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GUIDELINES FOR THE PREPARATION OF THE INITIAL ENVIRONMENTAL EXAMINATION

U.S. DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT

PREPARED BY:

DAMES & MOORE

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ENVIRONMENTAL CONSULTANTS

JULY, 1976

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July 19, 1976

Mr. Henry A. Arnold
Room 2841
Office of Science and Technology
Agency for International Development
Department of State
Washington, D. C. 20520

Dear Mr. Arnold:

We are pleased to submit 20 copies of our final report "Guidelines for the Preparation of an Initial Environmental Examination." It consists of the following major parts:

- guidance for the preparation of the IEE, including format and content
- criteria for making the first threshold decision
- several sample IEE's representing typical and atypical AID projects

This draft represents a substantial revision of our draft report. It is based on discussions with members of your subcommittee (Alan B. Jacobs, Molly Kux, Leonard G. Rosenberg and Robert Snell) who were most helpful in providing insight to AID policies and activities as well as identifying AID personnel whose particular geographic and sector concerns would have to be reflected in these Guidelines. During the course of our draft preparation we met with:

Robert J. Berg	Charles Jenkins
Marshall Brown	C. David McMakin
James John Claps	Robert M. Mills
Carl Clemmer	John W. Neave
W. Dale Davies	Albert C. Printz
Henry Gruppe	Elizabeth Roche
Hasan Hasan	Wolf von Spiegelfeld

We wish to express our appreciation to all of the AID personnel with whom we met. We realize many of these meetings were held during particularly busy weeks under hurried and rushed circumstances.

Based on the concern expressed regarding ability to understand technical terminology, we have had the draft reviewed by our technical editor as well as by four lay persons not employed by Dames & Moore. They had no difficulty with the Threshold Decision Criteria, except for minor editorial questions. The revised Threshold Decision Criteria reflects the various comments raised during the review process.

We believe that this procedure will be of major benefit to AID in its responding to NEPA requirements.

Very truly yours,

DAMES & MOORE

Allen J. Dresdner, AIP

Peter Newsom

Peter C. Newsom

AJD/PCN/ht

Enc.

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A. INTRODUCTION

It is both a national and an AID policy that consideration of the environmental consequences of a given action be incorporated into the decision-making process (PL91-190; PD-63). Section 102(2) (C) of the National Environmental Policy Act (NEPA) requires that Environmental Impact Statements (EIS) be prepared on proposed major Federal actions which would significantly affect the human environment. In conformance with Regulation 16 (22 CFR 216 et seq.) AID will ensure that the environmental consequences of proposed AID-financed activities are identified, properly analyzed and considered.

AID recognizes its responsibilities to conduct its operations in a manner that mitigates or avoids potential short- or long-term deleterious environmental effects of local, regional, or global proportions. The objective of this document is to build into the early phases of the decision-making process an appropriate and careful consideration of the environmental aspects of proposed actions so that adverse environmental effects may be avoided or minimized, and that opportunities where the environment might be enhanced can be identified.

It is not AID's intention to impose U.S. environmental standards and values on a host country; rather it is to identify and consider the environmental consequences, if any, of an AID action, and to bring these consequences to the attention of the appropriate host country officials.

1. Purpose

The purpose of this document is to provide guidance for making the decision as to whether a given AID project has a significant effect on the human environment. This significance determination is the first step in an orderly environmental reporting process. The environmental decision-making process involves both the significance determination and the recommendation for the type of environmental report required (Negative Determination, Environmental Assessment, Environmental Impact Statement, Negative Declaration).

This guidance will address:

- the format and content of the Initial Environmental Examination which is the document intended to be the basis for a threshold decision on environmental significance; and
- general and specific criteria to assist in making the threshold decision.

2. What is a Major Federal Action?

No one seems to know, or is inclined to say what constitutes a Major Federal Action.

Is it an action which requires an expenditure in excess of $1,000, $10,000 or $100,000; 0.1, 1 or 5 percent of the Agency's budget, or; 100, 500 or 1,000 man hours? In most instances, other agencies have either avoided the issue or have lumped it together with the significance test.

CEQ's guidance with respect to this issue is

limited: "The words "major and significantly" are intended to imply thresholds of importance..." (40 CFR 1500.6 (C))

Taken in the context of NEPA, particularly Sections 102(2) (A) and (B), there seems to be little merit in agonizing over a definition of major. In fact, such a definition may be counterproductive and indeed may frustrate the purpose of NEPA (i.e., to factor environmental considerations into the decision-making process. It is better to risk a certain amount of overkill by relying on the significance tests.

3. What does Significantly Affect mean?

"Significantly affects" describes an action which results in important consequences or changes. It should be kept in mind that changes need not be large to be important. Neither is adverse or beneficial at issue here -- solely importance -- important to someone or something, good or bad. Determining the significance or importance of an action ultimately comes down to a matter of judgment.

The methodology and criteria presented in this document are provided to assist AID officials in making this judgment as it relates to impacts in the U.S., in AID recipient countries, and in the global environment.

B. PREPARATION OF AN IEE

An Initial Environmental Examination (IEE) will be prepared to assess every proposed new activity as well as those that may arise in the major modification of ongoing projects. The IEE will be prepared at the earliest stage of project formulation. The IEE will serve as the basis for the Threshold Decision and will identify (i) whether the activity is a major action significantly affecting the environment, and (ii) which type of environmental report must be prepared.

The "earliest possible stage" shall mean that stage at which the project is well enough defined to review the environmental impacts of the project and to make decisions relating to the significance of those impacts. Ordinarily this is done at the PRP stage or equivalent stage, in any event prior to the beginning of the PP.

1. Official Responsible for Preparing the IEE

The IEE will be prepared by the originator of the project. He will:

a) Obtain the information needed for the preparation of the IEE;

b) Consult with appropriate bureaus and offices, and other appropriate sources of environmental expertise not available within the responsible official's bureau or office, as well as host country personnel, wherever possible and appropriate;

c) Prepare the IEE and ensure that it comprehensively considers the environmental consequences of the proposed activity;

d) Recommend the threshold decision as to whether a Negative Determination should be made or which type of environmental report is required (EA or EIS); and

e) Transmit the IEE with other pertinent project documents.

2. Content of the IEE

An IEE shall fulfill and satisfy, to the maximum extent practical, the information required to make a threshold decision regarding the environmental significance of the proposed project. The IEE should clearly describe the likely environmental impacts of the proposed project and its alternatives to the extent that they can be predicted or anticipated. The IEE is the first formal consideration of environmental impacts in the AID project review and approval process. The IEE, therefore, should be prepared in conjunction with the project documents which it accompanies. Highly technical and specialized analyses of data will not ordinarily be included as part of the IEE, but it is essential that the scope of considerations be as comprehensive as possible.

Following is the content of the IEE:

a) Cover Sheet

Every IEE shall have a cover sheet including:

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT TITLE _____	**RECOMMENDATION** (CHECK ONE)
_____	NEG. DET. ☐
_____	EA ☐
PROJECT NO. _____	EIS ☐
LOCATION _____	NEG. DEC. ☐
BUREAU _____	

RESPONSIBLE OFFICIAL _____ TITLE: _____

DATE _____

DIRECTIONS FOR PREPARING THE INITIAL ENVIRONMENTAL EXAMINATION (IEE)

1. Official Responsible for Preparing the IEE

The IEE will be prepared by the originator of the project. He will:

a) Obtain the information needed for the preparation of the IEE;

b) Consult with appropriate bureaus and offices, and other appropriate sources of environmental expertise not available within the responsible official's bureau or office, as well as host country personnel, wherever possible and appropriate;

c) Prepare the IEE and ensure that it considers the environmental consequences of the proposed activity;

d) Recommend the threshold decision as to whether a Negative Determination should be made or which type of environmental report is required (EA or EIS); and

e) Transmit the IEE with other pertinent project documents.

2. Content of the IEE

The IEE shall fulfill and satisfy, to the extent practical, the information necessary to make a threshold decision regarding the environmental significance of the proposed project. The IEE should clearly describe the likely environmental impacts of the proposed project and its alternatives to the extent that they can be predicted or anticipated. The IEE is the first formal consideration of environmental impacts in the AID project review and approval process. The IEE, therefore, should be prepared in conjunction with the project documents it accompanies. Highly technical and specialized analyses and data will not ordinarily be included as part of the IEE.

Following is the content of the IEE:

a) Cover Sheet

b) Body of the IEE

The body of the IEE shall include:

- A brief description of the environment affected.

A general description of the site or area, its major land and water forms, ecology, climate, land use, population, and socioeconomic characteristics should be included in the IEE. The description of the environment should be in scale with the project and expressed in terms of its likely impacts. Any special cultural features likely to be affected by the proposed action should also be described. The description of the environment should be on the basis of readily available maps and published information. On-site surveys and monitoring are not required for preparation of this section.

- Threshold Decision Criteria form.

This form is an essential element of the IEE and is to be completed as part of the submission.

- Discussion of impacts.

Each of the impacts checked as "Yes" in the Threshold Decision Criteria form is to be identified and discussed. The purpose of the discussion is to succinctly expand on the environmental impacts, both adverse and beneficial, checked in the form. This discussion will briefly describe the major impacts in order to make a reasoned judgment as to the environmental significance of the proposed action.

Based on the impacts identified on the Threshold Decision Criteria form, a brief discussion will be included, if necessary, addressing whether the proposed action significantly affects the global or extra-jurisdictional environment (oceans or air) and/or the United States. The purpose of this discussion is to ascertain the need to prepare an EIS.

- Discussion of alternatives.

Alternative approaches to the problem being addressed by the proposed project should be described and briefly analyzed with respect to their environmental impacts. The various alternatives should be compared with respect to both their effectiveness in dealing with the problem being addressed and their environmental impacts.

The discussion and comparison of alternatives need not be exhaustive, but should be sufficient to permit a well founded choice of alternatives. The listing of general and specific threshold criteria should be used as the basis for a comprehensive discussion and uniform comparison of alternatives.

- Summary conclusion.

The significance determination should be briefly discussed here. If the project impacts significantly on the environment, then the discussion should also include the major environmental issues to be addressed in the EA or EIS, including the likely U.S. agencies to conduct the review.

3. Submission and Distribution of the IEE

The IEE will accompany the PRP or equivalent document through the usual document approval process.

In addition, those IEE's which recommend preparation of an EA will be circulated to appropriate U S. Federal Agencies for comment, as outlined in the CEQ guidelines and amplified by AID Regulation 16.

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN

GENERAL CRITERIA

1. Are the effects of an action likely to be irreversible? Irreversible impacts relate not only to the use of non-renewable resources in the construction or implementation of a project, but also to the ongoing and induced impacts caused by the operation of the project. For example, infrastructure improvements such as rural electrification, sewer projects and dams set in motion urban and rural developments that are usually irreversible. ☐ ☐ ☐

2. Does the project involve a complex of actions with individually limited but cumulatively considerable effects? Individual projects which by design (for reasons of funding, sequencing, etc.) or by circumstance are actually parts of a larger program should be viewed in the context of their contribution to that program. ☐ ☐ ☐

3. Do the actions involve a limited investment, but set a precedent for future actions, or represent a decision in principle about future actions? Many projects become self-justifying by creating the need for additional projects. Certain pilot projects and limited programs fall into this category whereby their future application initiates a whole series of secondary impacts. ☐ ☐ ☐

4. Does the action curtail the range of beneficial uses of the human environment and its resources, or serve short-term goals to the disadvantage of long-term environmental goals? Some actions can usurp a portion of an ecosystem to the exclusion of other legitimate uses of that ecosystem. This sort of problem most frequently arises in the areas of land use and the aquatic environment, such as irrigation projects, forestation, reservoirs and urbanization. ☐ ☐ ☐

5. Is the action likely to be highly controversial? The controversiality of an action indicates that it is important to someone in the host country, to the international community or to the United States; and therefore a significant action. ☐ ☐ ☐

SPECIFIC CRITERIA

The following specific criteria are intended to assist in the determination of the significance of an activity's impact on the human environment. It is not a complete catalogue and should not be viewed as the only environmental impacts which are to be considered.

1. Water Resources

Water resources can be described in terms of surface water and ground water. Surface waters refer to the waters found in streams, rivers, ponds, lakes, swamps, reservoirs, and other places where it can be seen. Ground water is defined as the water found in the pores of subsurface materials. The geologic formations in which ground water is contained are called aquifers. The distinction between ground water and surface water is not one of type but rather of where the water is found. Ground water often contributes a major portion of the flow of surface water. Likewise, surface waters often form a major recharge source for ground water. Water supplies may be obtained from either ground or surface waters. A project can endanger water supplies through construction of facilities, runoff, or overdrafting (rate of water withdrawal is greater than the rate at which it is replenished). A project can be endangered by flooding from both human-related and natural causes.

An action should be considered a possible candidate for an EA or EIS when it:

a) adds a new technological use to an aquatic environment such as withdrawal for potable water, discharge for sanitary sewerage, or introduction of a new fishing industry; ☐ ☐ ☐

b) introduces a technological system such as water diversion for irrigation systems, dams, etc., which would significantly interfere, either during installation or operation, with existing natural water systems; ☐ ☐ ☐

c) significantly reduces or increases the surface area of an aquatic environment; ☐ ☐ ☐

d) increases the amount of water in an aquatic environment to the extent that the number of annual floods is increased or the water surface level is increased during periods of flooding; ☐ ☐ ☐

e) brings about a measurable change in the volume or level of water within a natural aquatic environment, such as swamp drainage or filling in flood plains, or the water table as a result of water wells, etc.; ☐ ☐ ☐

f) involves the use, destruction, or creation of wetlands, coral areas, hot springs, tundra, or other environmentally sensitive areas. ☐ ☐ ☐

2. Water Quality

Human activity impacts surface and ground water by many different mechanisms. Contaminated storm water runoff, sediment and the discharge of wastes are prime causes of surface water degradation; while septic tank seepage, leaky sewer lines, the improper disposal of cleaning agents, and contamination of recharge zones by all of the above are some of the causes of ground water pollution. In turn, water of poor quality, whether degraded by human or natural causes, impacts human activities by limiting the range of uses that a given water body may serve.

An action should be considered as a possible candidate for an EA or EIS when it:

THRESHOLD DECISION CRITERIA

NOTE

CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
a) erodes soil into a surface aquatic environment to the extent that the annual siltation rate or average turbidity in the aquatic environment will be measurably increased;	☐	☐	☐
b) measurably increases human or domesticated animal waste into surface aquatic environments (directly or indirectly) or ground water supplies;	☐	☐	☐
c) measurably changes the concentration of naturally occurring substances in surface aquatic environments or ground water supplies, such as salt water intrusion, or filling in of marshland from siltation;	☐	☐	☐
d) introduces an artificial or foreign substance into a surface aquatic environment system or ground water supply from point or non-point sources or will increase the existing concentration of any such substance;	☐	☐	☐
e) introduces an admixture of artificial or foreign substances into a wetland, hot spring, tundra, coral area or other environmentally sensitive area;	☐	☐	☐
f) changes the average ambient temperature of an aquatic environment.	☐	☐	☐
3. Ecology			
Biotic resources are the plants and animals of an area. Because of the rate at which biological resources are being lost or altered by land and water transformation, it is important to carefully assess the importance of these losses.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) affects a species identified as endangered, rare or depleted;	☐	☐	☐
b) usurps air space which would interfere with established bird migration routes, such as smoke stacks, transmission lines or air traffic patterns at airports;	☐	☐	☐
c) introduces a species to an environment or significantly increases or decreases the populuation of a species, such as introducing domestic livestock to natural range;	☐	☐	☐
d) reduces the available habitat utilized by an indigenous species;	☐	☐	☐
e) brings about an identifiable change in the genetic make-up of a plant or animal;	☐	☐	☐
f) destroys an indigenous plant population covering a large area, e.g., 50 acres;	☐	☐	☐
g) introduces, concentrates or increases the population density of a pathogenic micro-organism in an environment, such as bacteria from waste water treatment plants;	☐	☐	☐
h) creates or precipitates an identifiable change in the behavior patterns of species which could, over time, lead to a measurable change in the population density of the species (behavior patterns refer to the patterns of feeding, mating, and movement);	☐	☐	☐
i) establishes or expands an industry which uses a measurable portion of an area's animal or plant resources on an annual basis, such as lumbering operations, fishing, hides, etc.	☐	☐	☐
4. Land Use and Man-Made Facilities			
Land use and man-made facilities refer to the development of an area for human activities. Human activities impose a change on the natural environment. This change can be far-reaching in the case of human settlements, or limited in the case of subsistence agriculture. In the former case, substantial and sophisticated support systems are required to sustain the larger and more densely populated settlements. These support systems draw on the natural environment either for consumption (water, vegetation, raw materials) or as effluent receptors (water bodies, air, land).			
An action should be considered as a possible candidate for an EA or EIS when it			
a) changes the land use patterns of an area (type or intensity);	☐	☐	☐
b) introduces a technological use to a parcel of land which traditionally has been in a natural state;	☐	☐	☐
c) significantly increases the amount of waste materials generated in the affected region, area or political subdivision;	☐	☐	☐
d) requires the temporary storage of hazardous waste materials when their ultimate disposition is not known or is not an inherent part of the proposed action;	☐	☐	☐
e) introduces or tends to introduce humans to an environment on a permanent or continual basis which was previously unoccupied;	☐	☐	☐
f) brings about a significant change in the population density of a human settlement;	☐	☐	☐
g) reduces the amount of food, water, energy, shelter or other services available to a human settlement for a significant period;	☐	☐	☐

