizing them.

To assess indirect impacts, the ER Specialist should have a clear picture of the region: Who will benefit as a result of road repair? What areas will the road make accessible that were previously inaccessible? Now that these areas have become accessible, what can be expected to occur (i.e., increased trade in timber products, increased trade in wildlife products, increased migration to the area, increased provision of health services, increased availability of economic opportunities to local people etc.).

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Some of these potential long range outcomes may be positive for the environment, some may be negative. If negative outcomes are predicted, are there any actions that can be taken to offset the negative effects? (see mitigation measures in Annex 3).

Included in this evaluation should be a consideration of what would happen if the road was not repaired (No Action).

This step will result in a short narrative discussion of findings from interviews with local people and with environment/ development NGOs working in the area, and results of the map review.

The narrative should answer the questions:

- How will the road affect extent of forest cover?
- How will the road affect land use?
- How will the road affect the quality and quantity of water availability?
- What sociocultural changes are expected as an outcome of the road repair?
- How will wildlife populations be affected?
- How will the road work affect farming practices (i.e., growing high value crops instead of subsistence?)

In summary, what changes will the road repair bring over a five year period? How will the affected area look in five years?

### Step 4

#### **Final Confirmation of Absence of Relatively Undergraded Forest; Absence of Threatened/Endangered Species; and Effect of Activity on Protected Areas**

This portion of the ERD should be conducted in close coordination with the District Environmental Officer.

The absence of relatively undergraded forest (as defined in Annex 1) along the road segment was confirmed by Africare-USAID field check, as discussed above. The ER Specialist should confirm this finding in the ERD.

If the ER Specialist determines that relatively undergraded forest may be present along the road, the Africare Project Manager must be notified, and he must alert the USAID/Uganda MEO. Further ecological studies may be needed to make the final confirmation; an Environmental Assessment may be needed prior to construction; or that road segment may need to be deleted from repair plans.

USAID-Africare field and map checks confirmed the absence of legally protected areas in the vicinity of road improvement activities. The ER Specialist should confirm through field check, and state in the ERD whether legally protected areas may be affected by the proposed activity. If the ER Specialist finds that repair work may affect protected areas, the notification process described above should be implemented.

The ER Specialist must confirm the absence of threatened or endangered species (TES) by coordinating with the District Environmental Officer and by reviewing available documentation such as District Environmental Plans, State of the Environment Reports, etc. The ER Specialist may find the most effective means of confirming the presence and effect on TES is to coordinate with a local environmental NGO and share the design plans with them. Again, if activities may affect TES, follow notification procedures outlined above.

### Step 5

#### **Develop Environmental Monitoring Plan**

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At this point: The ER Specialist has identified natural resources of importance; identified possible actions that could affect those resources; identified BEPs that will protect them; devised a possible long-range scenario for the region; and developed mitigation measures to ensure the long-range scenario will be positive for the environment.

To ensure that the BEPs/mitigation measures are implemented, and that no unforeseen impacts have occurred, one or more compliance checks will be necessary.

Rather than adding additional reporting requirements, compliance checks can be incorporated into Africare's Monitoring and Evaluation Plan, and reported on to USAID accordingly. If BEPs/mitigation measures required in the ERD have not been implemented, Africare, Kampala must be notified immediately, and remedial action must be taken.

### Step 6

#### **Presentation to, and Discussion with Team**

Prior to finalizing the ERD, the ER Specialist should present the findings to the UFSI Team, and as necessary, to the affected communities. Be prepared to discuss any BEPs or mitigation measures recommended. Make sure the people responsible for final design and repair understand what is required regarding BEPs/mitigation measures. Incorporate relevant comments from the Africare Team into the ERD. Determine who will be responsible for conducting compliance checks and documenting the results in Reports to USAID.

#### **THE ERD PACKAGE**

The ERD must be submitted through Africare to USAID/Uganda's MEO for approval prior to construction. Allow sufficient time between submitting the ERD and construction for Africare, Kampala and the MEO to review and approve the ERD.

The ERD should be a narrative, as discussed above. It should also include maps showing the location of the road segment under consideration and areas/actions of concern. Copies of any other maps that were used to make determinations/assumptions should also be included. The following ERD format should be followed:

- Location maps (Big picture)
- Sketch route with actions and natural resources of concern (step 1 of criteria)
- Narrative with reference to sketch map
  - Direct environmental impacts (step 2)
  - Indirect environmental impacts (step 3)
  - Confirmations (step 4)
- BEP and mitigation measures (narrative and sketch map)
  - For direct impacts
  - For indirect impacts
- Monitoring and evaluation (step 5)
- Document presentation to team and community (step 6)

**Annex 1**

**RELATIVELY UNDEGRADED FOREST DEFINITION**

**Definition:**

Terrestrial broadleaf forest formations not classified as "mosaic" or "secondary."

