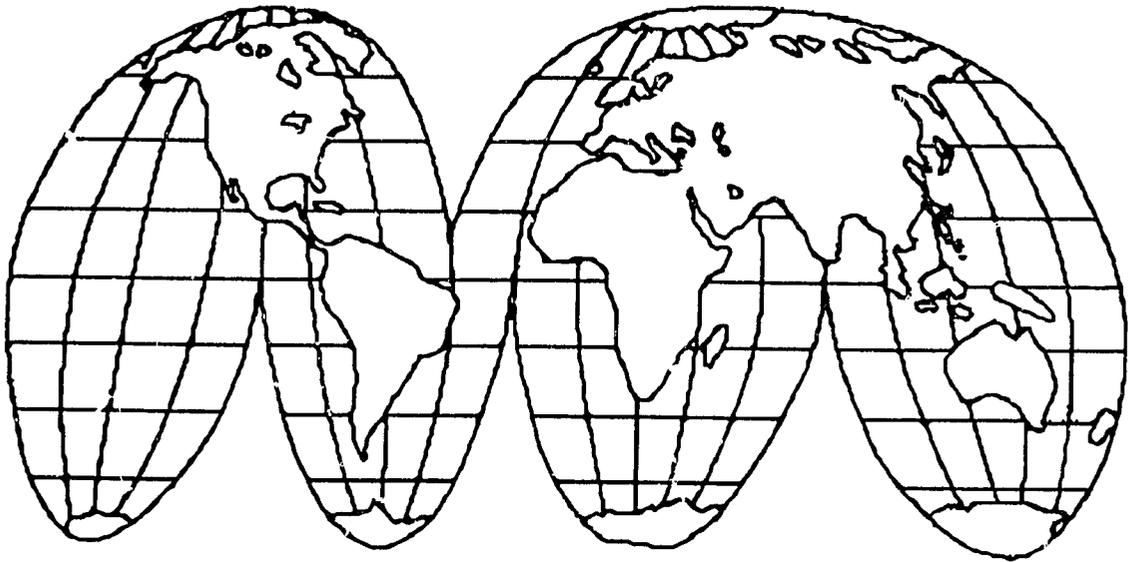


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HOW TO PREPARE ENVIRONMENTAL ASSESSMENTS OF PESTICIDE USE IN A.I.D. AGRICULTURAL PROJECTS



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**CONSORTIUM FOR
INTERNATIONAL
CROP
PROTECTION**



**INTEGRATED PEST MANAGEMENT
AND
ENVIRONMENTAL PROTECTION
PROJECT**

JANUARY 1991

The Consortium for International Crop Protection (CICP) was founded by a group of U.S. Universities to provide information and assistance in broad areas related to crop protection in developing nations. The major emphasis of all CICP activities is the ultimate implementation of crop protection practices that are environmentally sound and economically feasible. These guidelines are primarily designed to help in dealing with pesticides in agricultural systems, and to help avoid detrimental environmental impacts.

Consortium Member Institutions

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Cornell University
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University of Hawaii at Manoa
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University of Puerto Rico
Purdue University
Texas A & M University
U.S. Department of Agriculture

**HOW TO PREPARE ENVIRONMENTAL ASSESSMENTS
OF PESTICIDE USE IN A.I.D. PROJECTS**

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FOREWORD AND ACKNOWLEDGEMENTS

To meet its objectives in developing country projects, the U.S. Agency for International Development (A.I.D.) has to deal with a range of insects, diseases, weeds, rodents, and other harmful pests. Pesticides are often used to control these organisms.

Use of pesticides in developing countries requires special understanding and responsibilities. Some developing countries have no laws to govern the importation, domestic use, and disposal of pesticides. Countries with laws often lack the resources to enforce proper use.

Since 1978, A.I.D. has required an "Environmental Assessment" (EA) of pesticides for use in its projects. The purpose of an EA is to alert A.I.D. officials and host country decision makers of potential risks and to avert use of unacceptable pesticides. The EA identifies less hazardous pesticides and nonchemical alternatives, and specifies safety measures, training, and research so that pesticides will be used properly as a component of integrated pest management (IPM).

A.I.D. has depended heavily on the Consortium for International Crop Protection (CICP) in preparing the Environmental Assessments. CICP in fact has developed more A.I.D. Assessments of pesticides than any other organization. CICP staff and consultants, representing a diverse range of expertise in pest and pesticide management and related fields, have assisted nearly every A.I.D. mission and overseas office with EAs. In addition, CICP personnel have helped with follow-up training, research, and monitoring.

This guide was developed to help CICP consultants, A.I.D. staff, and A.I.D. contractors conduct accurate and complete Assessments of pesticides. It is based on the experience of many who have participated (through CICP) in developing EAs.

The assistance and experience of CICP consultants, developing country collaborators, and A.I.D. employees and contractors were invaluable in preparing the guide. We especially acknowledge the efforts of the late Dr. Frederick W. Whittemore and Mr. Carroll W. Collier (retired), both formerly of the A.I.D. Bureau of Science and Technology, Office of Agriculture. Dr. Whittemore and Mr. Collier directed and assisted the CICP staff and CICP consultants in developing dozens of EAs. We also acknowledge the following colleagues for reviewing and commenting on a draft of the guide: Mr. Bill Barclay (Greenpeace), Dr. Carl S. Barfield (University of Florida), Dr. Hiram Larew (A.I.D. Bureau of Science and Technology), Dr. Angel A. Chiri (A.I.D. Bureau for Latin America and the Caribbean), and Dr. William A. Overholt (A.I.D. Bureau of Science and Technology). We are grateful for their guidance and assistance.