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
h) creates or expands the production of electrical power and/or associated delivery systems;	☐	☐	☐
i) develops or expands water purification, storage and/or delivery systems;	☐	☐	☐
j) creates or expands sewage treatment and/or the addition of an interceptor sewer;	☐	☐	☐
k) establishes a new transportation service or extends an existing ground transportation service.	☐	☐	☐
5. Cultural, Recreational and Legal			
The character of a community is often shaped by those buildings, sites, areas or districts which have special historic and cultural interest or significance. Such historic and cultural entities may have been the location of historic events of international, national, state, or local importance; associated with notable persons or groups; possessed distinctive architectural design, landscape treatment, or other artistic features; presented the pre-history of an area; or are just interesting as curiosities. These sites and structures have value, and are an important resource for a community in determining its historic and cultural heritage which, if lost, cannot be replaced.			
Host Government laws, regulations and standards relating to environmental issues are indicative of a sensitivity to those issues and should be considered in the environmental review process.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) destroys or alters any natural landmark, historic or archaeologic propery/site, or property having significant cultural or religious value, including those listed by the World Heritage Committee pursuant to Article XI of the "Convention Concerning the Protection of the World Cultural and Natural Heritage," of November 1972.	☐	☐	☐
b) is proximal to a park, wildlife refuge, preserve or other such recreational or natural area, whether or not the area is officially designated for such uses;	☐	☐	☐
c) contravenes, or significantly contributes to the contravention of Host Government laws, regulations, guidelines, etc., pertaining to air and water quality;	☐	☐	☐
d) contravenes Host Government laws, regulations, guidelines, master plans, etc., pertaining to land use (and use of water areas);	☐	☐	☐
e) contravenes, or significantly contributes to the contravention of Host Government regulations, guidelines, etc., pertaining to odors or noise.	☐	☐	☐
6. Natural Resources and Land Forms			
Natural resources and land forms are some of the most sensitive features of the natural environment - once displaced or used up, it is only with the greatest of difficulty, if at all, that they can be replaced. Typical natural resources and land forms are wetlands, prime agricultural land, coastal zones, minerals and ores, and forest lands.			
An action should be considered as a possible candidate for an EA or EIS when it:	☐	☐	☐
a) precipitates changes in a land form which would affect its stability;	☐	☐	☐
b) destroys sand dunes, natural levees and other barriers which protect lands from flooding, or proposes development in flood prone areas;	☐	☐	☐
c) decreases the amount of topsoil associated with a land area to the extent that plant species traditional to the general area could not be reintroduced to a significant portion of the area affected;	☐	☐	☐
d) significantly changes the concentration of ambient substances in the soil over a large area (say 100 acres), such as irrigation;	☐	☐	☐
e) mixes a foreign or artificial substance into the soil over a large area (say 100 acres), such as fertilizers;	☐	☐	☐
f) affects the accessibility of known or suspected natural resources to the extent that it increases or decreases the economic feasibility of their exploitation;	☐	☐	☐
g) significantly increases the amount of a mineral or a fossil fuel being mined, quarried or used annually within a country;	☐	☐	☐
h) perpetuates the generation of wastes in the form of materials which could reasonably be recycled but are not ("reasonably" being determined by available technology and volume).	☐	☐	☐
7. Air Quality, Meteorology and Noise			
Air quality is one of the principal considerations in assessing the consequences of an action on the human environment. The adverse effects of increased air borne contaminants are primarily related to human health, but also include vegetative damage, soiling and accelerated weathering of exposed materials.			

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN

SPECIFIC CRITERIA

A proposed project acts both as an air pollution source and as a receptor; that is, it can generate pollutants that contribute to existing levels, and the project area is subject to pollutant emissions from surrounding areas. Air pollution sources from typical AID projects include fuel combustion for heating, power plants, automotive traffic generated and induced by the project, and aerial spraying of chemicals.

An action should be considered as a possible candidate for an EA or EIS when it:

	YES	NO	UNKNOWN
a) introduces one or more pollutants into an air shed;	☐	☐	☐
b) creates changes in the weather;	☐	☐	☐
c) creates sound levels which will affect human or faunal activities;	☐	☐	☐
d) causes or tends to cause a significant change in the albedo (reflectivity of the earth's surface) or the amount of heat exchanged between the earth and the atmosphere over a large area, such as the clearing of forest for field crops, or the inundation of land area by artificially created water bodies.	☐	☐	☐

8. Socioeconomics

Some of the most significant impacts on the human environment are those that affect a community or area's social and economic patterns. The effects of change are particularly important in the less developed countries because many of these countries are in transition from a traditional society to one that is pre-industrial or industrial.

An action should be considered as a positive candidate for an EA or EIS when it.

	YES	NO	UNKNOWN
a) displaces populations, or resettles rural populations;	☐	☐	☐
b) interrupts traditional community ways of life (nomadic, pastoral, agricultural) so that social patterns or life styles change;	☐	☐	☐
c) causes aboriginal communities to become more susceptible to acculturation;	☐	☐	☐
d) changes health conditions by the improvement of health delivery services, provision of clean water, construction of sanitary sewer facilities, improvement of air quality, etc.	☐	☐	☐
e) alters family patterns and values as a result of structural changes in transportation, agriculture, employment, etc.	☐	☐	☐
f) changes the demographic profile;	☐	☐	☐
g) measurably increases family income	☐	☐	☐
h) provides educational facilities or services to a broad geographic area.	☐	☐	☐

9. Other (list)

	YES	NO	UNKNOWN
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐
_____	☐	☐	☐

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

ENVIRONMENTAL IMPACT		
YES	NO	UNKNOWN

IMPACT ON THE GLOBAL ENVIRONMENT AND/OR THE U.S.

When a proposed AID activity significantly affects the global and/or U.S. environment, then an EIS is to be prepared. In order to significantly affect the global or U.S. environment, the airborne or waterborne contaminant, effluent or other release of the proposed activity must directly or indirectly impact the high seas, global atmosphere, or the United States. The above General and Specific Criteria indicate whether a project's impacts are significant. If they are significant, then a second determination must be made as to whether the significance is of a global nature or whether the project impacts on the U.S.

In making this determination with respect to pollutants and/or certain diseases, the following factors should be considered in an integrated manner:

1. Magnitude

   Is the pollutant introduced or added to the environment in sufficient quantities or of such a nature as to have a measurable effect at locations well beyond the point or area of introduction, or is it introduced or added to the environment at many locations? Does it tend to be concentrated by its nature or by any mechanism within the environment (e.g., through the food chain)? ☐ ☐ ☐

2. Potency

   Is the pollutant of consequence in terms of its inherent deleterious qualities or intermediate or catalytic capabilities? ☐ ☐ ☐

3. Duration

   Is the pollutant of a short lived nature, or is it relatively long lived in the natural environment in terms of its biodegradability, half-life, etc.? ☐ ☐ ☐

4. Transport Mechanism

   Is the pollutant capable of being carried significant distances from the project site by wind, water, human or animal means? ☐ ☐ ☐

5. Effects

   Are the effects of the pollutant of an acute, readily identifiable nature or does the project contribute a pollutant which is less discernible from the background level thereby creating a more insidious or chronic condition? ☐ ☐ ☐

It is important that these criteria be examined and discussed in the IEE together and concurrently rather than separately in weighing the potential for global, extra-jurisdictional or U.S. consequences of a project.

- a brief but descriptive title
- the responsible bureau or office
- location of the project
- project number
- recommendation for the appropriate environmental report, i.e., Negative Determination, EA, EIS or Negative Declaration
- signature of the responsible official and date

b) Body of the IEE

The body of the IEE shall include:

- A brief description of the environment affected.

A general description of the site or area, its major land and water forms, ecology, climate, land use, population, and socioeconomic characteristics should be included in the IEE. The description of the environment should be in scale with the project and expressed in terms of its likely impacts. Thus a family assistance project is concerned with socioeconomics; a national road system with the broad, general geography; and a site specific project, such as a dam, with the micro-scale natural and social resources. Any special cultural features likely to be affected by the proposed action should also be described. The description of the environment should be on the basis of available maps and published in-

formation. On-site surveys and monitoring are not required for preparation of this section.

- Threshold Decision Criteria form.

  This form is an essential element of the IEE and is to be completed as part of the submission.

- Discussion of impacts.

  Each of the impacts checked as "Yes" in the Threshold Decision Criteria form is to be identified and discussed. The purpose of the discussion is to succinctly expand on the environmental impacts, both adverse and beneficial, checked in the form. This discussion will briefly describe the major impacts in order to make a reasoned judgment as to the environmental significance of the proposed action.

  Based on the impacts identified on the Threshold Decision Criteria form, a brief discussion will be included, if necessary, addressing whether the proposed action significantly affects the global or extra-jurisdictional environment (oceans or air) and/or the United States. The purpose of this discussion is to ascertain the need to prepare an EIS.

- Discussion of Alternatives.

  Alternative approaches to the problem being

addressed by the proposed project should be described and briefly analyzed with respect to their environmental impacts. The various alternatives should be compared with respect to both their effectiveness in dealing with the problem being addresssed and their environmental impacts.

The discussion and comparison of alternatives need not be exhaustive, but should be sufficient to permit a well founded choice of alternatives. The listing of general and specific threshold criteria should be used as the basis for a comprehensive discussion and uniform comparison of alternatives.

- Summary conclusion.

  The significance determination should be briefly discussed here. If the project impacts significantly on the environment, then the discussion should also include the major environmental issues to be addressed in the EA or EIS.

Several sample IEE's are included in this Appendix as examples of format and content.

3. Submission and Distribution of the IEE

The IEE will accompany the PRP or equivalent document through the usual document approval process.

In addition, those IEE's which recommend preparation

of an EA will be circulated to appropriate U.S. Federal Agencies for comment, as outlined in the CEQ guidelines and amplifed by AID Regulation 16.

C. THRESHOLD DECISION

Because of the diversity and complexity of AID actions, a definitive listing of all actions requiring (or exempted from) the EA or EIS is not feasible. An EA or EIS should normally be prepared if there are consequences of a project which result in significant effects on the human environment. When there is doubt whether or not to prepare an EA or EIS, it should be prepared.

1. Some Actions for Which an EA or EIS is Normally Required

   a) Certain chemical programs including insecticides, herbicides, rodenticides and other similar projects directed towards species suppression, or genetic modification;

   b) Certain large-scale, on-the-ground research activities such as pilot tests involving hazardous substances, large areal land and/or vegetative development and/or transformation;

   c) regional development programs where such activities include development plans and specific work projects;

   d) irrigation systems designed to serve large areas;

   e) New transportation systems or segments of systems designed for market to market use, but not normally including improved, but unpaved roads, or road maintenance and repair programs;

f) Major public facilities such as dams, power plants, rural electrification, sanitary sewer systems, and;

g) Selected commodities when the end use is known and that use qualifies under the other criteria listed herein.

2. Actions for Which an EA or EIS is not Normally Prepared

The following types of actions are not considered to be major Federal actions significantly affecting the human environment and will not normally require the preparation of an EA or EIS in accordance with Regulation 16:

a) Education or training programs not designed to result in activities directly affecting the environment;

b) Controlled experimentation exclusively for the purpose of research which is confined to small areas and carefully monitored;

c) Analyses, studies, academic or investigative research, workshops and meetings;

d) Multidonor projects where AID is a minor donor* and there are no potential effects upon the environment of the U.S. or areas outside any nation's jurisdiction;

e) Document and information transfers;

f) Contributions to international, regional or national organizations by the U.S. which are

*Minor donor shall mean those multidonor projects to which AID contributes 15% or less of the total project cost.

not for the purpose of carrying out a specifically identifiable project or projects;

g) Disaster and emergency relief activities; and

h) U.S. institution building grants, as provided for under Section 211(d) of the Foreign Assistance Act.

In addition to the above general classes of activities which may be excluded, there is a wide variety of AID projects which will not normally require the preparation of an EA or EIS:

a) Program loans, and other loans or grants to intermediate credit institutions and/or regional development banks, including financial transfer type projects, where the third party actions are unknown, nonspecific or lack significance in terms of their environmental impact;

b) Loans or grants for core support to private voluntary organizations and international or interregional organizations, as well as for specific subproject support for education, training, and research;

c) Projects for which Negative Declarations are prepared;

d) Purchase of technical services from other U.S. agencies;

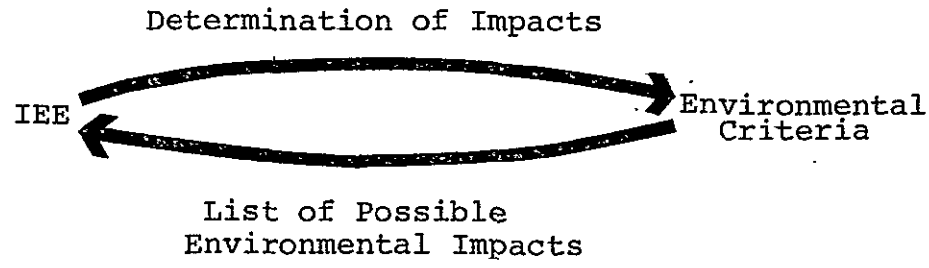
e) Individual actions the environmental impact of which is adequately covered by a programmatic statement; and

f) Specific projects which are conceptual, lack definition, and whose environmental impact is judged to be nonsignificant, or impossible to define.

3. Actions Which May Require an Environmental Statement

There will be many AID actions for which good judgment will be necessary to determine the type of environmental report which is required. This judgment must be based on a reasonable understanding of the nature and content of the AID action as well as the impact of the action on the human environment.

In order to provide a basis for the Threshold Decision (significance determination), a set of general and specific environmental criteria is described on the Threshold Decision Criteria form. These criteria are to be used during the preparation of the IEE, as part of an iterative process. The criteria suggest types of impacts which might occur as a result of a project; concurrently the IEE provides the description of the project as well as the likelihood and magnitude of the environmental impact.



After the Threshold Decision Criteria form is completed, the cumulative significance of the proposed action on the human environment is to be determined on the basis of sound and reasonable judgment. The impacts identified in the IEE and the Threshold Decision Criteria form are to be analyzed in order to determine the significance of the project in terms of their adverse and/or beneficial impacts on the human environment.

It is important that the IEE and the Threshold Decision Criteria form not be viewed merely as a checklist, but rather as a substantive record of the environmental considerations leading to the Threshold Decision.

D. ENVIRONMENTAL REPORTS

AID has established seven categories of environmental reports to adequately describe the environmental considerations which are incorporated into the decision-making process for each of its projects. These reports are as follows:

1. Initial Environmental Examination (IEE)

An IEE is to be prepared for all AID projects at the earliest possible stage (usually the PRP). The IEE can be for a specific project, or programmatic to cover a category of projects, the characteristics of which are basically similar. Its primary purpose is to provide the basis for a Threshold Decision as to whether an Environmental Assessment, an Environmental Impact Statement, a Negative Determination, or a Negative Declaration is to be prepared (See 22 CFR 216.1(C) (2) and 216.3).

2. Environmental Assessment (EA)

An EA will be prepared in cooperation with the host government for AID actions which significantly affect the quality of human environment, the environmental aspects of which, however, do not impact the global or extra-jurisdictional environment, or the United States and its territories and possessions (see 22 CFR 216.1(C) (4) and 216.5).

3. Environmental Impact Statement (EIS)

An EIS will be prepared for AID actions significantly affecting the quality of the global or extra-jurisdictional

environment, or the United States and its territories and possessions (see 22 CFR 216.1(C) (5) and 216.6).

4. Negative Determination

A Negative Determination will be prepared for all projects which do not require an EA or EIS; that is, those which are judged not to have a significant effect on the quality of the human environment (see 22 CFR 216.1(C) (6).

5. Negative Declaration

A Negative Declaration will be prepared for AID actions which significantly affect the quality of the human environment, but which, based on an official written Agency decision made by an Assistant Administrator, may be exempted from the EA or EIS requirement for the following reasons:

a) Overriding considerations such as the provision of disaster or emergency relief.

b) The fact that a substantial number of Environmental Assessments or Environmental Impact Statements relating to similar activities have been prepared.

c) The fact that the Agency has previously decided to prepare a programmatic Statement of Assessment covering the activity in question (see 22 CFR 216.1(C) (7).

6. Programmatic Approach

A programmatic approach may be used for broad programs which include a variety of specific activities or for certain types of projects which are generally applied on a

regional and/or worldwide basis, when the environmental impacts of all the actions are substantially similar.

A programmatic approach has the advantage of permitting the analysis of cumulative or possible synergistic effects of a series or group of actions. The disadvantage of the programmatic approach may be a lack of specificity when applied to an individual program component. In general, the programmatic approach should be considered when initiating new programs, when making major changes in existing programs or when major policy determinations are under study. Examples of actions which might be suitable for programmatic approaches are:

a) Pest control programs which are applicable over a broad geographic area or worldwide basis.

b) Large-scale development programs.

c) Fertility control programs.

d) Introduction of new crops.

e) Certain commodities.

f) National and multi-national training and education programs.

7. Specific Assessments or Statements

A specific assessment or statement should be prepared for individual actions or facilities which have significant and unique impacts on the human environment. Examples of actions which would ordinarily require such assessments or statements are:

a) Dams.

b) Power plants and electrification projects.

c) Large irrigation projects.

d) Potable water and sanitary sewer systems.

APPENDIX

APPENDIX

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT TITLE	Lake Chad Livestock and Agriculture	**RECOMMENDATION** (CHECK ONE)	
PROJECT NO.		NEG. DET.	☐
LOCATION	Chad and Cameroons	EA	☒
BUREAU	AA/AFR	EIS	☐
		NEG. DEC.	☐

RESPONSIBLE OFFICIAL _____ TITLE: _____

DATE _____

DIRECTIONS FOR PREPARING THE INITIAL ENVIRONMENTAL EXAMINATION (IEE)

1. Official Responsible for Preparing the IEE

The IEE will be prepared by the originator of the project. He will:

a) Obtain the information needed for the preparation of the IEE;

b) Consult with appropriate bureaus and offices, and other appropriate sources of environmental expertise not available within the responsible official's bureau or office, as well as host country personnel, wherever possible and appropriate;

c) Prepare the IEE and ensure that it considers the environmental consequences of the proposed activity;

d) Recommend the threshold decision as to whether a Negative Determination should be made or which type of environmental report is required (EA or EIS); and

e) Transmit the IEE with other pertinent project documents.