Relatively undegraded forest "along" or "adjacent to" the road segment is determined to mean relatively undegraded forest within two kilometers on either side of the road segment. This determination of "impact zone" is made based on the topography of the area: steep slopes and hilly; movement is constrained due to few connecting roads or paths. There is little commercial activity and no industrial activity in the vicinity of the road repair activities. Transport is mainly by bicycle or foot. Trade and other commercial activities are mostly limited to adjacent communities.

**Annex 2**

**BEST ENGINEERING PRACTICES**

**BEPs to decrease erosion/sedimentation:**

- Compact road materials timely and properly
- Provide minimal slope on roadside
- Minimize vegetation removal on roadside
- Revegetate slopes where vegetation was removed or destroyed during construction
- Use erosion control barriers (concrete, filter fabric, whatever is available)
- Do not stockpile construction material adjacent to waterways/woodlands or on slopes
- Cover stockpiled material with fabric or other material, as available

**BEPS to avoid obstructing waterflow/to enhance drainage pattern:**

- Provide adequate culvert size and type
- Do not stockpile construction material in waterway or woodland
- Confine construction activities to original road footprint
- Provide bridge or culverts to ensure adequate water and fish passage
- Conduct construction activities in the dry season
- Provide for drainage in low-lying areas to ensure wetlands on both sides of the roadway will receive water flow
- Return areas to original or improved (to enhance drainage/improve wetland condition) contours following construction
- In roadside ditches on steep grades, install masonry check structures and drop inlets to control gully formation
- Provide liberal use of cross drainage culverts and offshoots (discharge points)
- Install rock energy dissipaters at culvert outfalls as necessary to prevent erosion

**BEPs to minimize alteration of vegetative cover:**

- Minimize brush cutting along the roadside--retain or replant live fences
- Do not stockpile material on vegetated areas
- Confine construction activities to original footprint, except where it is necessary to reduce an unacceptable grade or minimize cut and fill
- Keep road width to a minimum
- Revegetate areas where vegetation was removed or destroyed during construction
- Retain tree(s) along the roadside
- Construct passing lanes in areas with natural resources of low importance
- Use manual labor rather than mechanized where protection of natural resources is important

**BEPS To Minimize Dust Pollution:**

- Use low dust, standard road surface materials
- Cover stockpiled material with fabric
- Retain live fences
- Compact road materials timely and properly

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- Do not leave soil surface exposed; revegetate immediately
- Plant tree and hedge buffers between road and homes

#### **BEPS To Minimize Land-Take Issues:**

- Involve communities at all steps in the road rehabilitation process including designing road width, right of way, and alignments; timing of construction activities; and planning for future maintenance.

#### **BEPS TO Minimize Impacts from Borrow Pit Excavation:**

- Limit borrow excavation to banks rather than pits and use a number of smaller sources
- Revegetate after use.



**Annex 3**

**ENVIRONMENTAL MITIGATION: INDIRECT EFFECTS**

Broad categories of possible mitigation measures to ensure forest cover, land use, water availability, wildlife, and sociocultural aspects, including small farming practices, will be affected positively by road repair activities could include:

- Environmental Education
- Agroforestry
- Water provision/sanitation activities
- Community Development Plans

The ER Specialist should use these categories as guidance in developing enforceable mitigation measures. Coordinate with the District Environmental Officer and Education Officer to elaborate on possible mitigation measures. Also, coordinate with interested local environmental NGOs.

This list should be expanded and details added as more is learned from the ER process. The ER Specialist should also use this opportunity to involve other donors, and to provide recommendations to USAID and other donors on possible future initiatives.