We also are grateful for the very special and untiring efforts of CICP's founder and former Executive Director, Dr. Ray F. Smith. As Executive Director of CICP, Dr. Smith was the principal architect of A.I.D. efforts that emphasized environmentally less hazardous and economically efficient pest and pesticide management.

CONTENTS

	Page
FOREWORD AND ACKNOWLEDGEMENTS	ii
CONTENTS	iii
ACRONYMS AND ABBREVIATIONS	v
INTRODUCTION	1
WHAT IS AN ENVIRONMENTAL ASSESSMENT?	1
<u>Steps Leading to an Environmental Assessment</u>	2
WHAT IS MEANT BY "PESTICIDE"?	2
WHAT IS NEEDED TO CONDUCT AN ASSESSMENT?	4
<u>A.I.D. Documents</u>	4
<u>Technical References</u>	5
<u>Documents on Local Laws and Regulations</u>	6
<u>Other Sources</u>	7
<u>Always Consult the Pesticide Label</u>	7
GENERAL PROCEDURES	8
<u>Briefing in Washington, DC</u>	8
<u>Upon Arrival in Host Country</u>	8
<u>The Environmental Assessment's Content and Form</u>	8
<u>Before Departing Host Country</u>	10
<u>Debriefing in Washington, DC</u>	10
STEP-BY-STEP PROCEDURES	10
<u>Writing Style</u>	10
<u>Pesticide Procedures</u>	11
a. <u>The EPA Registration Status of the Requested Pesticide(s)</u>	11
<u>EPA Registration Status</u>	11
<u>Tolerance Requirements</u>	12
<u>EPA Special Review Program</u>	13
<u>Format</u>	14
b. <u>The Basis for Selection of the Requested Pesticide(s)</u>	14
c. <u>The Extent to Which the Proposed Pesticide Use Is Part of an Integrated Pest Management Program</u>	14
<u>Guidelines for IPM Programs</u>	16
d. <u>The Proposed Method or Methods of Pesticide Application, Including Availability of Appropriate Application and Safety Equipment</u>	16

e.	<u>Any Acute and Long-Term Toxicological Hazards, Either Human or Environmental, Associated With the Proposed Pesticide Use and Measures Available to Minimize Such Hazards</u>	17
	<u>Acute Toxicological Hazards</u>	17
	<u>Long-Term Toxicological Hazards</u>	19
f.	<u>The Effectiveness of the Requested Pesticide(s) for the Proposed Use</u>	20
	<u>What to Report on Effectiveness</u>	20
g.	<u>Compatibility of the Proposed Pesticide(s) With Target and Nontarget Ecosystems</u>	21
	<u>Special Requirements to Preserve Endangered Species and Biodiversity</u>	24
h.	<u>The Conditions Under Which the Pesticide Is to Be Used, Including Climate, Flora, Fauna, Geography, Hydrology, and Soils</u>	24
i.	<u>The Availability and Effectiveness of Other Pesticides or Nonchemical Control Methods</u>	24
j.	<u>The Requesting Country's Ability to Regulate or Control the Distribution, Storage, Use, and Disposal of the Required Pesticide(s)</u>	24
k.	<u>The Provisions Made for Training of Users and Applicators</u>	25
l.	<u>The Provisions Made for Monitoring the Use and Effectiveness of the Pesticide(s)</u>	25
	HOW TO SUMMARIZE THE MITIGATIVE MEASURES AND REQUIREMENTS	26
	GLOSSARY OF TERMS COMMONLY ENCOUNTERED IN ENVIRONMENTAL ASSESSMENTS	28
	ANNEX 1: 22 CFR PART 216, ENVIRONMENTAL PROCEDURES	39

ACRONYMS AND ABBREVIATIONS

ADI	-	Acceptable Daily Intake
A.I.D.	-	U.S. Agency for International Development
CFR	-	Code of Federal Regulations
CICP	-	Consortium for International Crop Protection
EA	-	Environmental Assessment
EIS	-	Environmental Impact Statement
EPA	-	U.S. Environmental Protection Agency
FAO	-	Food and Agriculture Organization of the United Nations
FDA	-	U.S. Food and Drug Administration
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IEE	-	Initial Environmental Examination
IPM	-	Integrated Pest Management
MRL	-	Maximum Residue Limit
U.S.	-	United States of America
WHO	-	World Health Organization of the United Nations

INTRODUCTION

The introduction after World War II of synthetic organic pesticides such as the insecticide DDT and the herbicide 2,4-D began a new era in pest control. Hundreds of synthetic organic insecticides, herbicides, fungicides, nematicides, rodenticides, and other chemical pesticides entered commercial markets.

The availability of modern pesticides led to widespread acceptance and reliance upon them. Chemical control soon became the predominant method of pest control in many countries. Current trends indicate that the use of pesticides in developing countries is increasing more rapidly than in developed countries. Pesticide use in Africa, Asia, and Latin America could double over the next ten years if trends continue.

Most pesticides being used in developing countries originate in industrialized nations. About 30% of total U.S. pesticide production is exported. The exports include pesticides not registered for any use, or considered too dangerous for unrestricted use, in the U.S.

Chemical pesticides have spread much faster in developing countries than the capability to ensure their effective and proper use. Many of these countries do not have laws to govern importation, use, and disposal of toxic chemicals. Even if they have laws, governments frequently lack the means to enforce them.

The U.S. Agency for International Development (A.I.D.) now requires a risk-benefit evaluation of pesticides and pest control practices used in the Agency's overseas assistance projects. A.I.D. policy is to encourage use of nonchemical pest control methods and practices that reduce reliance on chemical control. When pesticides are used, it is A.I.D. general policy to avoid using pesticide chemicals that the U.S. Environmental Protection Agency (EPA) has not registered or has registered with restriction because their toxicity warrants special handling. A.I.D. approves use of pesticides only if a review indicates a favorable benefit-risk ratio.