2. Content of the IEE

The IEE shall fulfill and satisfy, to the extent practical, the information necessary to make a threshold decision regarding the environmental significance of the proposed project. The IEE should clearly describe the likely environmental impacts of the proposed project and its alternatives to the extent that they can be predicted or anticipated. The IEE is the first formal consideration of environmental impacts in the AID project review and approval process. The IEE, therefore, should be prepared in conjunction with the project documents it accompanies. Highly technical and specialized analyses and data will not ordinarily be included as part of the IEE.

Following is the content of the IEE:

a) Cover Sheet

b) Body of the IEE

The body of the IEE shall include:

- A brief description of the environment affected.

A general description of the site or area, its major land and water forms, ecology, climate, land use, population, and socioeconomic characteristics should be included in the IEE. The description of the environment should be in scale with the project and expressed in terms of its likely impacts. Any special cultural features likely to be affected by the proposed action should also be described. The description of the environment should be on the basis of readily available maps and published information. On-site surveys and monitoring are not required for preparation of this section.

- Threshold Decision Criteria form.

This form is an essential element of the IEE and is to be completed as part of the submission.

- Discussion of impacts.

Each of the impacts checked as "Yes" in the Threshold Decision Criteria form is to be identified and discussed. The purpose of the discussion is to succinctly expand on the environmental impacts, both adverse and beneficial, checked in the form. This discussion will briefly describe the major impacts in order to make a reasoned judgment as to the environmental significance of the proposed action.

Based on the impacts identified on the Threshold Decision Criteria form, a brief discussion will be included, if necessary, addressing whether the proposed action significantly affects the global or extra-jurisdictional environment (oceans or air) and/or the United States. The purpose of this discussion is to ascertain the need to prepare an EIS.

- Discussion of alternatives.

Alternative approaches to the problem being addressed by the proposed project should be described and briefly analyzed with respect to their environmental impacts. The various alternatives should be compared with respect to both their effectiveness in dealing with the problem being addressed and their environmental impacts.

The discussion and comparison of alternatives need not be exhaustive, but should be sufficient to permit a well founded choice of alternatives. The listing of general and specific threshold criteria should be used as the basis for a comprehensive discussion and uniform comparison of alternatives.

- Summary conclusion.

The significance determination should be briefly discussed here. If the project impacts significantly on the environment, then the discussion should also include the major environmental issues to be addressed in the EA or EIS, including the likely U.S. agencies to conduct the review.

3. Submission and Distribution of the IEE

The IEE will accompany the PRP or equivalent document through the usual document approval process.

In addition, those IEE's which recommend preparation of an EA will be circulated to appropriate U.S. Federal Agencies for comment, as outlined in the CEQ guidelines and amplified by AID Regulation 16.

A Brief Description of the Environment Affected

The project will focus on a limited pilot zone of approximately 1,000,000 hectares in the Assale-Serbewel area which is located just south of Lake Chad and north of N'Djamena on both sides of the Chari River. Assale is in Chad and Serbewel is in the Cameroons. Approximately 80,000 people live in this area -- 70,000 in Serbewel and 10,000 in Assale. The combined herd of 178,000 cattle is divided between 118,000 in Serbewel and 60,000 in Assale.

1. Geography

The area is part of a shallow inland basin, several hundred miles wide, which extends in all directions from Lake Chad. Flowing through the pilot zone area are the Chari and Logone rivers. Although they flow all year round, they become shallow and sluggish towards the end of the dry season.

The headwaters of both rivers are not local, but in the equatorial rainbelt of the Cameroons and the Central African Republic, where rainfall averages more than 50 inches a year. A huge volume of water is carried from the upland areas into southern Chad where the annual rainfall averages 30 to 50 inches. The result is an annual flood covering broad areas along the Chari and Logone rivers. These two rivers join at N'Djamena and inundate the flat delta areas for more than 50 miles between the capital city and Lake Chad. Much of the land around N'Djamena and for a considerable distance upstream (southeastward) is also under water during the average autumn flood season. Major flood plains and swampy areas are also found farther upstream and elsewhere on various tributary streams.

Much of the great volume carried by this river system eventually reaches Lake Chad -- an internal basin having no outlet to the sea -- making it the seventh largest permanent lake in the world. It is, however, less than six feet deep during some dry seasons and less than twelve feet deep in most areas during the annual flood stage. The surface area varies seasonally between 5,000 and 10,000 square miles.

2. Climate

The project area is among the northernmost areas reached by moisture-bearing winds from the equatorial rainbelt. Southerly and southwesterly winds bring about 25 inches of rain to much of the area. Most of it is concentrated in a four-month season (June to September). For the rest of the year and intermittently during the rainy season, this northern region is under the influence of drying winds from the Sahara Desert. Surface water is quickly evaporated or escapes through

poorly developed soil structures to underground water tables. Daytime temperatures are usually high except during and immediately after the late summer rainstorms. Midday maximums are often above 90°F, especially during February and March, but nights are usually much cooler, at least during the dry months when the diurnal range often covers 30 degrees and may be as much as 50 degrees.

The flood plain of the Chari and Logone rivers forms an important subregion. For at least part of the year marsh grasses and a great variety of other swamp plants thrive in the waterlogged flood plains.

3. Vegetation and Wildlife

There are farming localities in the marshlands east of Lake Chad and elsewhere wherever swamps or wells provide moisture. The natural vegetation includes drought-resistant grasses, thorny shrubs, scattered acacia trees, and small areas of woods. Many farmers combine subsistence farming with the raising of cattle, sheep, goats, or horses. Toward the northern edge of this zone there is less farming, and the better forage of the wetter southern area is replaced by sparse seasonal grazing. An east-west line through Lake Chad -- at approximately 14° N. -- is the practical northern limit of crop production on unirrigated land.

Because its climate and vegetation vary from humid equatorial forest to semidesert, the country has a wide variety of animals and insects. Dozens of varieties of large mammals live in the humid savanna areas on the central plateaus or along the Chari-Logone flood plains in the north. The list includes the elephant, savanna buffalo, eland, bushbuck, giraffe, rhinoceros, hippopotamus, lion, panther, cheetah, hyena, baboon, hyrax, wild hog, anteater, and various antelopes and monkeys. Among the better known birds are ostrich, several species of ducks, guinea fowl, pigeons, birds of prey, scavengers, and many species of small grassland and forest birds.

Some of these birds have become pests. Chad is joining nine other African countries in renewed efforts to control the quelea, a sparrow-like weaverbird numbering in the billions, that feeds mainly on important subsistence crops -- millet, sorghum, and rice.

Fish are plentiful in Lake Chad and the Chari and Logone rivers. They are used in subsistence diets and sold commercially.

4. Soils

In swampy areas along watercourses, especially in the flood plains of the Chari and Logone rivers on the

northeastern border, soils are generally darker and more fertile and contain more humus than those on the open plateaus. Subsistence crops are grown in many small areas, and there is an extensive area of commercial cotton production along the eastern border. Most of Northern Province is an expanse of savanna, which is useful primarily as grazing land.

5. Socioeconomics

The population of the Serbewel, which is fairly intense, has a correspondingly high level of infrastructure compared with that of the Assale. There is a fairly well developed road system in the Serbewel whose main access is the N'Djamena-Nigeria highway which skirts the southern border of Serbewel. The principal towns are linked to the main highway by motor roads. Secondary roads join the main villages. The total network is slightly more than 400 kilometers.

The chief town, Makary, has a dispensary in addition to its administrative center. The same applies to Goulfey. Numerous and well attended schools exist in a large number of villages. The Serbewel is equipped with about 140 fairly well-spaced concrete-lined wells which provide water for the village and part of the drinking water for livestock.

Production of crops is intense. The land area cultivated each year varies from 45,000 to 50,000 hectares. The primary crop is sorghum (15,000 tons, followed by maize, 2,500 tons), but there are small quantities of cassava, sweet potatoes, okra, cow peas, onions and hot peppers produced. There are only negligible quantities of cash crops (cotton, rice, peanuts). Fishing supplies some of the protein intake for the inhabitants of the sector, but the basic occupation of the people of the area is livestock production.

The Serbewel sector is a relatively prosperous area which places it in a privileged position compared with neighboring regions.

The Assale sector by contrast to Serbewel is a poor relation. Internally its very sketchy road network only has dirt trails linking up the main villages (Karal, Hadji-el-Hamis, Ganatir, Tourba) with Djermaia and Massaguer, which are situated on the paved road between N'Djamena-Massakory. With the onset of the first rains these trails become impassable and completely cut off the whole region for many months. The region lacks administrative and health services. Schools are few and poorly attended. Illiteracy is the general rule.

Apart from its natural surface water resources, there are only a small number of low-producing traditional type wells. Concrete-lined wells are an exception. A lack of statistics makes it difficult to assess the land areas under cultivation,

probably around 4,000 to 5,000 hectares. Millet and sorghum constitute the main crops. These are supplemented by vegetable crops (tomatoes, green peppers, etc.) which are sold on the N'Djamena market. As in the Serbewel, livestock production is the main source of livelihood for the inhabitants and provides a sufficient income to provide for the basic necessities of life.

6. Ethnic Groups

The population of the project area is composed primarily of Shuwa Arabs and Kotokos. When the Arabs first arrived in the 18th and 19th centuries, they found the region already occupied by the highly organized Kotokos. The existing organization of principalities by the Kotokos led the French colonialists to create a Sultanate in the Serbewel sector of the project, which has allowed the Kotokos to retain that political power to the present. This is despite the fact that Arabs are the largest ethnic group in the project area. The Kotokos are adopting the Arabic language and the Islamic faith. Of the total population of 70,000 in the Serbewel, 58 percent are estimated to be Arab. In Assale, of the estimated 29,000 inhabitants, 80 percent are Arab. Approximately 32 percent of the population of the Serbewel and 11 percent of Assale are Kotoko. There are small numbers of Hausa, Fulani, Kanuri, and Bornuans. The Bornuans, originally from Nigeria, are settled in the northwestern portion of the Serbewel and are entirely sedentary as are the Kotoko.

a) Kotoko. On both sides of the Logone and Chari rivers, from the eleventh parallel up to Lake Chad, live the Kotoko. They are organized in several principalitieis that had their period of prominence between the 14th and 16th centuries. Each principality is centered on a fortified city.

The cities, which have become too large for the dwindling number of inhabitants, are surrounded by enormous walls several miles long, up to 33 feet high, and sometimes crenelated. Within them, narrow alleys wind between high, windowless walls that hide the dwellings and courtyards of individual families.

The Kotoko are skillful fishers, using enormous butterfly nets. They are noted as builders of boats made of planks that they literally sew together. They used to farm only for their own consumption and left cattle raising to the M'Bororo and Arabs, who actually outnumber them on their own territory. In more recent times,

some Kotoko have become cattle raisers as well, and others have taken to supplying the markets of N'Djamena with garden produce. The men are also renowned as dyers of cloth; and the women, as makers of pottery.

The Kotoko consider themselves owners of the land, which is carefully delimited between cities. To this day, foreigners, including the Arabs who have been there for generations, must pay tribute to the various "chiefs of the soil" for the right of cultivation and pasture.

The Kotoko also have the monopoly over fishing and water transport. The river waters are strictly apportioned between cities, each having a "chief of the waters" who presides over the cult of the water spirits and who decides when fishing is to begin.

b) Arabs. The Arabs own the largest part of the livestock in the area, raising camels, horses, cattle, goats, and sheep. South of the fourteenth parallel they raise cattle, usually the shorthorned zebu, rather than camels. The Arab peoples are Muslims, belonging to the Tidjaniya brotherhood with the exception of the Ouled Sliman and some lineage segments in Ouaddai who belong to the Sennoussiya.

The cattle people are primarily the Shuwa Arabs. These people are semi-sedentary in that their cattle are all in the home village areas in the rainy season but are taken on transhumance during the dry season. The live in villages of millet-cane huts which they abandon every five or ten years when the termites have eaten the huts and their farmlands are exhausted, forcing them to move on a few kilometers away.

They do not own land but pay tribute for its use to local peoples, such as the Kotoko chiefs near the Logone River or the heads of administrative districts. Only in the canton of Bounderi have they their own autonomous rule. Their social system is based on lineages and sections of lineages claiming descent from male founders. Rights and obligations among the descendants diminish with the increasing number of generations separating them from a common ancestor.

7. Stockraising

Stockraising is a major economic activity in both the Cameroons and Chad. A large expanse of the country's land area is devoted to herding, and a significant proportion of the population derives all or part of its subsistence from it. The productivity of the herd, however, is low. Conditions for stockraising are fairly favorable by African standards, the incidence of destructive epidemics or large-scale loss from drought being lower than in many African stockraising countries. By the standards of countries with temperate climates, however, health conditions for the animals are poor, and the average meat and milk yield is low. About 10 percent of the herd is slaughtered in a year; this again was not a low rate by African standards but compared with an average of about 30 percent in Europe and the United States.

The factors that keep livestock productivity low are the same that prevail elsewhere in Africa. Traditional attitudes place a high value on continuing ownership of cattle as a source of status and as the ultimate safeguard against famine. The owner's status depends directly on the size of his herd. The number of stock, rather than their healthy appearance, milk yield, or meat-producing capacity, is what determines their value either as a store of wealth, in fulfilling kinship obligations, or in ceremonial slaughter. Herders are discinclined to cull unproductive animals or to segregate for selective breeding. In nomadic pastoral tradition, it is a man's right to move his herds wherever he can find feed and water, although kinship groups customarily respect one another's established grazing itineraries.

The predominant cattle type common to the project area is the Choa Arab. They are thoracic humped zebus and are derived from the herds accompanying the nomadic Shuwa Arabs from east of Lake Chad in years past. They are closely allied to the cattle of Ouaddai, Batha and Kanem Districts in Chad, the Wadara of Nigeria and the Baggara Arab cattle of western Sudan.

Most Choa cattle in Assale-Serbewel are owned by Shuwa Arabs, a people of nomadic tradition but now largely devoted to sedentary agriculture. The herds, however, remain semi-nomadic. During the rains they are kept near the villages in herds of 100-150 head where they are grazed on uncultivated land and in the adjoining bush. The main herds in the dry season are taken on transhumance to either the shores of Lake Chad or the Yaeres area further south, where grazing herd dize is 100 head or less. Crop residues are often fed to the milk herds, which may be retained near the permanent villages in the dry season. The bulls, many of which are inferior as castration is little practiced, run with the herd year-round. Thornbush enclosures (zaribas),

smudge fires, and nighttime herding to escape the full force of biting insects are special management practices developed by the Shuwa to maintain his herds in a hostile environment.

Choa cattle are medium to small in size. Mature cows measure some 125 cm in height behind the hump, and weigh about 275-300 kilograms. The hump in the male is well developed, but rather small in the female. The rump is sloping. Horn types vary from short to medium. The predominant coat colors are dark red or brown, but pied with black or red on white may be seen. The hair coat is short.

The Choa is a triple-purpose tribal breed. It has fair milking qualities, giving up to 1,000 kilograms of milk over an average 5 to 7 month lactation. They fatten readily on good natural pasturage. Choas are docile, yet agile, and make good baggage, riding and draft animals, but are rather light for plowing heavy soils.

It is apparent that Choa breeding merit has declined in recent years, probably in direct relationship to time devoted to agriculture. Indications are, however, that they still have a considerable potential for higher productivity that could be realized by better nutrition and other production practices.

From an ecological standpoint, the project area is better suited to cattle than sheep and goats, but all three species are found in livestock herds. Sheep are important for the ritualistic slaughter of the Islamic faith and presently command prices 100 to 125 percent higher than cattle per unit of weight. They fit well with large cattle herds in extensive range areas as well as on small diversified farms having restricted grazing. Their greatest limitation relates to a susceptibility to parasitism, pneumonic diseases and food rot during the rainy season. The goat, a natural browser, has extreme resistance to death and helps to fill any void left by cattle and sheep in the grazing of an area. Because he can survive where cattle and sheep cannot, the goat is an indicator of poverty, a degraded land resource base and mounting population pressure. The diverse grazing habits of the three species tend to complement one another, thereby both improving and preserving the ecological balance even though the project area is judged to be ecologically better suited to cattle than either sheep or goat.

In the project area, the bovine is regarded as the most useful animal in that it provides milk for human sustenance, pack and transport and is marketed for major cash requirements. Bride price is also figured primarily in terms of cattle. Sheep and goats are seldom milked but serve as a source of small change and provide much of the meat consumed by the producers.