PROJECT ACTIVITIES	POTENTIAL ENVIRONMENTAL IMPACTS	RECOMMENDED MITIGATION ACTION	DEGREE OF ENVIR IMPACT (Assuming Mitigation)
<b>1. MONETIZATION</b> A. Sale of Wheat at Market Rates	no negative impacts anticipated		
<b>2. AGRICULTURAL PRODUCTION / POST HARVEST HANDLING / NUTRITION</b> A. Improved Seeds, Tools & Training (no introduction of commercial fertilizers or pesticides) B. Organic Farming Workshops (promote increase in organic material, weeding, ...) C. Post Harvest Handling Workshops (improved drying and storage methods...) D. Nutrition Workshops (improved dietary and sanitary practices, maternal and child nutrition)	no negative impacts anticipated  no negative impacts anticipated  no negative impacts anticipated  no negative impacts anticipated		
<b>3. SOIL CONSERVATION / SOIL FERTILITY</b> A. Agroforestry Interventions (promote hedgerows to stabilize terraces and retain soil, tree crops for fallowing, tree planting on slopes inappropriate for tilling) B. Soil Conservation Workshops (promote terrace construction and maintenance...)	problems with uncontrolled spread of exotic species pest problems with mono-cropping  no negative impacts anticipated	uncontrolled spread not a problem in area because of intense demand for land and fuel, introduce only well tested, non-nuisance varieties approved by GOU introduce a variety of species	
C. Soil Fertility Workshops (promote crop rotation., organic farming	no negative impacts anticipated		

PROJECT ACTIVITIES	POTENTIAL ENVIRONMENTAL IMPACTS	RECOMMENDED MITIGATION ACTION	DEGREE OF ENVIR IMPACT (Assuming Mitigation)
<p>techniques, and provide training in hazards and costs of commercial fertilizer use...)</p> <p>D. Zero Grazing Workshops (promote manual harvest of fodder.....)</p>	<p>concentration of animal waste near homes</p>	<p>in conjunction with soil fertility interventions, promote safe collection and use of waste as organic fertilizer</p>	
<p><b>4. COMMUNITY ROAD IMPROVEMENTS</b></p> <p>A. Planning &amp; Design</p> <p>Staking</p> <p>B. Construction</p> <p>clearing of right of way</p> <p>cut &amp; fill on hillsides (primarily by manual labor - to widen roads or minor realignment where required to reduce grade or minimize cuts)</p>	<p>minor loss of vegetation</p> <p>loss of vegetation, increased soil erosion</p> <p>increased soil erosion, minor failures of cuts</p>	<p>limit clearing to only that required</p> <p>keep design width to min req'd to achieve objective of all-weather vehicle access, re-vegetation</p> <p>heavy reliance on manual labor vs earth moving equipment, keep design width to min req'd to achieve objective of all-weather vehicle access, extensive tree &amp; bush planting along cut &amp; fill slopes</p>	<p>minimal</p> <p>moderate short-term impacts, minimal to no long-term impact</p> <p>moderate short-term impacts, minimal long-term impact or actual improved condition</p>
<p>drainage improvements (roadside ditches and cross drainage culverts)</p> <p>culvert placement at stream crossings</p> <p>fill across swamps (in conjunction with culvert placement)</p>	<p>concentration of flow causing gully formation, erosion at culvert outlets</p> <p>constriction of channel flow,</p> <p>loss of vegetation, altering of water courses,</p>	<p>drop structures or checks in roadside ditches on steep grades, drop inlets at cross drainage culverts, liberal use of cross drainage culverts and outboard offshoots (discharge points), promote vegetation in roadside ditches, rock energy dissipaters at culvert outlets</p> <p>install sufficient number and size of culverts to minimize upstream ponding</p> <p>use existing road alignment, locate culverts and install sufficient number</p>	<p>anticipate reduced impacts compared to typical existing condition of uncontrolled erosion on poorly constructed roads and tracks with steep gradients</p> <p>minimal</p> <p>minimal impact (swamp areas are now actively drained and</p>

PROJECT ACTIVITIES	POTENTIAL ENVIRONMENTAL IMPACTS	RECOMMENDED MITIGATION ACTION	DEGREE OF ENVIR IMPACT (Assuming Mitigation)
<p>road surface (granular material in select areas and use of motor grader on some roads)</p> <p>C. Operations</p> <p>increased traffic</p>	<p>loss of wetlands</p> <p>borrow pits could pond water, grader will create dust</p> <p>increase dust, noise and accidents</p>	<p>and size to minimize altering of water courses or ponding, keep design road width to min req'd to achieve objective of all-weather vehicle access</p> <p>limit borrow source excavation to banks rather than pits, use a number of smaller borrow sources</p> <p>limit improvements to min req'd to achieve objective of all-weather vehicle access without encouraging high speed or use of community roads over feeder roads, extensive tree, &amp; hedge planting along right of way and especially between road and homes</p>	<p>typically used for grazing or crop production)</p> <p>minimal</p>
<p>road maintenance (carried out by LC5 through local manual labor contracts - primarily filling holes and clearing ditches, culvert inlets, and offshoots)</p>	<p>no negative impacts anticipated</p>		