The purpose of this guide is to assist consultants of the Consortium for International Crop Protection (CICP), A.I.D. staff, and A.I.D. contractors when developing Environmental Assessments of pesticides in A.I.D. projects. The guide tells what is needed and how to proceed when conducting the Assessments. It will help to minimize time spent on the Assessments and avoid errors and omissions that can delay A.I.D. decision making.

WHAT IS AN ENVIRONMENTAL ASSESSMENT?

In the A.I.D. system, an Environmental Assessment is "a detailed study of the reasonably foreseeable significant effects, both beneficial and adverse, of a proposed action on the environment of a foreign country or countries."¹ The purpose of the EA is to alert A.I.D. and host country decision makers of the

¹International Development Cooperation Agency, Agency for International Development, 22 CFR Part 216, Environmental Procedures, §216.1(c)(3), October 9, 1980.

potential for significant environmental effects in A.I.D. projects and outline steps for avoiding or minimizing adverse effects. Procedures for the EA appear in Title 22 of the Code of Federal Regulations, Part 216 (abbreviated as 22 CFR Part 216), known as Environmental Procedures, which appears as Annex 1.

Steps Leading to an Environmental Assessment

Need for an EA is determined as the A.I.D. project is developed (see Figure 1). The A.I.D. project document (Project Identification Document or Project Paper) includes an Initial Environmental Examination (IEE), which precedes the EA. The IEE is the first review of the foreseeable effects of a proposed action (e.g., use of pesticides) on the environment. Its function is to provide A.I.D. officials the basis for reaching a "Threshold Decision". A Positive Threshold Decision indicates that the proposed action may have a significant effect on the environment. A Negative Declaration indicates that the proposed action should not have a significant impact on the environment. A Positive Threshold Decision requires preparation of an EA or, rarely, Environmental Impact Statement (EIS). An EIS is similar to an EA except it requires a more rigorous review (by both U.S. and host country agencies) and usually public hearings on the proposed action.

The EAs may cover a range of proposed environmental actions, such as road building, etc. Some of the EAs are devoted entirely to pesticide use. This guide considers assessment of pesticides.

WHAT IS MEANT BY "PESTICIDE"?

"Pesticide," from the words "pest" and "cide" (a Latin derivative meaning killer), is a chemical agent that kills or in some other way diminishes the actions of pests. Pests include harmful insects and other invertebrate organisms, weeds, microorganisms, rodents, and birds.

Pesticides are classified according to their function -- insecticide to control insects, fungicide to control fungi, etc. The principal types of pesticides appear in Table 1.

In A.I.D. livestock production projects, it is important to distinguish pesticides used to control parasites that harm animals or cause disease from drugs used to combat disease directly. Drugs come under the jurisdiction of the U.S. Food and Drug Administration (FDA) and are handled differently. If in doubt about the status of a livestock chemical, contact EPA's Registration Division, Insecticides and Rodenticides, Washington, DC 20460 (telephone: 703-557-2400).

Sometimes a pesticide may appear to be the only method for controlling a pest. However, by assessing the situation it is often possible to find cheaper, longer lasting, and less hazardous methods. Integration of effective nonchemical control methods (Table 2) within an ecological framework may reduce or even eliminate the need for chemical pesticides.

Figure 1. Steps Leading to the Decision for an Environmental Assessment in A.I.D. Projects Per Title 22 of the Code of Federal Regulations, Part 216, Environmental Procedures