THRESHOLD DECISION CRITERIA

NOTE:

CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
GENERAL CRITERIA			
1. Are the effects of an action likely to be irreversible? Irreversible impacts relate not only to the use of non-renewable resources in the construction or implementation of a project, but also to the ongoing and induced impacts caused by the operation of the project. For example, infrastructure improvements such as rural electrification, sewer projects and dams set in motion urban and rural developments that are usually irreversible.	☐	☒	☐
2. Does the project involve a complex of actions with individually limited but cumulatively considerable effects? Individual projects which by design (for reasons of funding, sequencing, etc.) or by circumstance are actually parts of a larger program should be viewed in the context of their contribution to that program.	☒	☐	☐
3. Do the actions involve a limited investment, but set a precedent for future actions, or represent a decision in principle about future actions? Many projects become self-justifying by creating the need for additional projects. Certain pilot projects and limited programs fall into this category whereby their future application initiates a whole series of secondary impacts.	☐	☒	☐
4. Does the action curtail the range of beneficial uses of the human environment and its resources, or serve short-term goals to the disadvantage of long-term environmental goals? Some actions can usurp a portion of an ecosystem to the exclusion of other legitimate uses of that ecosystem. This sort of problem most frequently arises in the areas of land use and the aquatic environment, such as irrigation projects, forestation, reservoirs and urbanization.	☐	☒	☐
5. Is the action likely to be highly controversial? The controversiality of an action indicates that it is important to someone in the host country, to the international community or to the United States; and therefore a significant action.	☐	☒	☐
SPECIFIC CRITERIA			
The following specific criteria are intended to assist in the determination of the significance of an activity's impact on the human environment. It is not a complete catalogue and should not be viewed as the only environmental impacts which are to be considered.			
1. Water Resources			
Water resources can be described in terms of surface water and ground water. Surface waters refer to the waters found in streams, rivers, ponds, lakes, swamps, reservoirs, and other places where it can be seen. Ground water is defined as the water found in the pores of subsurface materials. The geologic formations in which ground water is contained are called aquifers. The distinction between ground water and surface water is not one of type but rather of where the water is found. Ground water often contributes a major portion of the flow of surface water. Likewise, surface waters often form a major recharge source for ground water. Water supplies may be obtained from either ground or surface waters. A project can endanger water supplies through construction of facilities, runoff, or overdrafting (rate of water withdrawal is greater than the rate at which it is replenished). A project can be endangered by flooding from both human-related and natural causes.			
An action should be considered a possible candidate for an EA or EIS when it:			
a) adds a new technological use to an aquatic environment such as withdrawal for potable water, discharge for sanitary sewerage, or introduction of a new fishing industry;	☒	☐	☐
b) introduces a technological system such as water diversion for irrigation systems, dams, etc., which would significantly interfere, either during installation or operation, with existing natural water systems;	☐	☒	☐
c) significantly reduces or increases the surface area of an aquatic environment,	☐	☒	☐
d) increases the amount of water in an aquatic environment to the extent that the number of annual floods is increased or the water surface level is increased during periods of flooding,	☐	☒	☐
e) brings about a measurable change in the volume or level of water within a natural aquatic environment, such as swamp drainage or filling in flood plains, or the water table as a result of water wells, etc.;	☒	☐	☐
f) involves the use, destruction, or creation of wetlands, coral areas, hot springs, tundra, or other environmentally sensitive areas.	☐	☒	☐
2. Water Quality			
Human activity impacts surface and ground water by many different mechanisms. Contaminated storm water runoff, sediment and the discharge of wastes are prime causes of surface water degradation; while septic tank seepage, leaky sewer lines, the improper disposal of cleaning agents, and contamination of recharge zones by all of the above are some of the causes of ground water pollution. In turn, water of poor quality, whether degraded by human or natural causes, impacts human activities by limiting the range of uses that a given water body may serve.			
An action should be considered as a possible candidate for an EA or EIS when it:			

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
a) erodes soil into a surface aquatic environment to the extent that the annual siltation rate or average turbidity in the aquatic environment will be measurably increased;	☐	☒	☐
b) measurably increases human or domesticated animal waste into surface aquatic environments (directly or indirectly) or ground water supplies;	☐	☒	☐
c) measurably changes the concentration of naturally occurring substances in surface aquatic environments or ground water supplies, such as salt water intrusion, or filling in of marshland from siltation;	☐	☒	☐
d) introduces an artificial or foreign substance into a surface aquatic environment system or ground water supply from point or non-point sources or will increase the existing concentration of any such substance;	☐	☒	☐
e) introduces an admixture of artificial or foreign substances into a wetland, hot spring, tundra, coral area or other environmentally sensitive area;	☐	☒	☐
f) changes the average ambient temperature of an aquatic environment.	☐	☒	☐
3. Ecology			
Biotic resources are the plants and animals of an area. Because of the rate at which biological resources are being lost or altered by land and water transformation, it is important to carefully assess the importance of these losses.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) affects a species identified as endangered, rare or depleted;	☐	☒	☐
b) usurps air space which would interfere with established bird migration routes, such as smoke stacks, transmission lines or air traffic patterns at airports;	☐	☒	☐
c) introduces a species to an environment or significantly increases or decreases the populuation of a species, such as introducing domestic livestock to natural range;	☒	☐	☐
d) reduces the available habitat utilized by an indigenous species;	☐	☒	☐
e) brings about an identifiable change in the genetic make-up of a plant or animal;	☐	☒	☐
f) destroys an indigenous plant population covering a large area, e.g., 50 acres;	☐	☒	☐
g) introduces, concentrates or increases the population density of a pathogenic micro-organism in an environment, such as bacteria from waste water treatment plants;	☐	☒	☐
h) creates or precipitates an identifiable change in the behavior patterns of species which could, over time, lead to a measurable change in the population density of the species (behavior patterns refer to the patterns of feeding, mating, and movement);	☐	☒	☐
i) establishes or expands an industry which uses a measurable portion of an area's animal or plant resources on an annual basis, such as lumbering operations, fishing, hides, etc.	☐	☒	☐
4. Land Use and Man-Made Facilities			
Land use and man-made facilities refer to the development of an area for human activities. Human activities impose a change on the natural environment. This change can be far-reaching in the case of human settlements, or limited in the case of subsistence agriculture. In the former case, substantial and sophisticated support systems are required to sustain the larger and more densely populated settlements. These support systems draw on the natural environment either for consumption (water, vegetation, raw materials) or as effluent receptors (water bodies, air, land).			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) changes the land use patterns of an area (type or intensity);	☒	☐	☐
b) introduces a technological use to a parcel of land which traditionally has been in a natural state;	☐	☒	☐
c) significantly increases the amount of waste materials generated in the affected region, area or political subdivision;	☐	☒	☐
d) requires the temporary storage of hazardous waste materials when their ultimate disposition is not known or is not an inherent part of the proposed action;	☐	☒	☐
e) introduces or tends to introduce humans to an environment on a permanent or continual basis which was previously unoccupied;	☐	☒	☐
f) brings about a significant change in the population density of a human settlement;	☐	☒	☐
g) reduces the amount of food, water, energy, shelter or other services available to a human settlement for a significant period;	☐	☒	☐

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
h) creates or expands the production of electrical power and/or associated delivery systems;	☐	☒	☐
i) develops or expands water purification, storage and/or delivery systems;	☐	☒	☐
j) creates or expands sewage treatment and/or the addition of an interceptor sewer;	☐	☒	☐
k) establishes a new transportation service or extends an existing ground transportation service.	☐	☒	☐
5. Cultural, Recreational and Legal			
The character of a community is often shaped by those buildings, sites, areas or districts which have special historic and cultural interest or significance. Such historic and cultural entities may have been the location of historic events of international, national, state, or local importance; associated with notable persons or groups; possessed distinctive architectural design, landscape treatment, or other artistic features; presented the pre-history of an area; or are just interesting as curiosities. These sites and structures have value, and are an important resource for a community in determining its historic and cultural heritage which, if lost, cannot be replaced.			
Host Government laws, regulations and standards relating to environmental issues are indicative of a sensitivity to those issues and should be considered in the environmental review process.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) destroys or alters any natural landmark, historic or archaeologic propery/site, or property having significant cultural or religious value, including those listed by the World Heritage Committee pursuant to Article XI of the "Convention Concerning the Protection of the World Cultural and Natural Heritage," of November 1972.	☐	☒	☐
b) is proximal to a park, wildlife refuge, preserve or other such recreational or natural area, whether or not the area is officially designated for such uses;	☐	☒	☐
c) contravenes, or significantly contributes to the contravention of Host Government laws, regulations, guidelines, etc., pertaining to air and water quality;	☐	☒	☐
d) contravenes Host Government laws, regulations, guidelines, master plans, etc., pertaining to land use (and use of water areas);	☐	☒	☐
e) contravenes, or significantly contributes to the contravention of Host Government regulations, guidelines, etc., pertaining to odors or noise.	☐	☒	☐
6. Natural Resources and Land Forms			
Natural resources and land forms are some of the most sensitive features of the natural environment - once displaced or used up, it is only with the greatest of difficulty, if at all, that they can be replaced. Typical natural resources and land forms are wetlands, prime agricultural land, coastal zones, minerals and ores, and forest lands.			
An action should be considered as a possible candidate for an EA or EIS when it.			
a) precipitates changes in a land form which would affect its stability;	☐	☒	☐
b) destroys sand dunes, natural levees and other barriers which protect lands from flooding, or proposes development in flood prone areas;	☐	☒	☐
c) decreases the amount of topsoil associated with a land area to the extent that plant species traditional to the general area could not be reintroduced to a significant portion of the area affected;	☐	☒	☐
d) significantly changes the concentration of ambient substances in the soil over a large area (say 100 acres), such as irrigation;	☐	☒	☐
e) mixes a foreign or artificial substance into the soil over a large area (say 100 acres), such as fertilizers;	☒	☐	☐
f) affects the accessibility of known or suspected natural resources to the extent that it increases or decreases the economic feasibility of their exploitation;	☐	☒	☐
g) significantly increases the amount of a mineral or a fossil fuel being mined, quarried or used annually within a country;	☐	☒	☐
h) perpetuates the generation of wastes in the form of materials which could reasonably be recycled but are not ("reasonably" being determined by available technology and volume).	☐	☒	☐
7. Air Quality, Meteorology and Noise			
Air quality is one of the principal considerations in assessing the consequences of an action on the human environment. The adverse effects of increased air borne contaminants are primarily related to human health, but also include vegetative damage, soiling and accelerated weathering of exposed materials.			

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
A proposed project acts both as an air pollution source and as a receptor; that is, it can generate pollutants that contribute to existing levels, and the project area is subject to pollutant emissions from surrounding areas. Air pollution sources from typical AID projects include fuel combustion for heating, power plants, automotive traffic generated and induced by the project, and aerial spraying of chemicals.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) introduces one or more pollutants into an air shed;	☐	☒	☐
b) creates changes in the weather;	☐	☒	☐
c) creates sound levels which will affect human or faunal activities;	☐	☒	☐
d) causes or tends to cause a significant change in the albedo (reflectivity of the earth's surface) or the amount of heat exchanged between the earth and the atmosphere over a large area, such as the clearing of forest for field crops, or the inundation of land area by artificially created water bodies.	☐	☒	☐
8. Socioeconomics			
Some of the most significant impacts on the human environment are those that affect a community or area's social and economic patterns. The effects of change are particularly important in the less developed countries because many of these countries are in transition from a traditional society to one that is pre-industrial or industrial.			
An action should be considered as a positive candidate for an EA or EIS when it:			
a) displaces populations, or resettles rural populations;	☐	☒	☐
b) interrupts traditional community ways of life (nomadic, pastoral, agricultural) so that social patterns or life styles change;	☒	☐	☐
c) causes aboriginal communities to become more susceptible to acculturation;	☐	☒	☐
d) changes health conditions by the improvement of health delivery services, provision of clean water, construction of sanitary sewer facilities, improvement of air quality, etc.	☐	☒	☐
e) alters family patterns and values as a result of structural changes in transportation, agriculture, employment, etc.	☒	☐	☐
f) changes the demographic profile;	☐	☒	☐
g) measurably increases family income	☐	☒	☐
h) provides educational facilities or services to a broad geographic area.	☐	☒	☐
9. Other (list)			
_____	☐	☐	☐
_____			
_____	☐	☐	☐
_____			
_____	☐	☐	☐
_____			
_____	☐	☐	☐
_____			
_____	☐	☐	☐
_____			
_____	☐	☐	☐
_____			

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
IMPACT ON THE GLOBAL ENVIRONMENT AND/OR THE U.S.			
When a proposed AID activity significantly affects the global and/or U.S. environment, then an EIS is to be prepared. In order to significantly affect the global or U.S. environment, the airborne or waterborne contaminant, effluent or other release of the proposed activity must directly or indirectly impact the high seas, global atmosphere, or the United States. The above General and Specific Criteria indicate whether a project's impacts are significant. If they are significant, then a second determination must be made as to whether the significance is of a global nature or whether the project impacts on the U.S.			
In making this determination with respect to pollutants and/or certain diseases, the following factors should be considered in an integrated manner:			
1. Magnitude Is the pollutant introduced or added to the environment in sufficient quantities or of such a nature as to have a measurable effect at locations well beyond the point or area of introduction, or is it introduced or added to the environment at many locations? Does it tend to be concentrated by its nature or by any mechanism within the environment (e.g., through the food chain)?	☐	☒	☐
2. Potency Is the pollutant of consequence in terms of its inherent deleterious qualities or intermediate or catalytic capabilities?	☐	☒	☐
3. Duration Is the pollutant of a short lived nature, or is it relatively long lived in the natural environment in terms of its biodegradability, half-life, etc.?	☐	☒	☐
4. Transport Mechanism Is the pollutant capable of being carried significant distances from the project site by wind, water, human or animal means?	☐	☒	☐
5. Effects Are the effects of the pollutant of an acute, readily identifiable nature or does the project contribute a pollutant which is less discernible from the background level thereby creating a more insidious or chronic condition?	☐	☒	☐
It is important that these criteria be examined and discussed in the IEE together and concurrently rather than separately in weighing the potential for global, extra-jurisdictional or U.S. consequences of a project.			

Discussion of Impacts

A. General Criteria

2. The project is a large multidonor project consisting of a complex of activities designed to improve stockraising practices and production. The total five-year program is estimated to cost sixteen million dollars, of which five million dollars will be AID's contribution. Other contributors will come from the LCBC/host countries (four million dollars); the UNDP/FAO (three million dollars); and the FACC (four million dollars).

The approach to achieve project objectives will be by stockraising, range management and mixed crop production, coupled with a social sensitivity to the cultural impacts of the project. Stockraising, range management and mixed crop production will involve a variety of activities, including marketing, husbandry, breeding, water resource development, agronomy, education, etc. This project will impact the natural environment in terms of land and water utilization.

A serious constraint to the further development of the livestock industry of the Assale-Serbewel is the overstocking and degradation of the land. It is reasoned, therefore, that combined programs of increasing herd offtake and encouraging the livestock producers/subsistence farmers to expand their activities in farming would help to alleviate the problem.

The objective of this project was to increase livestock production efficiency by improving traditional African animal husbandry and range use practices. This was to be realized by convincing traditional breeders to adopt improved livestock practices. The project was of an integrated nature, tying together producer associations, animal health, animal nutrition, animal husbandry, and marketing programs.

B. Specific Criteria

1.a). An important element of the project's success will be the provision of adequate year-round water for livestock and for crop production. The source would be either from ground or surface water resources, depending on the location and the season. New wells will undoubtedly be developed to tap ground water resources. To improve crop production, new irrigation systems may have to be developed or expanded.

A successful project will require considerably greater and more efficient use of hydrologic resources than is currently being done.

It should also be noted that creation of ponds, irrigation ditches or other forms of standing water create, in turn, a new set of problems relating to degradation of these waters which impact the human environment. Mosquitos, schistosomiasis and expansion of the tse-tse fly are possible adverse effects.

However, this might be offset by the greater water retention capability of the soil deriving from improved range management practices.

1.e). Development of wells for livestock and irrigation may reduce the ground water table and adversely affect native vegetation and the wildlife dependent on the vegetation.

Although it is unlikely that the Chari River will be affected by the water use proposed in the project, this should be investigated because of the river's importance to a substantial fishing industry.

3.c). An objective of the project is to stabilize, or preferably reduce, the number and mix of livestock. If this is successful, substantial improvements to the natural range should be achieved.

4.a). The land use patterns in the area will be changed in the following ways:

-- areas devoted to crops will probably be enlarged;

-- more intensive cropping practices will be introduced;

-- natural range vegetation should be improved.

6.e). The use of chemical fertilizers is not an important aspect of the program. However, if new cultural techniques of agriculture are introduced (benefits of weeding, optimum space cropping, mulching, crop rotation, etc.) and are successful, a logical second step would be to introduce technological methods, such as chemical fertilizers. At present, agriculture is basically subsistence -- if it is to be successfully upgraded, then a new generation of techniques will probably be introduced.

8.b) and .e). The project will clearly affect the traditional community way of life. Cattle and sheep are important to the economic, social and religious life of the inhabitants of the area. The number of cattle rather than their quality is perceived as wealth. They are also figured in bride price. Thus, to stabilize or reduce the number of cattle is to place limits on wealth, position and stature.

Sheep are important for Islamic ritualistic slaughter. Although they fit in well with cattle, they are susseptible to parasitism and pneumonic diseases. They are, however, an important source of meat, as are goats.

Expansion of crop production will also impact the social and cultural values of the area. It will reduce or eliminate the semi-nomadic life of some of the Arabs as well as impose new duties in terms of farm labor on the men -- duties which traditionally have been the women's.

Discussion of Alternatives

USAID has determined that rural development would receive first priority in the U.S. economic assistance strategy for both Chad and the Cameroons. This AID strategy is explicitly described in the 1976-1980 DAP for both countries. The DAPs list the development of livestock/agricultural production as an activity that should receive AID support.

A serious constraint to the further development of the livestock industry of the Assale-Serbewel is the overstocking and degradation of the land. Several alternative approaches to mitigating this constraint were considered, including:

a. No Change. The "no change" alternative is not necessarily status quo. Continuation of a "no change" attitude would lead to further degradation of livestock and range from overgrazing by excessively large, poorly nourished herds.

b. Major Crop Development. This would involve a long-range program farming development program intended to introduce a major shift away from livestock raising. The disadvantages to this approach are (i) the limited potential of the area for extensive crop raising, and (ii) the socioeconomic impacts resulting from a significant change in the area's way of life.

c. Increase Off-Take. One of the important reasons for herd degradation is the limited annual herd off-take. In western countries, this off-take amounts to 30% of the herd -- in the Assale-Serbewel, it is more like 10%. This limited off-take results in larger herds and concurrent overgrazing.

In order to increase off-take, traditional African husbandry, as well as cultural values, would have to be changed. This could be realized by convincing traditional breeders to adopt improved livestock

practices. The program would be comprehensive, tying together producer associations, animal health, animal nutrition, animal husbandry and marketing programs. A major problem with this approach is that no substitute to a livestock-oriented livelihood is offered, but rather fewer and better livestock.

d. Selected Alternative. The selected alternative is a combination of b. and c. above and described fully in the project documentation. This alternative is directed towards reducing the area's inhabitants' dependence on livestock by encouraging the inhabitants to gain more of their livelihood from farming -- recognizing, however, the limited agricultural potential of the area and the importance of livestock raising.

Summary Conclusions

This project is a large-scale, pilot program involving large areal land and/or vegetative development and transformation. It will have a significant impact on the human environment, but will not affect the global environment of the United States.

An EA should be prepared for this project covering the full multidonor aspects of the project. Environmental concerns which should specifically be addressed in the EA include:

1) Effect of ground water utilization to achieve stockraising and crop production objectives on the hydrologic and ecologic regimes.

2) Effect of improved range on possible increase of predators, parasites, etc.

3) Probability of use of increased fertilizers and effect on surface water conditions, if any.

4) Effect on traditional village, tribe and family structure and relationships based on new perceptions of prestige and responsibility.

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT TITLE	Rural Access Roads	RECOMMENDATION (CHECK ONE)	
PROJECT NO.		NEG. DET.	X
LOCATION	Bolivia	EA	
BUREAU	ARA/LA	EIS	
		NEG. DEC.	

RESPONSIBLE OFFICIAL _____ TITLE: _____

DATE _____

DIRECTIONS FOR PREPARING THE INITIAL ENVIRONMENTAL EXAMINATION (IEE)

1. Official Responsible for Preparing the IEE

The IEE will be prepared by the originator of the project. He will:

a) Obtain the information needed for the preparation of the IEE;

b) Consult with appropriate bureaus and offices, and other appropriate sources of environmental expertise not available within the responsible official's bureau or office, as well as host country personnel, wherever possible and appropriate;

c) Prepare the IEE and ensure that it considers the environmental consequences of the proposed activity;

d) Recommend the threshold decision as to whether a Negative Determination should be made or which type of environmental report is required (EA or EIS); and

e) Transmit the IEE with other pertinent project documents.

2. Content of the IEE

The IEE shall fulfill and satisfy, to the extent practical, the information necessary to make a threshold decision regarding the environmental significance of the proposed project. The IEE should clearly describe the likely environmental impacts of the proposed project and its alternatives to the extent that they can be predicted or anticipated. The IEE is the first formal consideration of environmental impacts in the AID project review and approval process. The IEE, therefore, should be prepared in conjunction with the project documents it accompanies. Highly technical and specialized analyses and data will not ordinarily be included as part of the IEE.

Following is the content of the IEE:

a) Cover Sheet

b) Body of the IEE

The body of the IEE shall include:

- A brief description of the environment affected.

A general description of the site or area, its major land and water forms, ecology, climate, land use, population, and socioeconomic characteristics should be included in the IEE. The description of the environment should be in scale with the project and expressed in terms of its likely impacts. Any special cultural features likely to be affected by the proposed action should also be described. The description of the environment should be on the basis of readily available maps and published information. On-site surveys and monitoring are not required for preparation of this section.

- Threshold Decision Criteria form.

This form is an essential element of the IEE and is to be completed as part of the submission.

- Discussion of impacts.

Each of the impacts checked as "Yes" in the Threshold Decision Criteria form is to be identified and discussed. The purpose of the discussion is to succinctly expand on the environmental impacts, both adverse and beneficial, checked in the form. This discussion will briefly describe the major impacts in order to make a reasoned judgment as to the environmental significance of the proposed action.

Based on the impacts identified on the Threshold Decision Criteria form, a brief discussion will be included, if necessary, addressing whether the proposed action significantly affects the global or extra-jurisdictional environment (oceans or air) and/or the United States. The purpose of this discussion is to ascertain the need to prepare an EIS.

- Discussion of alternatives.

Alternative approaches to the problem being addressed by the proposed project should be described and briefly analyzed with respect to their environmental impacts. The various alternatives should be compared with respect to both their effectiveness in dealing with the problem being addressed and their environmental impacts.

The discussion and comparison of alternatives need not be exhaustive, but should be sufficient to permit a well founded choice of alternatives. The listing of general and specific threshold criteria should be used as the basis for a comprehensive discussion and uniform comparison of alternatives.

- Summary conclusion.

The significance determination should be briefly discussed here. If the project impacts significantly on the environment, then the discussion should also include the major environmental issues to be addressed in the EA or EIS, including the likely U.S. agencies to conduct the review.

3. Submission and Distribution of the IEE

The IEE will accompany the PRP or equivalent document through the usual document approval process.

In addition, those IEE's which recommend preparation of an EA will be circulated to appropriate U.S. Federal Agencies for comment, as outlined in the CEQ guidelines and amplified by AID Regulation 16.

A Brief Description of the Environment Affected

The rural access roads project is located in central Bolivia generally in a broad area extending from north of La Paz to Sucre. This region is the eastern Andes and is commonly called the Cordillera Oriental.

To the west of the Cordillera Oriental is the bleak and forbidding Altiplano, a barren and desolate plateau. East of the Cordillera Oriental is the enormous Oriente area. The Oriente topography is flat to gently rolling and is part of the enormous Matto Grosso tropical jungle and savannah.

The Cordillera Oriental is divided into two subregions: the Yungas and the Valles. The Yungas are steep, semi-tropical, river valleys with rich soils, heavy rains and lush vegetation. Heavily forested ridges separate the valleys, and although the land is extremely fertile and close to La Paz, the Yungas have remained a thinly populated and developed region because of its steep slopes.

South of the Yungas lies the Valles region in which valleys and basins are broader and more extensive than in the Yungas. Their alluvial soils - notably those of Cochabamba, Sucre, and Tarija - support the country's most intensive agriculture. The high ridges and plateaus of the region, known as the puna, are unproductive and sparsely peopled. The removal of much of the vegetation has resulted in poor water retention leading to alternating droughts and floods, which have ruined many terraces and fields.

Although broader than the valleys of the Yungas, those of the Valles region are also deeply entrenched. The drainage pattern is divided between the system of the Pilcomayo River, which rises in the heart of the region and flows southward to join the Paraguay River near Asuncion in Paraguay, and the system of the Chapare, Ichilo, and Rio Grande rivers, which join in the Oriente to form the Mamore, whose waters eventually reach the Amazon.

The natural vegetation of the Yungas is the montane rain forest (low selva), which differs from the true tropical rain forest or selva (sometimes called high selva) of the Amazon in the smaller size and more open distribution of the trees and the greater density and variety of the undergrowth. The two forest types are also known respectively as the low selva and high selva - not because of their elevations above sea level but because of the difference in height of their largest trees. The

descending lateral highlands of the Yungas are relatively barren, but the intervening valleys support plant life of immense vigor and variety. Tree species include mahogany cedar, walnut, laurel, lignum vitae, ceiba, and dyewoods. In the lower reaches, many kinds of palm appear. The trees are draped in lianas, and creepers, ferns, succulents, lichens, and mosses abound.

Yungas slopes are terraced for the cultivation of coca bushes, the economic mainstay of the region. A product of past importance to the area was the bark of the cinchona (quina) tree, from which antimalarial quinine was produced. Other medicinal and aromatic species include vanilla, sarsaparilla, saffron, and the vilca - a shrub that yields tannin. Below 6,000 feet, semitropical and tropical fruits, such as bananas, pineapples, avocados, custard apples (chirimoyas), mangoes, and Indian figs are found.

The natural vegetation of the Valles at higher elevations consists mainly of rough mountain grassland and occasional stunted trees, blown asymmetrical by the mountain winds. In valleys and basins, drought-resistant scrub and small trees predominate. The most usable of its trees are the walnut and the quebracho, a tree of extremely hard wood that is a source of both timber and tannin.

Although Bolivia has several species that are considered rare and/or endangered (vicuña and vixcacha), they are not located in the Cordillera Oriental, but rather in the Altiplano. Species of animals are found in the greatest variety and abundance in the lower reaches of the Yungas. Among the most common are the tiger, or jaguar, wild pigs, various monkeys, squirrels, badgers, peccaries, anteaters, ocelots, armadillos, opossums, and sloths.

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
GENERAL CRITERIA			
1. Are the effects of an action likely to be irreversible? Irreversible impacts relate not only to the use of non-renewable resources in the construction or implementation of a project, but also to the ongoing and induced impacts caused by the operation of the project. For example, infrastructure improvements such as rural electrification, sewer projects and dams set in motion urban and rural developments that are usually irreversible.	☒	☐	☐
2. Does the project involve a complex of actions with individually limited but cumulatively considerable effects? Individual projects which by design (for reasons of funding, sequencing, etc.) or by circumstance are actually parts of a larger program should be viewed in the context of their contribution to that program.	☒	☐	☐
3. Do the actions involve a limited investment, but set a precedent for future actions, or represent a decision in principle about future actions? Many projects become self-justifying by creating the need for additional projects. Certain pilot projects and limited programs fall into this category whereby their future application initiates a whole series of secondary impacts.	☐	☒	☐
4. Does the action curtail the range of beneficial uses of the human environment and its resources, or serve short-term goals to the disadvantage of long-term environmental goals? Some actions can usurp a portion of an ecosystem to the exclusion of other legitimate uses of that ecosystem. This sort of problem most frequently arises in the areas of land use and the aquatic environment, such as irrigation projects, forestation, reservoirs and urbanization.	☐	☒	☐
5. Is the action likely to be highly controversial? The controversiality of an action indicates that it is important to someone in the host country, to the international community or to the United States; and therefore a significant action.	☐	☒	☐
SPECIFIC CRITERIA			
The following specific criteria are intended to assist in the determination of the significance of an activity's impact on the human environment. It is not a complete catalogue and should not be viewed as the only environmental impacts which are to be considered.			
1. Water Resources			
Water resources can be described in terms of surface water and ground water. Surface waters refer to the waters found in streams, rivers, ponds, lakes, swamps, reservoirs, and other places where it can be seen. Ground water is defined as the water found in the pores of subsurface materials. The geologic formations in which ground water is contained are called aquifers. The distinction between ground water and surface water is not one of type but rather of where the water is found. Ground water often contributes a major portion of the flow of surface water. Likewise, surface waters often form a major recharge source for ground water. Water supplies may be obtained from either ground or surface waters. A project can endanger water supplies through construction of facilities, runoff, or overdrafting (rate of water withdrawal is greater than the rate at which it is replenished). A project can be endangered by flooding from both human-related and natural causes.			
An action should be considered a possible candidate for an EA or EIS when it:			
a) adds a new technological use to an aquatic environment such as withdrawal for potable water, discharge for sanitary sewerage, or introduction of a new fishing industry;	☐	☒	☐
b) introduces a technological system such as water diversion for irrigation systems, dams, etc., which would significantly interfere, either during installation or operation, with existing natural water systems;	☐	☒	☐
c) significantly reduces or increases the surface area of an aquatic environment;	☐	☒	☐
d) increases the amount of water in an aquatic environment to the extent that the number of annual floods is increased or the water surface level is increased during periods of flooding;	☐	☒	☐
e) brings about a measurable change in the volume or level of water within a natural aquatic environment, such as swamp drainage or filling in flood plains, or the water table as a result of water wells, etc.;	☐	☒	☐
f) involves the use, destruction, or creation of wetlands, coral areas, hot springs, tundra, or other environmentally sensitive areas.	☒	☐	☐
2. Water Quality			
Human activity impacts surface and ground water by many different mechanisms. Contaminated storm water runoff, sediment and the discharge of wastes are prime causes of surface water degradation; while septic tank seepage, leaky sewer lines, the improper disposal of cleaning agents, and contamination of recharge zones by all of the above are some of the causes of ground water pollution. In turn, water of poor quality, whether degraded by human or natural causes, impacts human activities by limiting the range of uses that a given water body may serve.			
An action should be considered as a possible candidate for an EA or EIS when it:			

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
a) erodes soil into a surface aquatic environment to the extent that the annual siltation rate or average turbidity in the aquatic environment will be measurably increased;	X		
b) measurably increases human or domesticated animal waste into surface aquatic environments (directly or indirectly) or ground water supplies;	X		
c) measurably changes the concentration of naturally occurring substances in surface aquatic environments or ground water supplies, such as salt water intrusion, or filling in of marshland from siltation;		X	
d) introduces an artificial or foreign substance into a surface aquatic environment system or ground water supply from point or non-point sources or will increase the existing concentration of any such substance;		X	
e) introduces an admixture of artificial or foreign substances into a wetland, hot spring, tundra, coral area or other environmentally sensitive area;		X	
f) changes the average ambient temperature of an aquatic environment.		X	
3. Ecology			
Biotic resources are the plants and animals of an area. Because of the rate at which biological resources are being lost or altered by land and water transformation, it is important to carefully assess the importance of these losses.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) affects a species identified as endangered, rare or depleted;		X	
b) usurps air space which would interfere with established bird migration routes, such as smoke stacks, transmission lines or air traffic patterns at airports;		X	
c) introduces a species to an environment or significantly increases or decreases the populuation of a species, such as introducing domestic livestock to natural range;		X	
d) reduces the available habitat utilized by an indigenous species;		X	
e) brings about an identifiable change in the genetic make-up of a plant or animal;		X	
f) destroys an indigenous plant population covering a large area, e.g., 50 acres;		X	
g) introduces, concentrates or increases the population density of a pathogenic micro-organism in an environment, such as bacteria from waste water treatment plants.		X	
h) creates or precipitates an identifiable change in the behavior patterns of species which could, over time, lead to a measurable change in the population density of the species (behavior patterns refer to the patterns of feeding, mating, and movement);		X	
i) establishes or expands an industry which uses a measurable portion of an area's animal or plant resources on an annual basis, such as lumbering operations, fishing, hides, etc.		X	
4. Land Use and Man-Made Facilities			
Land use and man-made facilities refer to the development of an area for human activities. Human activities impose a change on the natural environment. This change can be far-reaching in the case of human settlements, or limited in the case of subsistence agriculture. In the former case, substantial and sophisticated support systems are required to sustain the larger and more densely populated settlements. These support systems draw on the natural environment either for consumption (water, vegetation, raw materials) or as effluent receptors (water bodies, air, land).			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) changes the land use patterns of an area (type or intensity);	X		
b) introduces a technological use to a parcel of land which traditionally has been in a natural state;		X	
c) significantly increases the amount of waste materials generated in the affected region, area or political subdivision;		X	
d) requires the temporary storage of hazardous waste materials when their ultimate disposition is not known or is not an inherent part of the proposed action;		X	
e) introduces or tends to introduce humans to an environment on a permanent or continual basis which was previously unoccupied;		X	
f) brings about a significant change in the population density of a human settlement;		X	
g) reduces the amount of food, water, energy, shelter or other services available to a human settlement for a significant period;		X	

THRESHOLD DECISION CRITERIA

NOTE:
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	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
h) creates or expands the production of electrical power and/or associated delivery systems;	☐	☒	☐
i) develops or expands water purification, storage and/or delivery systems;	☐	☒	☐
j) creates or expands sewage treatment and/or the addition of an interceptor sewer;	☐	☒	☐
k) establishes a new transportation service or extends an existing ground transportation service.	☒	☐	☐
5. Cultural, Recreational and Legal			
The character of a community is often shaped by those buildings, sites, areas or districts which have special historic and cultural interest or significance. Such historic and cultural entities may have been the location of historic events of international, national, state, or local importance; associated with notable persons or groups; possessed distinctive architectural design, landscape treatment, or other artistic features; presented the pre-history of an area; or are just interesting as curiosities. These sites and structures have value, and are an important resource for a community in determining its historic and cultural heritage which, if lost, cannot be replaced.			
Host Government laws, regulations and standards relating to environmental issues are indicative of a sensitivity to those issues and should be considered in the environmental review process.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) destroys or alters any natural landmark, historic or archaeologic propery/site, or property having significant cultural or religious value, including those listed by the World Heritage Committee pursuant to Article XI of the "Convention Concerning the Protection of the World Cultural and Natural Heritage," of November 1972.	☐	☒	☐
b) is proximal to a park, wildlife refuge, preserve or other such recreational or natural area, whether or not the area is officially designated for such uses;	☐	☒	☐
c) contravenes, or significantly contributes to the contravention of Host Government laws, regulations, guidelines, etc., pertaining to air and water quality;	☐	☒	☐
d) contravenes Host Government laws, regulations, guidelines, master plans, etc., pertaining to land use (and use of water areas);	☐	☒	☐
e) contravenes, or significantly contributes to the contravention of Host Government regulations, guidelines, etc., pertaining to odors or noise.	☐	☒	☐
6. Natural Resources and Land Forms			
Natural resources and land forms are some of the most sensitive features of the natural environment - once displaced or used up, it is only with the greatest of difficulty, if at all, that they can be replaced. Typical natural resources and land forms are wetlands, prime agricultural land, coastal zones, minerals and ores, and forest lands.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) precipitates changes in a land form which would affect its stability;	☐	☒	☐
b) destroys sand dunes, natural levees and other barriers which protect lands from flooding, or proposes development in flood prone areas;	☐	☒	☐
c) decreases the amount of topsoil associated with a land area to the extent that plant species traditional to the general area could not be reintroduced to a significant portion of the area affected;	☐	☒	☐
d) significantly changes the concentration of ambient substances in the soil over a large area (say 100 acres), such as irrigation;	☐	☒	☐
e) mixes a foreign or artificial substance into the soil over a large area (say 100 acres), such as fertilizers;	☐	☒	☐
f) affects the accessibility of known or suspected natural resources to the extent that it increases or decreases the economic feasibility of their exploitation;	☐	☒	☐
g) significantly increases the amount of a mineral or a fossil fuel being mined, quarried or used annually within a country;	☐	☒	☐
h) perpetuates the generation of wastes in the form of materials which could reasonably be recycled but are not ("reasonably" being determined by available technology and volume).	☐	☒	☐
7. Air Quality, Meteorology and Noise			
Air quality is one of the principal considerations in assessing the consequences of an action on the human environment. The adverse effects of increased air borne contaminants are primarily related to human health, but also include vegetative damage, soiling and accelerated weathering of exposed materials.			