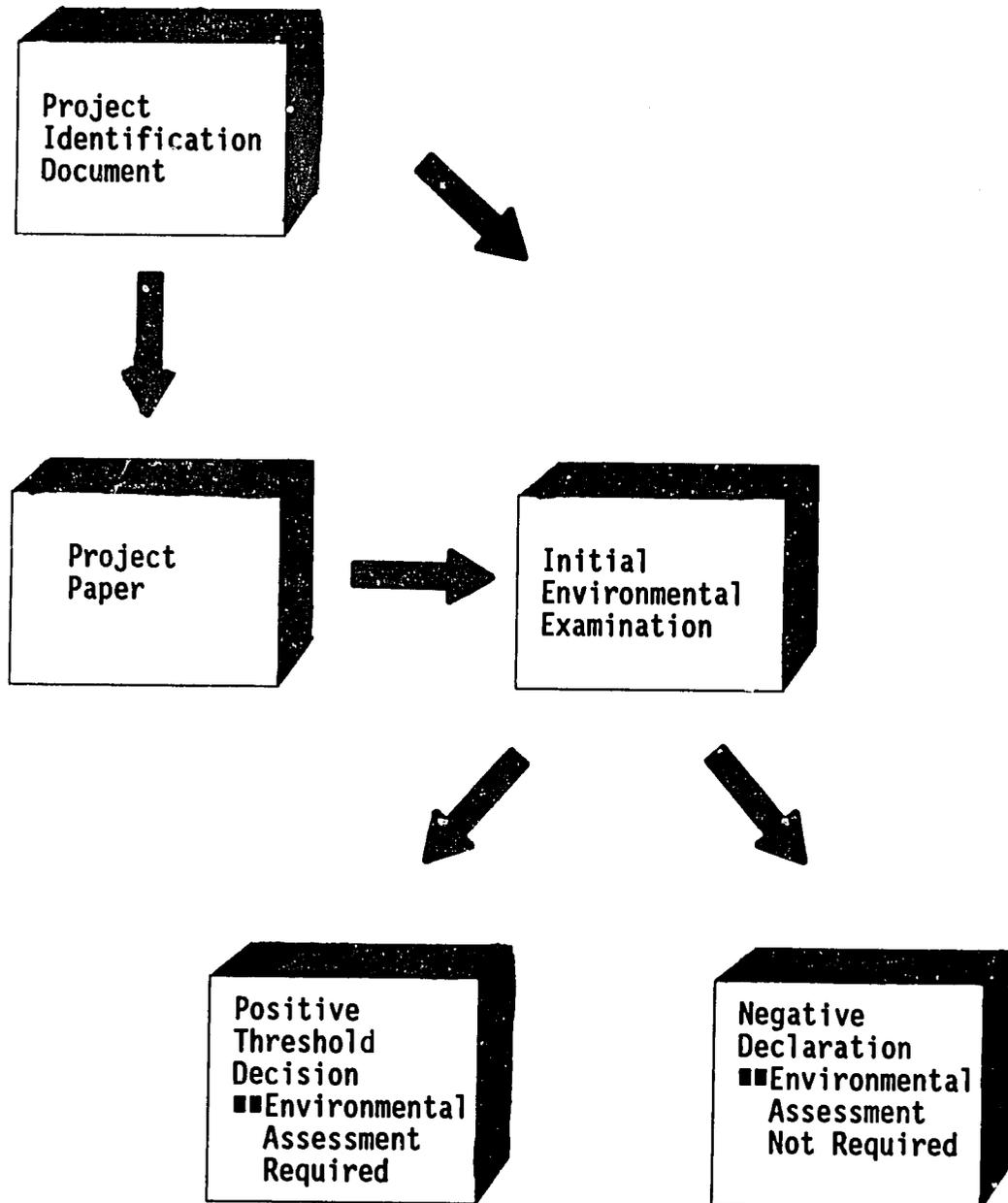


Table 1. Pesticides Classified According to Function

Pesticide	Pest group controlled or function of the pesticide
Acaricide	Mites, ticks, and spiders
Algicide	Algae
Attractant	Attracts pests (pheromones, baits, and miscellaneous chemicals)
Avicide	Birds
Bactericide	Bacteria
Defoliant	Removes plant foliage
Desiccant	Removes water from plants and arthropod pests
Fungicide	Fungi
Growth regulator	Regulates plant or animal growth
Herbicide	Weeds
Insecticide	Insects, mites, and related arthropods
Miticide	Mites
Molluscicide	Mollusks such as snails and slugs
Nematicide	Nematodes
Piscicide	Fish
Predacide	Vertebrate pests
Repellent	Repels animals
Rodenticide	Rodents
Silvicide	Trees and woody shrubs

WHAT IS NEEDED TO CONDUCT AN ASSESSMENT?

Conducting an Environmental Assessment of pesticide use requires access to a range of information appearing below. A check (✓) appears by each of the essential documents.

A.I.D. Documents

- ✓ ■ A.I.D. Environmental Procedures (22 CFR Part 216) (Source: A.I.D. Handbook No. 3, Appendix 2D). The Environmental Procedures appear in Annex 1 of this guide.
- ✓ ■ The Project Identification Document, Project Paper, or other A.I.D. documents (Program Assistance Initial Proposal or Program Assistance Approval Document) that describe the proposed action (Source: A.I.D. Project Officer).
- ✓ ■ The Initial Environmental Examination, if any (Source: A.I.D. Project Officer).
- ✓ ■ Any earlier Environmental Assessments of the A.I.D. project (Source: A.I.D. Project Officer).

Table 2. Examples of Alternatives to Chemical Pesticides

Insects, mites, and other invertebrates	Plant diseases	Weeds	Vertebrate pests
<u>Biological control</u> Conservation, augmentation, inoculation, and habitat manipulation with parasites, predators, and pathogens <u>Plant resistance</u> <u>Environmental manipulations</u> Plant spacing Intercropping Timing of planting and harvesting Crop rotation Water management Fertilizer management Soil preparation Sanitation Trap crops <u>Induced sexual sterility</u> <u>Physical and mechanical control</u> Screens Traps Fly swatters Protective packaging Barriers Flaming and burning Hand picking <u>Attraction and repellency</u> Attractants Repellents <u>Genetic manipulation of pest populations</u> Lethal genes Male-producing genes <u>Botanical insecticides</u>	<u>Disease resistance in host plants</u> <u>Reduction of losses by manipulations of plants and pathogens</u> <u>Control of plant pathogens by antagonists, hyperparasites, and natural enemies</u> <u>Disease- and nematode-free seed and propagating material</u> <u>Crop rotation and soil management</u> <u>Vector control</u> <u>Nematode attractants and repellents</u> <u>Sanitation</u> Destruction of inoculum Roguing Intercropping Destruction of alternate hosts	<u>Biological control</u> Insects and other herbivores Diseases <u>Environmental manipulation</u> Choice of variety Seedbed preparation Method of seeding or planting Seeding rates and row spacing Fertilizer management Cultivation Irrigation and water management Erosion control Design of irrigation and drainage canals and ponds Managed grazing Sanitation Flaming and burning <u>Natural stimulants and inhibitors</u> <u>Plant competition</u> <u>Revegetation of weed- and brush-infested grazing lands</u> <u>Breeding highly competitive forage species</u> <u>Oversowing</u> <u>Green manures and cover crops</u> <u>Crop rotations</u>	<u>Noise and physical repellents</u> <u>Chemical repellents</u> <u>Trapping and shooting</u> <u>Behavior</u> <u>Environmental manipulation</u> <u>Exclusion</u> <u>Visual repellents</u>

Source: Modified from President's Science Advisory Committee. 1965. Restoring the quality of our environment. The White House. U.S. Government Printing Office, Washington, DC

- ✓ ■ A.I.D.'s Endangered Species Act (Section 119 of the Foreign Assistance Act) (Source: A.I.D. Project Officer).