THRESHOLD DECISION CRITERIA

NOTE:
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	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
A proposed project acts both as an air pollution source and as a receptor; that is, it can generate pollutants that contribute to existing levels, and the project area is subject to pollutant emissions from surrounding areas. Air pollution sources from typical AID projects include fuel combustion for heating, power plants, automotive traffic generated and induced by the project, and aerial spraying of chemicals.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) introduces one or more pollutants into an air shed;	X		
b) creates changes in the weather;		X	
c) creates sound levels which will affect human or faunal activities;		X	
d) causes or tends to cause a significant change in the albedo (reflectivity of the earth's surface) or the amount of heat exchanged between the earth and the atmosphere over a large area, such as the clearing of forest for field crops, or the inundation of land area by artificially created water bodies.		X	
8. Socioeconomics			
Some of the most significant impacts on the human environment are those that affect a community or area's social and economic patterns. The effects of change are particularly important in the less developed countries because many of these countries are in transition from a traditional society to one that is pre-industrial or industrial.			
An action should be considered as a positive candidate for an EA or EIS when it:			
a) displaces populations, or resettles rural populations;		X	
b) interrupts traditional community ways of life (nomadic, pastoral, agricultural) so that social patterns or life styles change;		X	
c) causes aboriginal communities to become more susceptible to acculturation;		X	
d) changes health conditions by the improvement of health delivery services, provision of clean water, construction of sanitary sewer facilities, improvement of air quality, etc.		X	
e) alters family patterns and values as a result of structural changes in transportation, agriculture, employment, etc.		X	
f) changes the demographic profile;		X	
g) measurably increases family income		X	
h) provides educational facilities or services to a broad geographic area.		X	
9. Other (list)			
_____			
_____			
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THRESHOLD DECISION CRITERIA

NOTE:
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IMPACT ON THE GLOBAL ENVIRONMENT AND/OR THE U.S.

When a proposed AID activity significantly affects the global and/or U.S. environment, then an EIS is to be prepared. In order to significantly affect the global or U.S. environment, the airborne or waterborne contaminant, effluent or other release of the proposed activity must directly or indirectly impact the high seas, global atmosphere, or the United States. The above General and Specific Criteria indicate whether a project's impacts are significant. If they are significant, then a second determination must be made as to whether the significance is of a global nature or whether the project impacts on the U.S.

In making this determination with respect to pollutants and/or certain diseases, the following factors should be considered in an integrated manner:

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
1. Magnitude Is the pollutant introduced or added to the environment in sufficient quantities or of such a nature as to have a measurable effect at locations well beyond the point or area of introduction, or is it introduced or added to the environment at many locations? Does it tend to be concentrated by its nature or by any mechanism within the environment (e.g., through the food chain)?	☐	☒	☐
2. Potency Is the pollutant of consequence in terms of its inherent deleterious qualities or intermediate or catalytic capabilities?	☐	☒	☐
3. Duration Is the pollutant of a short lived nature, or is it relatively long lived in the natural environment in terms of its biodegradability, half-life, etc.?	☐	☒	☐
4. Transport Mechanism Is the pollutant capable of being carried significant distances from the project site by wind, water, human or animal means?	☐	☒	☐
5. Effects Are the effects of the pollutant of an acute, readily identifiable nature or does the project contribute a pollutant which is less discernible from the background level thereby creating a more insidious or chronic condition?	☐	☒	☐

It is important that these criteria be examined and discussed in the IEE together and concurrently rather than separately in weighing the potential for global, extra-jurisdictional or U.S. consequences of a project.

Discussion of Impacts

A. General Criteria

1. The improvement of portions of the existing road system to all-weather standards is likely to be irreversible. A major purpose of the project is to benefit an estimated 15,000 small farm families by providing them with year-round access to markets for their produce. This will encourage improvements to crop productivity which will in turn provide a basis for retaining and possibly further improving the road system. It is anticipated that with the improvement of 1,200 kilometers of all-weather access roads the project will increase small farmer productivity and income in the following four ways:

    1. the composition of production would shift in favor of higher value commodities;

    2. farmers with reliable all-weather access would market larger volumes of production;

    3. improved access to markets will reduce the transportation and spoilage elements of marketing costs; and

    4. convenient access to community and agricultural services will be provided.

2. The project is part of a complex of actions identified in the DAP strategy. Key crop production and improved marketing are two of the development priority problems so identified. The concentration of construction activities under this project (900 of the 1,200 Kms.) in the Cochabamba (excluding Chapare Province), Chuquisaca and Santa Cruz Departments largely coincides with the geographic focus of a variety of other AID programs. These programs will provide an overlap, to varying degrees with this project. They include loan projects in the agriculture sector (Agriculture Section I, the small farmer oriented FRA mechanism expanded under the Basic Foods Production Loan and the Small Farmer Organizations Loan), the education sector (particularly the Rural Education I Loan in Cochabamba), and the rural infrastructure sector (Rural Electrification I and II). It is expected that this concentration of effort will have a synergistic effect, serving to reinforce and complement the contribution that each of the programs will make individually to the general development of the regions, and more specifically, to the target group within those regions. The inclusion of the

Yungas in the La Paz reflects the priority attached to improving the welfare of campesinos living close to the La Paz and Cochabamba urban markets who are unable to serve those markets on a regular basis because of an inadequate transport network.

B. Specific Criteria

1.f). Although more than 90% of the roads are improvements to existing rural roads, and therefore unlikely to destroy wetlands, it is possible (although unlikely) that with the upgrading to all-weather status, new and more direct alignments might be selected which would pass through wetlands. Engineering and/or construction supervisors should be trained to avoid construction through wetland areas.

2.a). During construction of the roads, there will be, in all likelihood, erosional deposition into nearby streams. This is not considered significant because of the limited construction activity.

4.a). The purpose of the project is to increase agricultural production and off-farm sales of agriculture/livestock production in Cochabamba Department and in selected areas of the Departments of Chuquisaca, La Paz and Santa Cruz through the provision of all-weather access roads. Such roads should facilitate the delivery of agricultural inputs and related services to the target farm group as well as stimulate additional agricultural production because of improved, year-round access to markets.

4.k). The rural access roads project will extend an existing transportation service by improving existing rural access roads to all-weather status. The extension of the system will be basically in terms of seasonal utility rather than additional distance.

7.a). Additional pollutants will be introduced into the air by vehicles. This additional pollutant load, however, is expected to be non-measurable over a standard 8-hour period.

Discussion of Alternatives

This project is one of a series of AID projects intended to assist GOB in improving agricultural productivity. A variety of alternate strategies were considered including target population (small producer/large producer), crop

production (research, pilot projects, mix of crops, etc.), and marketing methods (infrastructure improvement, institution, credits). As part of the anlaysis of alternatives, it was determined that AID and other donor assistance activity were addressing many of the strategies by funding different projects. An activity which was not being sufficiently addressed was infrastructure improvements.

On the basis of this consideration of alternate strategies and evaluation of needs, a project was selected to improve existing farm to market rural access roads intended to benefit 15,000 small market families.

As no project alternative would adversely affect the comprehensive approach to improving GOB's program to improve its agricultural productivity. As noted above, one of the reasons this rural roads project was selected was due to the gap in necessary infrastructure projects.

Summary Conclusion

This project is an important support to AID's overall program assistance to Bolivia's agricultural sector. Since it is intended to be an incremental improvement to an existing infrastructure system, the impact on the human environment is not expected to be significant.

INITIAL ENVIRONMENTAL EXAMINATION

		RECOMMENDATION (CHECK ONE)	
PROJECT TITLE	Purchase of 1,600 Diesel Buses	NEG. DET.	☐
PROJECT NO.		EA	☒
LOCATION	Cairo, Alexandria, Egypt	EIS	☐
BUREAU	AA/NE	NEG. DEC.	☐

RESPONSIBLE OFFICIAL _____ TITLE: _____

DATE _____

DIRECTIONS FOR PREPARING THE INITIAL ENVIRONMENTAL EXAMINATION (IEE)

1. Official Responsible for Preparing the IEE

The IEE will be prepared by the originator of the project. He will:

a) Obtain the information needed for the preparation of the IEE;

b) Consult with appropriate bureaus and offices, and other appropriate sources of environmental expertise not available within the responsible official's bureau or office, as well as host country personnel, wherever possible and appropriate;

c) Prepare the IEE and ensure that it considers the environmental consequences of the proposed activity;

d) Recommend the threshold decision as to whether a Negative Determination should be made or which type of environmental report is required (EA or EIS); and

e) Transmit the IEE with other pertinent project documents.

2. Content of the IEE

The IEE shall fulfill and satisfy, to the extent practical, the information necessary to make a threshold decision regarding the environmental significance of the proposed project. The IEE should clearly describe the likely environmental impacts of the proposed project and its alternatives to the extent that they can be predicted or anticipated. The IEE is the first formal consideration of environmental impacts in the AID project review and approval process. The IEE, therefore, should be prepared in conjunction with the project documents it accompanies. Highly technical and specialized analyses and data will not ordinarily be included as part of the IEE.

Following is the content of the IEE:

a) Cover Sheet

b) Body of the IEE

The body of the IEE shall include:

- A brief description of the environment affected.

A general description of the site or area, its major land and water forms, ecology, climate, land use, population, and socioeconomic characteristics should be included in the IEE. The description of the environment should be in scale with the project and expressed in terms of its likely impacts. Any special cultural features likely to be affected by the proposed action should also be described. The description of the environment should be on the basis of readily available maps and published information. On-site surveys and monitoring are not required for preparation of this section.

- Threshold Decision Criteria form.

This form is an essential element of the IEE and is to be completed as part of the submission.

- Discussion of impacts.

Each of the impacts checked as "Yes" in the Threshold Decision Criteria form is to be identified and discussed. The purpose of the discussion is to succinctly expand on the environmental impacts, both adverse and beneficial, checked in the form. This discussion will briefly describe the major impacts in order to make a reasoned judgment as to the environmental significance of the proposed action.

Based on the impacts identified on the Threshold Decision Criteria form, a brief discussion will be included, if necessary, addressing whether the proposed action significantly affects the global or extra-jurisdictional environment (oceans or air) and/or the United States. The purpose of this discussion is to ascertain the need to prepare an EIS.

- Discussion of alternatives.

Alternative approaches to the problem being addressed by the proposed project should be described and briefly analyzed with respect to their environmental impacts. The various alternatives should be compared with respect to both their effectiveness in dealing with the problem being addressed and their environmental impacts.

The discussion and comparison of alternatives need not be exhaustive, but should be sufficient to permit a well founded choice of alternatives. The listing of general and specific threshold criteria should be used as the basis for a comprehensive discussion and uniform comparison of alternatives.

- Summary conclusion.

The significance determination should be briefly discussed here. If the project impacts significantly on the environment, then the discussion should also include the major environmental issues to be addressed in the EA or EIS, including the likely U.S. agencies to conduct the review.

3. Submission and Distribution of the IEE

The IEE will accompany the PRP or equivalent document through the usual document approval process.

In addition, those IEE's which recommend preparation of an EA will be circulated to appropriate U.S. Federal Agencies for comment, as outlined in the CEQ guidelines and amplified by AID Regulation 16.

A Brief Description of the Environment Affected

1. Geography

Although comprising only 3.5 percent of Egypt, the Nile Valley and Delta contain most of Egypt's population. From earliest times, reliable flooding and automatic renewal of fertility has contrasted with the enclosing sterile desert and has made habitation possible. The 550-mile narrow trench of the river from Aswan to Cairo (upper Egypt) exhibits some of the most densely settled agricultural land in the world. The gray mud-brick huts of villages huddle together every one or two miles, the surrounding land a mosaic of carefully tended small plots. Shadoofs and sakiehs lift the precious water onto the land from neighboring irrigation channels.

The delta (lower Egypt) which fans out from Cairo to Alexandria and the Mediterranean resembles the back of a leaf, with the river and canals obtruding like veins above the adjoining lowland. Nearly all the major towns and cities, the bulk of the country's industry and two-thirds of the total population are in this broad expanse of plain. Everywhere the pressure of population upon the land is alarming; poverty is extreme despite some of the highest yields in the world of such crops as wheat, rice, maize and cotton.

2. Climate

The greater part of Egypt lies within the zone of the great tropical deserts and its climate is characterized by aridity, a considerable temperature range (both seasonal and diurnal), a dry atmosphere and a maximum amount of sunshine throughout the year. The rhythm of the seasons is regular and the weather remarkably stable, broken only by disturbances associated with the passage of depressions along the Mediterranean in winter and from the interior of the Sahara in the summer. Summer and winter are the principal and longest seasons (May-September and November-March). The climate of the Mediterranean littoral and the country for a few miles inland differs markedly from the rest of Egypt since it experiences a small winter rainfall (four to eight inches), milder winters but slightly lower summer temperatures (Alexandria, January 56° F., August 78°), rather more humid air and rainless summers. Winter depressions along the Mediterranean bring to this limited area strong winds, cool weather and heavy rains. The delta shares the character of both the Mediterranean and Saharan climates, having a small winter rainfall (Alexandria, 8 inches, diminishing southward to Cairo, 1.3 inches) and mild winter temperatures and dry, hot summers (Cairo, January 53°, July 81°). South of the delta within the Saharan climatic zone, summer

temperatures rise above 100° (Aswan mean daily maximum in June 107°), the sun burning from a cloudless sky. At night a fall of 25°-30° takes place.

From April to June, sporadic depressions from the Sahara traverse Egypt toward the delta, bringing excessively dry southerly winds which, if strong, create dust and sand storms (khamsin) which may persist for three or four days. At Cairo they blow on about 11 days a year, and relative humidity may fall to under 10 percent. Temperatures drop markedly during the winter, mean temperatures during January being 55°-60° F.

3. Population

The population of Egypt is currently approximately 35,000,000 persons. Cairo and Alexandria have populations of 5,000,000 and 2,700,000, respectively. Egypt has a major population problem which has created deep repercussions in its economy. The dense overcrowding in the Nile valley and delta, which composes about 4 percent of the entire country, is in sharp contrast to the sparsely populated areas of the region as a whole. If the total habitable area is taken at 22,405 square miles (58,029 sq. km.), the density of the population was 1,562 per square mile (603 per sq. km.) in 1975. The majority of the people live by agriculture and agrarian population densities of this order are found in few other places in the world. Except for the scattered oases in the Western desert and the Red Sea littoral, almost the entire population of Egypt is to be found in the valley and delta of the Nile.

4. Road Transportation

About 65 percent of Egypt's 12,600 miles (20,280 km.) of roads are simply packed-earth roads suitable only for farm animals and carts. The modern highways date mostly from 1936 and were built mainly for strategic needs; these roads are constructed of concrete, of concrete base with asphalt top, or of limestone base with asphalt top. Unpaved roads, usually alongside canal banks, are of silt, always dusty and rendered muddy and nearly impassable by a little rain. The main roads are Cairo to Alexandria (desert road); Cairo to Alexandria via Banha, Tanta and Damanhur; Cairo to Suez; Cairo to Ismailia via At Tall Al Kabir (Tel el Kebir); Port Said to Suez following the canal on the western bank via Ismailia; Tanta to Ismailia via Az Zaqaziq (Zagazig); the Western desert road from Alexandria to As Sallum (Sollum) via Fukah and Matruh; the Sinai road from Ismailia, where the Suez Canal is crossed by ferry, to Al 'Awja on the Israeli frontier with a branch to A 'Arish, Rafah and Gaza; Cairo to Fayyum; and Cairo up the Nile valley to Asyut. There is no direct road connection between Alexandria and Port Said.

After 1952, road development received priority over railways and a number of improvement plans were begun, including the Cairo-Alexandria expressway completed in 1960.

Traffic conditions in Cairo and Alexandria are extremely heavy, considering the limited traffic capacity of most city streets. Typical of most middle eastern cities, air pollution is a serious and chronic problem.

Driving conditions on inter-city roads are often hazardous due to poor quality vehicles and no driver education.

THRESHOLD DECISION CRITERIA

NOTE:

CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
GENERAL CRITERIA			
1. Are the effects of an action likely to be irreversible? Irreversible impacts relate not only to the use of non-renewable resources in the construction or implementation of a project, but also to the ongoing and induced impacts caused by the operation of the project. For example, infrastructure improvements such as rural electrification, sewer projects and dams set in motion urban and rural developments that are usually irreversible.	☐	☒	☐
2. Does the project involve a complex of actions with individually limited but cumulatively considerable effects? Individual projects which by design (for reasons of funding, sequencing, etc.) or by circumstance are actually parts of a larger program should be viewed in the context of their contribution to that program.	☐	☒	☐
3. Do the actions involve a limited investment, but set a precedent for future actions, or represent a decision in principle about future actions? Many projects become self-justifying by creating the need for additional projects. Certain pilot projects and limited programs fall into this category whereby their future application initiates a whole series of secondary impacts.	☐	☒	☐
4. Does the action curtail the range of beneficial uses of the human environment and its resources, or serve short-term goals to the disadvantage of long-term environmental goals? Some actions can usurp a portion of an ecosystem to the exclusion of other legitimate uses of that ecosystem. This sort of problem most frequently arises in the areas of land use and the aquatic environment, such as irrigation projects, forestation, reservoirs and urbanization.	☒	☐	☐
5. Is the action likely to be highly controversial? The controversiality of an action indicates that it is important to someone in the host country, to the international community or to the United States; and therefore a significant action.	☐	☒	☐
SPECIFIC CRITERIA			
The following specific criteria are intended to assist in the determination of the significance of an activity's impact on the human environment. It is not a complete catalogue and should not be viewed as the only environmental impacts which are to be considered.			
1. Water Resources			
Water resources can be described in terms of surface water and ground water. Surface waters refer to the waters found in streams, rivers, ponds, lakes, swamps, reservoirs, and other places where it can be seen. Ground water is defined as the water found in the pores of subsurface materials. The geologic formations in which ground water is contained are called aquifers. The distinction between ground water and surface water is not one of type but rather of where the water is found. Ground water often contributes a major portion of the flow of surface water. Likewise, surface waters often form a major recharge source for ground water. Water supplies may be obtained from either ground or surface waters. A project can endanger water supplies through construction of facilities, runoff, or overdrafting (rate of water withdrawal is greater than the rate at which it is replenished). A project can be endangered by flooding from both human-related and natural causes.			
An action should be considered a possible candidate for an EA or EIS when it:			
a) adds a new technological use to an aquatic environment such as withdrawal for potable water, discharge for sanitary sewerage, or introduction of a new fishing industry;	☐	☒	☐
b) introduces a technological system such as water diversion for irrigation systems, dams, etc., which would significantly interfere, either during installation or operation, with existing natural water systems;	☐	☒	☐
c) significantly reduces or increases the surface area of an aquatic environment;	☐	☒	☐
d) increases the amount of water in an aquatic environment to the extent that the number of annual floods is increased or the water surface level is increased during periods of flooding;	☐	☒	☐
e) brings about a measurable change in the volume or level of water within a natural aquatic environment, such as swamp drainage or filling in flood plains, or the water table as a result of water wells, etc.;	☐	☒	☐
f) involves the use, destruction, or creation of wetlands, coral areas, hot springs, tundra, or other environmentally sensitive areas.	☐	☒	☐
2. Water Quality			
Human activity impacts surface and ground water by many different mechanisms. Contaminated storm water runoff, sediment and the discharge of wastes are prime causes of surface water degradation; while septic tank seepage, leaky sewer lines, the improper disposal of cleaning agents, and contamination of recharge zones by all of the above are some of the causes of ground water pollution. In turn, water of poor quality, whether degraded by human or natural causes, impacts human activities by limiting the range of uses that a given water body may serve.			
An action should be considered as a possible candidate for an EA or EIS when it:			