Technical References

- ✓ ■ Local and international publications on pests, pesticides, alternative methods of control, and integrated pest management (Source: Libraries, universities, and host country ministries).
- ✓ ■ Pesticide labels, container wrappers, or supplemental literature accompanying the proposed pesticides (Source: Pesticide manufacturers and dealers).

- √ ■ Current Pesticide Chemical News Guide (updated periodically) (Source: Louis Rothschild, Jr., 1101 Pennsylvania Avenue, S.E., Washington, DC 20003, telephone: 202-544-1980).
- √ ■ Title 40, Part 180 (pesticide tolerances for raw agricultural commodities) and Title 21, Part 193 (pesticide tolerances for processed foods) of the Code of Federal Regulations (updated periodically) (Source: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9371).
- √ ■ Guide to Codex Maximum Limits for Pesticide Residues (updated periodically) (Source: Joint FAO/WHO Food Standards Programme, Codex Alimentarius Commission, Pesticide Residues, The Netherlands).
- √ ■ Suspended, Cancelled, and Restricted Pesticides (updated periodically) (Source: Office of Pesticides and Toxic Substances, Office of Compliance Monitoring (EN-342), U.S. Environmental Protection Agency, Washington, DC 20460, telephone: 202-382-3807).
- √ ■ Current Report on the Status of Chemicals in the Special Review Program and Registration Standards in the Reregistration Program (updated periodically) (Source: Public Information Branch, Field Operations Division, Office of Pesticide Programs [H7506C], U.S. Environmental Protection Agency, Washington, DC 20460, telephone: 703-557-2805).
- √ ■ Recent publications and maps that describe the natural environment where the proposed pesticides are to be used. A.I.D.'s environmental profiles of various developing countries are excellent references (Source: A.I.D. or host country).
- √ ■ EPA Crop Groupings [40 CFR 180.34(f)(9)] (Source: Distribution [PM 215], U.S. Environmental Protection Agency, Washington, DC 20460, telephone: 202-382-2118).
 - Current Farm Chemicals Handbook (updated annually) (Source: 37841 Euclid Ave., Willoughby, Ohio 44094, telephone: 216-942-2000, telex: 212556 MPCO, fax: 216-942-0662).
 - Crop Protection Chemicals Reference (updated annually) (Source: MSDS Reference for Crop Protection Chemicals, c/o John Wiley & Sons, Inc., 605 Third Avenue, New York, New York 10157-0228).
 - Recognition and Management of Pesticide Poisonings; 4th edition, March 1989 (Source: Public Information Branch, Field Operations Division, Office of Pesticide Programs [H7506C], U.S. Environmental Protection Agency, Washington, DC 20460, telephone: 703-557-2805).

Documents on Local Laws and Regulations

- √ ■ Laws and regulations governing pesticide use in the host country (Source: Host country ministry of agriculture, ministry of natural

resources, or other ministry or office responsible for the laws and regulations).

- √ ■ Laws and regulations on environmental protection, endangered species, or related environmental matters (Source: Host country ministry of natural resources or other ministry or office responsible for the laws and regulations).
- Lists of pesticides (by products) approved for use in country and (if available) quantities of pesticides imported to or produced in country for most recent year available (Source: Host country ministry of agriculture or other ministry or office responsible for compiling information on pesticides).

Other Sources

In addition, the following are useful and may be required to complete the assessment:

- Scientific publications on the impacts of pesticides on human health, environment, and socioeconomic factors (Source: Libraries).
- Residues in Foods (updated annually) (Source: U.S. Food & Drug Administration, Pesticide Program, 5600 Fishers Lane, Rockville, Maryland 20857, telephone: 301-443-1815).
- Health data on pesticide poisoning in country (Source: Host country ministry of health or other ministry or office responsible for health).
- PEST-BANK and CHEM-BANK databanks on CD-ROM (updated quarterly) (Source: SilverPlatter Information, Inc., One Newton Executive Park, Newton Lower Falls, Massachusetts 02162-1449, telephone: 800-343-0064, fax: 617-969-5554).

PEST-BANK and CHEM-BANK provide current information on pesticides registered by EPA. PEST-BANK provides information on residue tolerances for all EPA registered pesticides and is a good way to determine which pesticides are in EPA's restricted use category. CHEM-BANK provides toxicological data (human health and environmental effects) for some of the EPA-registered pesticides. The databanks are on CD-ROM disks accessed by computer.

Always Consult the Pesticide Label

The label includes all information printed on or attached to the pesticide container. The importance of the label cannot be stressed too often. If it is read and understood and all the directions are followed, the likelihood of misusing the material or of having an accident is greatly reduced. Unfortunately, many pesticides in developing countries are sold without labels, the labels are in a foreign language, or the labels are too difficult for applicators to understand. These problems are at the root of much of the pesticide misuse in developing countries.

Preparers of EAs must carefully assess all available label information. They must read and understand all directions on the label when developing the EA. They must determine if labels are understandable to farmers and other users.

A label for a pesticide registered by EPA includes the following information (see Glossary, page 28, for definition of terms):

- Brand name.
- Chemical name.
- Common name.
- Formulation.
- Ingredients.
- Contents.
- Manufacturer.
- Registration and establishment numbers.
- Signal word.
- Precautionary statements.
- Statement of practical treatment.
- Statement of use classification.
- Directions for use.
- Misuse statement.
- Reentry statement.
- Storage and disposal directions.
- Warranty.

GENERAL PROCEDURES

Briefing in Washington, DC

A briefing in Washington, DC is usually essential before beginning the EA. The briefing may be required to acquire critical A.I.D. documents. It is an opportunity to meet A.I.D. environmental officers, pest management advisors, and others who may be reviewing the EA. They will have made preliminary arrangements for the host country visit and usually can suggest useful contacts there.

Upon Arrival in Host Country

Upon arrival in the host country, contact the designated A.I.D. representative for briefing and instructions. The A.I.D. representative usually will identify host country counterparts or other collaborators. Give governmental and nongovernmental host country representatives ample opportunity to participate in developing the EA.

The Environmental Assessment's Content and Form

The Environmental Assessment should include the following:

1. Cover page: The cover shows the name of the A.I.D. project, mission, and country; name, professional discipline, and affiliation of each person responsible for conducting the EA; name and address of the contractor in charge of the EA; and date.

2. Summary: The summary presents the major conclusions, areas of controversy, if any, and the issues to be resolved.
3. Introduction: This section describes why the Environmental Assessment was developed. The Initial Environmental Examination in the A.I.D. Project Identification Document or Project Paper describes why a positive Threshold Decision was reached and the EA is needed.
4. Pesticide Procedures: This section addresses the following factors, a. to l., in accordance with 22 C.R. 216, §216.3(b)(1):
 - a. The EPA registration status of the requested pesticide(s).
 - b. The basis for selection of the requested pesticide(s).
 - c. The extent to which the proposed pesticide use is part of an integrated pest management program.
 - d. The proposed method or methods of pesticide application, including availability of appropriate application and safety equipment.
 - e. Any acute and long-term toxicological hazards, either human or environmental, associated with the proposed pesticide use and measures available to minimize such hazards.
 - f. The effectiveness of the requested pesticide(s) for the proposed use.
 - g. Compatibility of the proposed pesticide(s) with target and nontarget ecosystems.
 - h. The conditions under which the pesticide is to be used, including climate, flora, fauna, geography, hydrology, and soils.
 - i. The availability and effectiveness of other pesticides or nonchemical control methods.
 - j. The requesting country's ability to regulate or control the distribution, storage, use, and disposal of the requested pesticide(s).
 - k. The provisions made for training of users and applicators.
 - l. The provision made for monitoring the use and effectiveness of the pesticide(s).
5. Summary of mitigative measures and requirements: This section summarizes measures to reduce negative environmental impacts and may include a budget of costs to implement the measures. Practical needs (training, research directed at finding nonchemical alternatives, safety equipment, storage facilities, pesticide enforcement procedures, new publications, etc.) should be emphasized.

6. References cited: This section should list citations of technical articles and other documents used as sources for all significant assertions and scientific data presented.
7. Collaborators and Persons Contacted: This section should list the names, disciplines, affiliations, and contributions of host country representatives, A.I.D. staff, EPA staff, and any others who provided information or were contacted about the EA.
8. Recommended Distribution: This section should identify the names and addresses of key host country representatives and A.I.D. contractors who should receive the approved Environmental Assessment. The list of persons to receive the EA should be compiled in consultation with designated A.I.D. personnel.
9. Annexes: If host country pesticide laws and regulations exist, they should be presented as annexes. Annexes should also include copies of labels of the proposed pesticides and a list of pesticides approved for use in country, if available.

Before Departing Host Country

The last step before departing the host country is to debrief designated A.I.D. personnel in the overseas mission. If the Environmental Assessment is not completed, inform them when it will be available. Also, determine if they expect any follow-up assistance in revising the EA, etc.

Debriefing in Washington, DC

A debriefing at A.I.D. in Washington, DC may be necessary or helpful.

STEP-BY-STEP PROCEDURES

Writing Style

When writing an EA:

- Clearly define words or terms that a lay person may not understand.
- Explain the dual naming systems used for both living things (Latin name and common name) and pesticides (common and trade names) and be consistent in use of names.
- Give a reference for all significant assertions and scientific data presented. The EA should have a list of references cited.
- Beware of making unfounded or possibly mistaken assertions.
- Do not use sexist language. When referring to farmers, for instance, use "they" instead of "he" or "she."

Pesticide Procedures

The Pesticide Procedures section (see page 9) of the Environmental Assessment should take the following form:

a. The EPA Registration Status of the Requested Pesticide(s).

This section should indicate for each proposed pesticide: (1) if EPA has registered the pesticide for the proposed use(s), (2) the EPA classification category, and (3) if EPA is presently reviewing the pesticide because of suspected problems. Copies of sample labels of the pesticides, obtained in the country of proposed use, should be attached as an annex of the EA.

EPA Registration Status

EPA is responsible under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for registering pesticides. FIFRA requires EPA to take into account economic, social, and environmental costs and benefits in making decisions. EPA may classify a product for "restricted use" if its toxicity warrants special handling. Use of one formulation of a pesticide may not be restricted but another formulation may be. EPA registers a pesticide according to its formulation and intended use.

In the U.S., only pesticide applicators who have been certified by law can purchase restricted pesticides. The restricted materials have a high potential for causing harm to humans and/or environment. They are too hazardous for general use in A.I.D. projects, but in exceptional circumstances they may be approved if their use is determined essential and the project includes a training component to minimize hazards.

The EPA registration status of all proposed pesticides must be determined, using one of the following sources:

- Pesticide labels. The labels of pesticides sold in the U.S. include the EPA registration number and indicate all uses for which registered. Foreign labels of the same pesticide chemicals may, but usually do not, include information on EPA registration.
- PEST-BANK. PEST-BANK (updated every 3 months) will provide all information needed on registration.
- Pesticide Chemical News Guide. This Guide (updated periodically) lists EPA tolerances (or exception from tolerances) for pesticides on specific crops. Inclusion of an EPA tolerance in the Guide indicates that the pesticide has been registered for that specific crop use.
- Crop Protection Chemicals Reference. This publication compiles information appearing on labels of EPA-registered pesticides. However, it does not include information for many EPA-registered pesticides and is only published once per year.