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
a) erodes soil into a surface aquatic environment to the extent that the annual siltation rate or average turbidity in the aquatic environment will be measurably increased;	☐	☒	☐
b) measurably increases human or domesticated animal waste into surface aquatic environments (directly or indirectly) or ground water supplies;	☐	☒	☐
c) measurably changes the concentration of naturally occurring substances in surface aquatic environments or ground water supplies, such as salt water intrusion, or filling in of marshland from siltation;	☐	☒	☐
d) introduces an artificial or foreign substance into a surface aquatic environment system or ground water supply from point or non-point sources or will increase the existing concentration of any such substance;	☐	☒	☐
e) introduces an admixture of artificial or foreign substances into a wetland, hot spring, tundra, coral area or other environmentally sensitive area;	☐	☒	☐
f) changes the average ambient temperature of an aquatic environment.	☐	☒	☐
3. Ecology			
Biotic resources are the plants and animals of an area. Because of the rate at which biological resources are being lost or altered by land and water transformation, it is important to carefully assess the importance of these losses.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) affects a species identified as endangered, rare or depleted;	☐	☒	☐
b) usurps air space which would interfere with established bird migration routes, such as smoke stacks, transmission lines or air traffic patterns at airports;	☐	☒	☐
c) introduces a species to an environment or significantly increases or decreases the populuation of a species, such as introducing domestic livestock to natural range;	☐	☒	☐
d) reduces the available habitat utilized by an indigenous species;	☐	☒	☐
e) brings about an identifiable change in the genetic make-up of a plant or animal;	☐	☒	☐
f) destroys an indigenous plant population covering a large area, e.g., 50 acres;	☐	☒	☐
g) introduces, concentrates or increases the population density of a pathogenic micro-organism in an environment, such as bacteria from waste water treatment plants.	☐	☒	☐
h) creates or precipitates an identifiable change in the behavior patterns of species which could, over time, lead to a measurable change in the population density of the species (behavior patterns refer to the patterns of feeding, mating, and movement);	☐	☒	☐
i) establishes or expands an industry which uses a measurable portion of an area's animal or plant resources on an annual basis, such as lumbering operations, fishing, hides, etc.	☐	☒	☐
4. Land Use and Man-Made Facilities			
Land use and man-made facilities refer to the development of an area for human activities. Human activities impose a change on the natural environment. This change can be far-reaching in the case of human settlements, or limited in the case of subsistence agriculture. In the former case, substantial and sophisticated support systems are required to sustain the larger and more densely populated settlements. These support systems draw on the natural environment either for consumption (water, vegetation, raw materials) or as effluent receptors (water bodies, air, land).			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) changes the land use patterns of an area (type or intensity);	☐	☒	☐
b) introduces a technological use to a parcel of land which traditionally has been in a natural state;	☐	☒	☐
c) significantly increases the amount of waste materials generated in the affected region, area or political subdivision;	☐	☒	☐
d) requires the temporary storage of hazardous waste materials when their ultimate disposition is not known or is not an inherent part of the proposed action;	☐	☒	☐
e) introduces or tends to introduce humans to an environment on a permanent or continual basis which was previously unoccupied;	☐	☒	☐
f) brings about a significant change in the population density of a human settlement;	☐	☒	☐
g) reduces the amount of food, water, energy, shelter or other services available to a human settlement for a significant period;	☐	☒	☐

THRESHOLD DECISION CRITERIA

NOTE:
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	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
h) creates or expands the production of electrical power and/or associated delivery systems;	☐	☒	☐
i) develops or expands water purification, storage and/or delivery systems;	☐	☒	☐
j) creates or expands sewage treatment and/or the addition of an interceptor sewer;	☐	☒	☐
k) establishes a new transportation service or extends an existing ground transportation service.	☐	☒	☐
5. Cultural, Recreational and Legal			
The character of a community is often shaped by those buildings, sites, areas or districts which have special historic and cultural interest or significance. Such historic and cultural entities may have been the location of historic events of international, national, state, or local importance; associated with notable persons or groups; possessed distinctive architectural design, landscape treatment, or other artistic features; presented the pre-history of an area; or are just interesting as curiosities. These sites and structures have value, and are an important resource for a community in determining its historic and cultural heritage which, if lost, cannot be replaced.			
Host Government laws, regulations and standards relating to environmental issues are indicative of a sensitivity to those issues and should be considered in the environmental review process.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) destroys or alters any natural landmark, historic or archaeologic propery/site, or property having significant cultural or religious value, including those listed by the World Heritage Committee pursuant to Article XI of the "Convention Concerning the Protection of the World Cultural and Natural Heritage," of November 1972.	☐	☒	☐
b) is proximal to a park, wildlife refuge, preserve or other such recreational or natural area, whether or not the area is officially designated for such uses;	☐	☒	☐
c) contravenes, or significantly contributes to the contravention of Host Government laws, regulations, guidelines, etc., pertaining to air and water quality;	☐	☒	☐
d) contravenes Host Government laws, regulations, guidelines, master plans, etc., pertaining to land use (and use of water areas);	☐	☒	☐
e) contravenes, or significantly contributes to the contravention of Host Government regulations, guidelines, etc., pertaining to odors or noise.	☐	☒	☐
6. Natural Resources and Land Forms			
Natural resources and land forms are some of the most sensitive features of the natural environment - once displaced or used up, it is only with the greatest of difficulty, if at all, that they can be replaced. Typical natural resources and land forms are wetlands, prime agricultural land, coastal zones, minerals and ores, and forest lands.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) precipitates changes in a land form which would affect its stability;	☐	☒	☐
b) destroys sand dunes, natural levees and other barriers which protect lands from flooding, or proposes development in flood prone areas;	☐	☒	☐
c) decreases the amount of topsoil associated with a land area to the extent that plant species traditional to the general area could not be reintroduced to a significant portion of the area affected;	☐	☒	☐
d) significantly changes the concentration of ambient substances in the soil over a large area (say 100 acres), such as irrigation;	☐	☒	☐
e) mixes a foreign or artificial substance into the soil over a large area (say 100 acres), such as fertilizers;	☐	☒	☐
f) affects the accessibility of known or suspected natural resources to the extent that it increases or decreases the economic feasibility of their exploitation;	☐	☒	☐
g) significantly increases the amount of a mineral or a fossil fuel being mined, quarried or used annually within a country;	☐	☒	☐
h) perpetuates the generation of wastes in the form of materials which could reasonably be recycled but are not ("reasonably" being determined by available technology and volume).	☐	☒	☐
7. Air Quality, Meteorology and Noise			
Air quality is one of the principal considerations in assessing the consequences of an action on the human environment. The adverse effects of increased air borne contaminants are primarily related to human health, but also include vegetative damage, soiling and accelerated weathering of exposed materials.			

THRESHOLD DECISION CRITERIA

NOTE:
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	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
A proposed project acts both as an air pollution source and as a receptor; that is, it can generate pollutants that contribute to existing levels, and the project area is subject to pollutant emissions from surrounding areas. Air pollution sources from typical AID projects include fuel combustion for heating, power plants, automotive traffic generated and induced by the project, and aerial spraying of chemicals.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) introduces one or more pollutants into an air shed;	X		
b) creates changes in the weather;		X	
c) creates sound levels which will affect human or faunal activities;	X		
d) causes or tends to cause a significant change in the albedo (reflectivity of the earth's surface) or the amount of heat exchanged between the earth and the atmosphere over a large area, such as the clearing of forest for field crops, or the inundation of land area by artificially created water bodies.		X	
8. Socioeconomics			
Some of the most significant impacts on the human environment are those that affect a community or area's social and economic patterns. The effects of change are particularly important in the less developed countries because many of these countries are in transition from a traditional society to one that is pre-industrial or industrial.			
An action should be considered as a positive candidate for an EA or EIS when it:			
a) displaces populations, or resettles rural populations;		X	
b) interrupts traditional community ways of life (nomadic, pastoral, agricultural) so that social patterns or life styles change;		X	
c) causes aboriginal communities to become more susceptible to acculturation;		X	
d) changes health conditions by the improvement of health delivery services, provision of clean water, construction of sanitary sewer facilities, improvement of air quality, etc.	X		
e) alters family patterns and values as a result of structural changes in transportation, agriculture, employment, etc.		X	
f) changes the demographic profile;		X	
g) measurably increases family income		X	
h) provides educational facilities or services to a broad geographic area.		X	
9. Other (list)			
_____			
_____			
_____			
_____			
_____			
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THRESHOLD DECISION CRITERIA

NOTE:
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IMPACT ON THE GLOBAL ENVIRONMENT AND/OR THE U.S.

When a proposed AID activity significantly affects the global and/or U.S. environment, then an EIS is to be prepared. In order to significantly affect the global or U.S. environment, the airborne or waterborne contaminant, effluent or other release of the proposed activity must directly or indirectly impact the high seas, global atmosphere, or the United States. The above General and Specific Criteria indicate whether a project's impacts are significant. If they are significant, then a second determination must be made as to whether the significance is of a global nature or whether the project impacts on the U.S.

In making this determination with respect to pollutants and/or certain diseases, the following factors should be considered in an integrated manner:

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
1. Magnitude Is the pollutant introduced or added to the environment in sufficient quantities or of such a nature as to have a measurable effect at locations well beyond the point or area of introduction, or is it introduced or added to the environment at many locations? Does it tend to be concentrated by its nature or by any mechanism within the environment (e.g., through the food chain)?	☐	☐	☒
2. Potency Is the pollutant of consequence in terms of its inherent deleterious qualities or intermediate or catalytic capabilities?	☐	☒	☐
3. Duration Is the pollutant of a short lived nature, or is it relatively long lived in the natural environment in terms of its biodegradability, half-life, etc.?	☐	☒	☐
4. Transport Mechanism Is the pollutant capable of being carried significant distances from the project site by wind, water, human or animal means?	☒	☐	☐
5. Effects Are the effects of the pollutant of an acute, readily identifiable nature or does the project contribute a pollutant which is less discernible from the background level thereby creating a more insidious or chronic condition?	☒	☐	☐

It is important that these criteria be examined and discussed in the IEE together and concurrently rather than separately in weighing the potential for global, extra-jurisdictional or U.S. consequences of a project.

Discussion of Impacts

A. General Criteria

4. The 1,600 buses to be used in the cities of Cairo and Alexandria will degrade the quality of the atmosphere. Although it will not significantly curtail the use of the atmosphere, it will impose costs on the users of the atmosphere. The human population will be adversely affected by the increase of CO and particulates in the atmosphere which will further degrade the highly polluted conditions in Cairo and Alexandria.

B. Specific Criteria

7.a). The pollutants dispersed into the atmosphere by the diesel buses are hydrocarbons (HC), carbon monoxide (CO), nitrogen oxides (NO_x) and particulates. Particulates in the form of smoke and dust, and CO are the major air quality problems that can be expected from the buses. The problem will be particularly acute in Cairo and Alexandria where climatic conditions during portions of the year do not disperse, but rather suspend and concentrate pollutants. Inadequate vehicle maintenance will exacerbate the conditions.

The health problems that could result from continuing degradation of air quality should not be underestimated.

7.c). Man's response to noise, within a broad range, is subjective, depending in part on expectations and in part on culture. It is clear, however, that the diesel buses will add to the noise and din of the city streets, and to a lesser extent, to inter-city roads. We do not know at this time whether noise is a significant problem; it will have, however, impacts in the cities of Cairo and Alexandria.

The diesel buses could also create pollution conditions of soiling and weathering. The latter is a particular concern if ancient monuments are defaced.

8.d). The intra-city buses will have an adverse effect on health conditions. The addition of pollutants from 400 additional diesel buses in Cairo and 200 in Alexandria to the highly polluted atmosphere of those cities should create chronic toxic conditions for the elderly and persons with throat and lung illnesses.

The impact of the 1,000 buses for inter-city travel is difficult to judge without knowing route conditions. However, in all likelihood, additional safety, hazard and congestion problems will be created.

Discussion of Alternatives

The commodities program does not lend itself to a discussion of alternatives at this stage because funds have been committed for the purchase of a variety of commodities, the selection of which is made after commitment of funds. Nevertheless, it is useful to review some of the alternatives which are possible.

1. Purchase of Other Commodities. It is possible to purchase other commodities (automobiles, replacement parts, road construction equipment, etc.) instead of buses. Recognizing the obsolete condition of buses, and the pressing need for transport rather than roads, the purchase of buses was a logical choice.

   A sub-alternative would be to purchase commodities which provided improved conditions in other areas (grains, farm equipment, etc.) but this would not be responsive to the identified transportation needs.

2. Subways for Intra-City. Although subways would eliminate much of the noise and atmospheric pollutants associated with buses, they are a long-range and extremely expensive solution.

3. Railroads for Inter-City. Rail lines currently exist for intercity; however, a need exists for rail head to village connections and these are best served by buses.

Summary Conclusion

The 600 diesel buses to be used in Cairo and Alexandria may create serious health problems in sections of the cities. Additionally, the noise associated with the opeation of the buses may create problems in noise sensitive areas (hospitals, residences, etc.) An EA should be prepared with special concern expressed for:

- impacts on air quality and noise
- impacts on health conditions
- impacts on traffic congestion and safety
- impacts on weathering of monuments, such as temples, pyramids, etc,

The latter condition is a special concern. If there is a problem and it is significant, then an EIS should be prepared because of their unique historic and cultural value.

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT TITLE	Pathfinder Fund - Family Planning Services	RECOMMENDATION (CHECK ONE)	
PROJECT NO.		NEG. DET.	X
LOCATION	World Wide	EA	
BUREAU	AA/PHA	EIS	
		NEG. DEC.	

RESPONSIBLE OFFICIAL _____ TITLE: _____

DATE _____

DIRECTIONS FOR PREPARING THE INITIAL ENVIRONMENTAL EXAMINATION (IEE)

1. Official Responsible for Preparing the IEE

The IEE will be prepared by the originator of the project. He will:

a) Obtain the information needed for the preparation of the IEE;

b) Consult with appropriate bureaus and offices, and other appropriate sources of environmental expertise not available within the responsible official's bureau or office, as well as host country personnel, wherever possible and appropriate;

c) Prepare the IEE and ensure that it considers the environmental consequences of the proposed activity;

d) Recommend the threshold decision as to whether a Negative Determination should be made or which type of environmental report is required (EA or EIS); and

e) Transmit the IEE with other pertinent project documents.

2. Content of the IEE

The IEE shall fulfill and satisfy, to the extent practical, the information necessary to make a threshold decision regarding the environmental significance of the proposed project. The IEE should clearly describe the likely environmental impacts of the proposed project and its alternatives to the extent that they can be predicted or anticipated. The IEE is the first formal consideration of environmental impacts in the AID project review and approval process. The IEE, therefore, should be prepared in conjunction with the project documents it accompanies. Highly technical and specialized analyses and data will not ordinarily be included as part of the IEE.

Following is the content of the IEE:

a) Cover Sheet

b) Body of the IEE

The body of the IEE shall include:

- A brief description of the environment affected.

A general description of the site or area, its major land and water forms, ecology, climate, land use, population, and socioeconomic characteristics should be included in the IEE. The description of the environment should be in scale with the project and expressed in terms of its likely impacts. Any special cultural features likely to be affected by the proposed action should also be described. The description of the environment should be on the basis of readily available maps and published information. On-site surveys and monitoring are not required for preparation of this section.

- Threshold Decision Criteria form.

This form is an essential element of the IEE and is to be completed as part of the submission.

- Discussion of impacts.

Each of the impacts checked as "Yes" in the Threshold Decision Criteria form is to be identified and discussed. The purpose of the discussion is to succinctly expand on the environmental impacts, both adverse and beneficial, checked in the form. This discussion will briefly describe the major impacts in order to make a reasoned judgment as to the environmental significance of the proposed action.

Based on the impacts identified on the Threshold Decision Criteria form, a brief discussion will be included, if necessary, addressing whether the proposed action significantly affects the global or extra-jurisdictional environment (oceans or air) and/or the United States. The purpose of this discussion is to ascertain the need to prepare an EIS.

- Discussion of alternatives.

Alternative approaches to the problem being addressed by the proposed project should be described and briefly analyzed with respect to their environmental impacts. The various alternatives should be compared with respect to both their effectiveness in dealing with the problem being addressed and their environmental impacts.

The discussion and comparison of alternatives need not be exhaustive, but should be sufficient to permit a well founded choice of alternatives. The listing of general and specific threshold criteria should be used as the basis for a comprehensive discussion and uniform comparison of alternatives.

- Summary conclusion.

The significance determination should be briefly discussed here. If the project impacts significantly on the environment, then the discussion should also include the major environmental issues to be addressed in the EA or EIS, including the likely U.S. agencies to conduct the review.

3. Submission and Distribution of the IEE

The IEE will accompany the PRP or equivalent document through the usual document approval process.

In addition, those IEE's which recommend preparation of an EA will be circulated to appropriate U.S. Federal Agencies for comment, as outlined in the CEQ guidelines and amplified by AID Regulation 16.