- Suspended, Cancelled, and Restricted Pesticides. This EPA publication lists those pesticides that EPA has suspended, cancelled, or restricted. The publication's limitation is that it is updated infrequently.
- EPA's Office of Pesticide Programs, Registration Division (telephone: 703-557-7700).

A.I.D. policy is to use unclassified (general use) pesticide chemicals that EPA has registered for the same or similar uses in the U.S. "Similar" refers to crops in related botanical categories (e.g., tuber crops). EPA Crop Groupings [40 CFR 180.34(f)(9)] provides guidelines on crop groupings.

Pesticides not registered by EPA or registered in EPA's restricted use category may be considered for approval on human and animal food crops in A.I.D. projects if the following provisions are met:

- For restricted use pesticides, there must be a training component in the project to assure proper use.
- For pesticide chemicals without EPA tolerances, the chemicals must have an acceptable daily intake (ADI) and maximum residue limit (MRL) established by the FAO/WHO Codex Alimentarius Commission for the crop(s) in question and use patterns must assure that those tolerances will not be exceeded (see discussion under Tolerance Requirements).
- For all pesticides, the chemicals must not have been cancelled, withdrawn, or suspended in the U.S. because of health or environmental concerns.

However, in these cases approval will depend on current information about the chemicals in question and whether they can be used properly under the particular circumstances.

Tolerance Requirements

The tolerance of a pesticide is the minute trace permitted to remain in or on raw agricultural commodities or processed foods. Some pesticides are sufficiently low in hazard to be exempt from tolerance requirements. Tolerances are set by EPA for each individual crop or food type. Some pesticides have no tolerances because EPA has not established them yet.

The following sources indicate if EPA has established tolerances for specific pesticides on specific crops or other commodities:

- The labels of EPA registered pesticides.
- Title 40, Part 180 (raw agricultural commodities) and Title 21, Part 193 (processed foods) of the Code of Federal Regulations.
- Pesticide Chemical News Guide.
- PEST-BANK.

Tolerances are assigned by crop. EPA has established crop groupings that link major crops with minor crops (including many tropical crops) having similar growth and consumption patterns. A tolerance that applies to one crop in a group can be extended to the others. The crop groupings are given in 40 CFR 180.34(f)(9).

The Food and Drug Administration is mandated by law to monitor foods imported into the United States. One objective of the monitoring is to insure that EPA tolerances for pesticide residues are not exceeded and that residues of pesticides not registered by EPA for use on a particular product are not present. It is therefore important that only EPA-registered products are used on crops for export to the U.S. and that the rates and frequency of application, together with the prescribed harvest intervals, do not result in residues exceeding such tolerances.

The FAO/WHO publication, Guide to Codex Maximum Limits for Pesticide Residues, recommends tolerances for specific pesticides on specific crops. The Guide includes tolerances for pesticides on crops for which EPA tolerances do not exist. Pesticides with FAO/WHO-recommended tolerances may be used in A.I.D. projects, but treated crops should not be exported to the U.S. unless the FAO/WHO tolerances have been approved by EPA. EPA's Office of International Activities, telephone: 202-382-4870, should be contacted if there is a question about EPA approval of FAO/WHO-recommended tolerances.

EPA Special Review Program

EPA's Special Review program (formerly called Rebuttable Presumption Against Registration) studies pesticides to determine if their use presents unacceptable risks. The criteria for initiating a Special Review of pesticide uses include:

- Potential acute toxicity to humans or domestic animals.
- Potential adverse chronic effects in humans.
- Hazards to nontarget organisms.
- Separate criteria for hazards to threatened or endangered species.
- Other adverse effects that would permit EPA to initiate a Special Review in circumstances where potential risks may not be anticipated by specific criteria.

The Special Review study may take several years. At the end of the study, EPA may decide to cancel (ban) the pesticide or restrict its use, or may take no action if the Special Review fails to confirm substantial risks. The use in A.I.D. projects of pesticides under Special Review should be avoided if acceptable alternatives are available. They may be harmful, and if they are canceled or restricted during the life of a project, alternatives will have to be found and substituted quickly.

The following EPA publication lists the pesticides in the Special Review program and why the pesticides are being reviewed:

- Report on the Status of Chemicals in the Special Review Program and Registration Standards in the Reregistration Program (updated periodically).

EPA's Office of Pesticide Programs, Registration Division (telephone: 703-557-7700) should be contacted about questions concerning the Special Review status of a pesticide or recent changes in its registration.

The EA should indicate if any of the proposed pesticides are in the Special Review program and why EPA has put them in Special Review, as indicated in the EPA publication above. The EPA rationale for the review may include one or more of, but not necessarily be limited to, the factors in Table 3 (see Glossary, page 28, for unfamiliar terms).

Format

Much of the data for section a. of the Pesticide Procedures can be summarized in a table such as Table 4. If EPA has not established tolerances for a pesticide on a crop but FAO/WHO has established ADI/MRL levels, indicate so in a table footnote.

b. The Basis for Selection of the Requested Pesticide(s).

This section should briefly explain what criteria were used to select the proposed pesticide(s), for example:

- Because of local availability, effectiveness, and past experience.
- Because small plot experiments showed the pesticide(s) to be promising.
- Because there are no known chemical or nonchemical alternatives.
- Because of low mammalian toxicity.

c. The Extent to Which the Proposed Pesticide Use Is Part of an Integrated Pest Management Program.

A.I.D. policy is to promote integrated pest management to the extent possible. Pesticides normally will be approved only if the EA shows that the proposed pesticide use will be in accordance with IPM principles.

IPM is a pest control system that uses the "best mix" of two or more control methods based on criteria of crop yield, profit, and safety. Pesticides are used only when cost-benefit analyses show that use is truly justified and will produce beneficial results.