A Brief Description of the Environment Affected

The Pathfinder Fund project directs itself toward conducting, assisting and promoting family planning programs in the less developed and developing countries of the world. For program administration, the developing world is divided into six geographic regions. This year's program will consist of projects and grants, as follows:

Geographic Region	Project	Grant
Latin America (North)	18	15
Latin America (South)	26	18
North Africa and the Middle East	5	8
Sub-Sahara Africa	17	20
South Asia	8	3
Far East	36	4
	110	68

Additionally, Pathfinder has 21 projects and grants in Europe and the United States designed and intended to support activities in the less developed countries.

Because Pathfinder exercises its activities throughout the world, the impact of its activities is on a type or class of country rather than on a specific country. The environment affected is basically a socioeconomic environment rather than the traditional natural environment. The common characteristics of the socioeconomic environment are:

- low levels of food availability
- high malnutrition
- poor sanitation, lack of clear water, prevalence of disease carriers
- high illiteracy
- high unemployment
- limited access to basic health and family planning
- high infant mortality
- high birth, death and fertility rates

Although these characteristics differ from host country to host country, they are, nevertheless, essentially common to all the countries.

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
GENERAL CRITERIA			
1. Are the effects of an action likely to be irreversible? Irreversible impacts relate not only to the use of non-renewable resources in the construction or implementation of a project, but also to the ongoing and induced impacts caused by the operation of the project. For example, infrastructure improvements such as rural electrification, sewer projects and dams set in motion urban and rural developments that are usually irreversible.	☐	☒	☐
2. Does the project involve a complex of actions with individually limited but cumulatively considerable effects? Individual projects which by design (for reasons of funding, sequencing, etc.) or by circumstance are actually parts of a larger program should be viewed in the context of their contribution to that program.	☒	☐	☐
3. Do the actions involve a limited investment, but set a precedent for future actions, or represent a decision in principle about future actions? Many projects become self-justifying by creating the need for additional projects. Certain pilot projects and limited programs fall into this category whereby their future application initiates a whole series of secondary impacts.	☐	☒	☐
4. Does the action curtail the range of beneficial uses of the human environment and its resources, or serve short-term goals to the disadvantage of long-term environmental goals? Some actions can usurp a portion of an ecosystem to the exclusion of other legitimate uses of that ecosystem. This sort of problem most frequently arises in the areas of land use and the aquatic environment, such as irrigation projects, forestation, reservoirs and urbanization.	☐	☒	☐
5. Is the action likely to be highly controversial? The controversiality of an action indicates that it is important to someone in the host country, to the international community or to the United States; and therefore a significant action.	☐	☒	☐
SPECIFIC CRITERIA			
The following specific criteria are intended to assist in the determination of the significance of an activity's impact on the human environment. It is not a complete catalogue and should not be viewed as the only environmental impacts which are to be considered.			
1. Water Resources			
Water resources can be described in terms of surface water and ground water. Surface waters refer to the waters found in streams, rivers, ponds, lakes, swamps, reservoirs, and other places where it can be seen. Ground water is defined as the water found in the pores of subsurface materials. The geologic formations in which ground water is contained are called aquifers. The distinction between ground water and surface water is not one of type but rather of where the water is found. Ground water often contributes a major portion of the flow of surface water. Likewise, surface waters often form a major recharge source for ground water. Water supplies may be obtained from either ground or surface waters. A project can endanger water supplies through construction of facilities, runoff, or overdrafting (rate of water withdrawal is greater than the rate at which it is replenished). A project can be endangered by flooding from both human-related and natural causes.			
An action should be considered a possible candidate for an EA or EIS when it:			
a) adds a new technological use to an aquatic environment such as withdrawal for potable water, discharge for sanitary sewerage, or introduction of a new fishing industry;	☐	☒	☐
b) introduces a technological system such as water diversion for irrigation systems, dams, etc., which would significantly interfere, either during installation or operation, with existing natural water systems;	☐	☒	☐
c) significantly reduces or increases the surface area of an aquatic environment;	☐	☒	☐
d) increases the amount of water in an aquatic environment to the extent that the number of annual floods is increased or the water surface level is increased during periods of flooding;	☐	☒	☐
e) brings about a measurable change in the volume or level of water within a natural aquatic environment, such as swamp drainage or filling in flood plains, or the water table as a result of water wells, etc.;	☐	☒	☐
f) involves the use, destruction, or creation of wetlands, coral areas, hot springs, tundra, or other environmentally sensitive areas.	☐	☒	☐
2. Water Quality			
Human activity impacts surface and ground water by many different mechanisms. Contaminated storm water runoff, sediment and the discharge of wastes are prime causes of surface water degradation; while septic tank seepage, leaky sewer lines, the improper disposal of cleaning agents, and contamination of recharge zones by all of the above are some of the causes of ground water pollution. In turn, water of poor quality, whether degraded by human or natural causes, impacts human activities by limiting the range of uses that a given water body may serve.			
An action should be considered as a possible candidate for an EA or EIS when it:			

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
a) erodes soil into a surface aquatic environment to the extent that the annual siltation rate or average turbidity in the aquatic environment will be measurably increased;	☐	☒	☐
b) measurably increases human or domesticated animal waste into surface aquatic environments (directly or indirectly) or ground water supplies;	☐	☒	☐
c) measurably changes the concentration of naturally occurring substances in surface aquatic environments or ground water supplies, such as salt water intrusion, or filling in of marshland from siltation;	☐	☒	☐
d) introduces an artificial or foreign substance into a surface aquatic environment system or ground water supply from point or non-point sources or will increase the existing concentration of any such substance;	☐	☒	☐
e) introduces an admixture of artificial or foreign substances into a wetland, hot spring, tundra, coral area or other environmentally sensitive area;	☐	☒	☐
f) changes the average ambient temperature of an aquatic environment.	☐	☒	☐
3. Ecology			
Biotic resources are the plants and animals of an area. Because of the rate at which biological resources are being lost or altered by land and water transformation, it is important to carefully assess the importance of these losses.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) affects a species identified as endangered, rare or depleted;	☐	☒	☐
b) usurps air space which would interfere with established bird migration routes, such as smoke stacks, transmission lines or air traffic patterns at airports;	☐	☒	☐
c) introduces a species to an environment or significantly increases or decreases the populuation of a species, such as introducing domestic livestock to natural range;	☐	☒	☐
d) reduces the available habitat utilized by an indigenous species;	☐	☒	☐
e) brings about an identifiable change in the genetic make-up of a plant or animal;	☐	☒	☐
f) destroys an indigenous plant population covering a large area, e.g., 50 acres;	☐	☒	☐
g) introduces, concentrates or increases the population density of a pathogenic micro-organism in an environment, such as bacteria from waste water treatment plants.	☐	☒	☐
h) creates or precipitates an identifiable change in the behavior patterns of species which could, over time, lead to a measurable change in the population density of the species (behavior patterns refer to the patterns of feeding, mating, and movement);	☐	☒	☐
i) establishes or expands an industry which uses a measurable portion of an area's animal or plant resources on an annual basis, such as lumbering operations, fishing, hides, etc.	☐	☒	☐
4. Land Use and Man-Made Facilities			
Land use and man-made facilities refer to the development of an area for human activities. Human activities impose a change on the natural environment. This change can be far-reaching in the case of human settlements, or limited in the case of subsistence agriculture. In the former case, substantial and sophisticated support systems are required to sustain the larger and more densely populated settlements. These support systems draw on the natural environment either for consumption (water, vegetation, raw materials) or as effluent receptors (water bodies, air, land).			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) changes the land use patterns of an area (type or intensity);	☐	☒	☐
b) introduces a technological use to a parcel of land which traditionally has been in a natural state;	☐	☒	☐
c) significantly increases the amount of waste materials generated in the affected region, area or political subdivision;	☐	☒	☐
d) requires the temporary storage of hazardous waste materials when their ultimate disposition is not known or is not an inherent part of the proposed action;	☐	☒	☐
e) introduces or tends to introduce humans to an environment on a permanent or continual basis which was previously unoccupied;	☐	☒	☐
f) brings about a significant change in the population density of a human settlement;	☐	☒	☐
g) reduces the amount of food, water, energy, shelter or other services available to a human settlement for a significant period;	☐	☒	☐

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
h) creates or expands the production of electrical power and/or associated delivery systems;	☐	☒	☐
i) develops or expands water purification, storage and/or delivery systems;	☐	☒	☐
j) creates or expands sewage treatment and/or the addition of an interceptor sewer;	☐	☒	☐
k) establishes a new transportation service or extends an existing ground transportation service.	☐	☒	☐
5. Cultural, Recreational and Legal			
The character of a community is often shaped by those buildings, sites, areas or districts which have special historic and cultural interest or significance. Such historic and cultural entities may have been the location of historic events of international, national, state, or local importance; associated with notable persons or groups; possessed distinctive architectural design, landscape treatment, or other artistic features; presented the pre-history of an area; or are just interesting as curiosities. These sites and structures have value, and are an important resource for a community in determining its historic and cultural heritage which, if lost, cannot be replaced.			
Host Government laws, regulations and standards relating to environmental issues are indicative of a sensitivity to those issues and should be considered in the environmental review process.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) destroys or alters any natural landmark, historic or archaeologic propery/site, or property having significant cultural or religious value, including those listed by the World Heritage Committee pursuant to Article XI of the "Convention Concerning the Protection of the World Cultural and Natural Heritage," of November 1972.	☐	☒	☐
b) is proximal to a park, wildlife refuge, preserve or other such recreational or natural area, whether or not the area is officially designated for such uses;	☐	☒	☐
c) contravenes, or significantly contributes to the contravention of Host Government laws, regulations, guidelines, etc., pertaining to air and water quality;	☐	☒	☐
d) contravenes Host Government laws, regulations, guidelines, master plans, etc., pertaining to land use (and use of water areas);	☐	☒	☐
e) contravenes, or significantly contributes to the contravention of Host Government regulations, guidelines, etc., pertaining to odors or noise.	☐	☒	☐
6. Natural Resources and Land Forms			
Natural resources and land forms are some of the most sensitive features of the natural environment - once displaced or used up, it is only with the greatest of difficulty, if at all, that they can be replaced. Typical natural resources and land forms are wetlands, prime agricultural land, coastal zones, minerals and ores, and forest lands.			
An action should be considered as a possible candidate for an EA or EIS when it.			
a) precipitates changes in a land form which would affect its stability;	☐	☒	☐
b) destroys sand dunes, natural levees and other barriers which protect lands from flooding, or proposes development in flood prone areas;	☐	☒	☐
c) decreases the amount of topsoil associated with a land area to the extent that plant species traditional to the general area could not be reintroduced to a significant portion of the area affected;	☐	☒	☐
d) significantly changes the concentration of ambient substances in the soil over a large area (say 100 acres), such as irrigation;	☐	☒	☐
e) mixes a foreign or artificial substance into the soil over a large area (say 100 acres), such as fertilizers;	☐	☒	☐
f) affects the accessibility of known or suspected natural resources to the extent that it increases or decreases the economic feasibility of their exploitation;	☐	☒	☐
g) significantly increases the amount of a mineral or a fossil fuel being mined, quarried or used annually within a country;	☐	☒	☐
h) perpetuates the generation of wastes in the form of materials which could reasonably be recycled but are not ("reasonably" being determined by available technology and volume).	☐	☒	☐
7. Air Quality, Meteorology and Noise			
Air quality is one of the principal considerations in assessing the consequences of an action on the human environment. The adverse effects of increased air borne contaminants are primarily related to human health, but also include vegetative damage, soiling and accelerated weathering of exposed materials.			

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
SPECIFIC CRITERIA			
A proposed project acts both as an air pollution source and as a receptor; that is, it can generate pollutants that contribute to existing levels, and the project area is subject to pollutant emissions from surrounding areas. Air pollution sources from typical AID projects include fuel combustion for heating, power plants, automotive traffic generated and induced by the project, and aerial spraying of chemicals.			
An action should be considered as a possible candidate for an EA or EIS when it:			
a) introduces one or more pollutants into an air shed;	☐	☒	☐
b) creates changes in the weather;	☐	☒	☐
c) creates sound levels which will affect human or faunal activities;	☐	☒	☐
d) causes or tends to cause a significant change in the albedo (reflectivity of the earth's surface) or the amount of heat exchanged between the earth and the atmosphere over a large area, such as the clearing of forest for field crops, or the inundation of land area by artificially created water bodies.	☐	☒	☐
8. Socioeconomics			
Some of the most significant impacts on the human environment are those that affect a community or area's social and economic patterns. The effects of change are particularly important in the less developed countries because many of these countries are in transition from a traditional society to one that is pre-industrial or industrial.			
An action should be considered as a positive candidate for an EA or EIS when it:			
a) displaces populations, or resettles rural populations;	☐	☒	☐
b) interrupts traditional community ways of life (nomadic, pastoral, agricultural) so that social patterns or life styles change;	☐	☒	☐
c) causes aboriginal communities to become more susceptible to acculturation;	☐	☒	☐
d) changes health conditions by the improvement of health delivery services, provision of clean water, construction of sanitary sewer facilities, improvement of air quality, etc.	☒	☐	☐
e) alters family patterns and values as a result of structural changes in transportation, agriculture, employment, etc.	☒	☐	☐
f) changes the demographic profile;	☒	☐	☐
g) measurably increases family income	☐	☒	☐
h) provides educational facilities or services to a broad geographic area.	☐	☒	☐
9. Other (list)			
_____	☐	☐	☐
_____			
_____	☐	☐	☐
_____			
_____	☐	☐	☐
_____			
_____	☐	☐	☐
_____			
_____	☐	☐	☐
_____			
_____	☐	☐	☐
_____			

THRESHOLD DECISION CRITERIA

NOTE:
CHECK BOXES WHERE APPLICABLE. ALL BOXES CHECKED "YES" SHALL BE BRIEFLY DISCUSSED IN THE BODY OF THE IEE

	ENVIRONMENTAL IMPACT		
	YES	NO	UNKNOWN
IMPACT ON THE GLOBAL ENVIRONMENT AND/OR THE U.S.			
When a proposed AID activity significantly affects the global and/or U.S. environment, then an EIS is to be prepared. In order to significantly affect the global or U.S. environment, the airborne or waterborne contaminant, effluent or other release of the proposed activity must directly or indirectly impact the high seas, global atmosphere, or the United States. The above General and Specific Criteria indicate whether a project's impacts are significant. If they are significant, then a second determination must be made as to whether the significance is of a global nature or whether the project impacts on the U.S.			
In making this determination with respect to pollutants and/or certain diseases, the following factors should be considered in an integrated manner:			
1. Magnitude Is the pollutant introduced or added to the environment in sufficient quantities or of such a nature as to have a measurable effect at locations well beyond the point or area of introduction, or is it introduced or added to the environment at many locations? Does it tend to be concentrated by its nature or by any mechanism within the environment (e.g., through the food chain)?	☐	☒	☐
2. Potency Is the pollutant of consequence in terms of its inherent deleterious qualities or intermediate or catalytic capabilities?	☐	☒	☐
3. Duration Is the pollutant of a short lived nature, or is it relatively long lived in the natural environment in terms of its biodegradability, half-life, etc.?	☐	☒	☐
4. Transport Mechanism Is the pollutant capable of being carried significant distances from the project site by wind, water, human or animal means?	☐	☒	☐
5. Effects Are the effects of the pollutant of an acute, readily identifiable nature or does the project contribute a pollutant which is less discernible from the background level thereby creating a more insidious or chronic condition?	☐	☒	☐
It is important that these criteria be examined and discussed in the IEE together and concurrently rather than separately in weighing the potential for global, extra-jurisdictional or U.S. consequences of a project.			

Discussion of Impacts

A. General Criteria

2. The Pathfinder project is one of a number of PHA programs directed towards improving the level of living in less developed countries through population and health programs. For FY 1976, approximately $200,000,000 was budgeted by AID for population planning and health. Grants funded to the Pathfinder project accounted for less than one percent of the total program.

B. Specific Criteria

8.d). The introduction of family planning services into areas without significant health planning services coupled with provision of commodities and support leadership programs should measurably improve health conditions.

Family planning is increasingly viewed in the developing world as an essential component of efforts to improve maternal and child health. Its acceptance may depend in good part on the comprehension that family planning services promote health. Even those with access to such services may not take full advantage of them due to a lack of understanding about their use and benefits, or to economic and cultural pressures to have large familieis.

Thus, although the Pathfinder program is designed to improve the quality of life in the less developed countries, and in fact does, because of the enormity of the problem, its effect in the human environment is limited, albeit important.

8.e). Much of the success of the program depends on altering family patterns and values. Specifically, cultural and religious attitudes towards large families, particularly strong in the less developed countries, will have to be changed in order to reduce the high fertility rate.

Moreover, it will take many years of persistent efforts to overcome these deeply ingrained values. There are no short-term solutions to these problems which affect the majority of people in the developing countries. Improvement to the human environment will be small and incremental.

8.f). Limited changes in the demographic profile should occur from successful implementation of the Pathfinder program including:

- decrease in family size
- increase in median age
- reduction in percent of family under 16 years of age

It should be noted, however, that this program cannot be isolated from other population and health programs which address other problems (health care, clean water, sanitation facilities) but which also support the change in the demographic profile.

Discussion of Alternatives

The Pathfinder project is one of many alternative approaches being funded by AID to improve health conditions through family planning services. The Pathfinder project is implemented by a PVO as are many of the PHA projects. The selection of projects is based in part in meshing long-range objectives with projects offered by PVO's to achieve these objectives. AID reviews many such PVO offerings and selects those which are (i) best designed to achieve AID objectives, and (ii) which seem to represent a comprehensive mix of projects addressing a broad front of problems.

A "no fund" alternative for the Pathfinder project in and of itself would not have a significant impact on AID's objectives relating to population and humanitarian assistance. The Pathfinder is a small, but valuable, increment to a large program designed to improve health conditions. Pathfinder does, however, have long experience in providing family planning services in LDC's and not funding this project would either reduce or eliminate an important tool in upgrading health conditions in LDC's.

Summary Conclusion

The impacts of this program in the human environment are limited because of the enormity of the problem being addressed compared with the project resources being brought to bear on the program.