IPM can decrease pest losses, pesticide use, and costs and increase crop yield and stability. Successful IPM programs have been developed for insects and mites, plant diseases, weeds, vertebrates, and snails and slugs attacking various crops. Some IPM technology as conceived by research workers is too complex for farmers in developing countries. However, numerous IPM systems developed in close collaboration with farmers have been widely adopted in many of these countries.

Table 3. Examples of Criteria that EPA Considers When Initiating a Special Review of Pesticide Uses

Oncogenicity Mutagenicity Teratogenicity Fetotoxicity Reproductive effects Hazards to wildlife Toxic effects in liver and kidney Ecological effects Ground water contamination No antidote Carcinogenicity Emergency treatment	Acute toxicity Thyroid effects Acute and chronic toxicity to nontarget organisms Reduction in nontarget organisms Testicular effects Avian hazard Hazard to aquatic organisms Neurotoxicity Reduction in endangered species Bioaccumulation Chronic effects
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Table 4. Example of a Table for Summarizing the EPA Registration Use Category, Tolerances, and Special Review Status of Each of the Proposed Pesticides

Pesticide names ¹	EPA registration category		Status of tolerances for crops for which requested: ²			EPA Special Review status
	General use	Restricted use	Millet ³	Beans	Cabbage	
<u>Fungicides</u>						
Copper oxychloride (Cupravit)	X			F	E	
<u>Herbicides</u>						
Bentazon (Basagran) ⁴	X			T		5
2,4-D (Acme), emulsifiable concentrate	X			NT ⁶		7
<u>Insecticides</u>						
<u>Bacillus thuringiensis</u> (Dipel)	X		E		E	
Chlorpyrifos (Counter)	X		T			

¹Approved common name in the Pesticide Chemical News Guide and (in parenthesis) the trade name. A pesticide may have one or more trade names.

²T=EPA Tolerance established; NT=No EPA tolerance; E=Exempt from EPA tolerance. (Pesticide Chemical News Guide 1988).

³Millet is in cereal grains crop category of EPA's Crop Grouping [40 CFR 180.34(f)(9)], which includes the commodity corn. Status of tolerances for millet is based on tolerances established for corn.

⁴Bentazon will be used only in research demonstration plots under careful supervision by project supervisors.

⁵Bentazon is under Special Review because of suspected ground water contamination.

⁶No FAO/WHO recommended tolerances either. Treated beans will not be consumed; 2,4-D is to be included only as a reference treatment in farmer field trials.

⁷2,4-D is under Special Review because of suspected oncogenicity.

The EA should encourage the development and use of IPM. It should describe the existing use of IPM and indicate any requirements (including budget) for IPM training, research, etc. The requirements should be described in the EA's summary of mitigative measures and requirements.

Guidelines for IPM Programs

The EA should briefly describe the IPM program and how the proposed pesticide use will be integrated into it. Use of monitoring, nonpesticidal methods, and other features of the IPM program should be discussed along with pesticide use.

Specifics of an IPM program will depend on the crop, cropping system, pest complex, economic values, social conditions, availability of personnel, and other factors. The general steps for developing an IPM program appear in the boxes on the following pages.

d. The Proposed Method or Methods of Pesticide Application, Including Availability of Appropriate Application and Safety Equipment.

This section should describe the method or methods of application, availability of application equipment, and need for and availability of safety equipment. Before developing this section, the EA preparer should visit project sites to observe how the farmers apply pesticides and the safety practices they use, and to determine needs.

The equipment should be suited to local conditions. Large, powerful, or expensive equipment usually is impractical in developing countries where farmers commonly use small, hand-operated sprayers or dusters. Indicate all needs for equipment and spare parts in the EA's summary of mitigative measures and requirements.

This section should also describe availability and additional need for clothing and equipment to protect applicators, others, and environment. The pesticide label is an excellent information source: it includes a precautionary statement of the pesticide's hazards and describes clothing and equipment that should be used to reduce the hazards. Table 5 is a protective clothing and equipment guide developed by the California Department of Food and Agriculture for pesticides in EPA toxicity categories I-III. Note, however, that local climatic or economic conditions may preclude the use of protective clothing. Protective clothing recommended for temperate areas may be physically unbearable in tropical climates. If the necessary protective clothing is physically unbearable, then pesticides requiring this clothing should not be proposed.

The EA should clearly summarize precautions and safety information indicated on the pesticide labels, such as:

- How to avoid drift to nontarget areas.
- The need to avoid smoking or eating while using pesticides.

- The need to prevent unprotected persons and livestock from entering treated areas until enough time has passed for them to be safe. The pesticide label indicates how much time is required.
 - How to clean contaminated clothing.
 - How to clean up pesticide spills.
 - How to maintain the pesticide application equipment.
 - How to dispose of unused pesticide and pesticide containers.
 - How to store and transport the pesticides.
- e. Any Acute and Long-Term Toxicological Hazards, Either Human or Environmental, Associated With the Proposed Pesticide Use and Measures Available to Minimize Such Hazards.

The purpose of this section is to point out potentially harmful acute (short-term) and long-term effects of the proposed pesticides and outline measures to reduce the effects. A table (see Table 6 for example) showing the pesticides' acute oral LD₅₀ values, EPA toxicity categories, and signal words and reasons for EPA Special Review, if any, should be included. If any pesticides are under EPA Special Review, the reasons for the review should be discussed thoroughly in relation to their proposed use.

Acute Toxicological Hazards

Examples of acute effects on humans include problems related to absorption through skin, inhalation, or eye contact. Examples of acute environmental hazards include problems of toxicity to honey bees, fish, birds, or other wildlife. Other potential acute effects would include chemical explosions during fires. The pesticide label, CHEM-BANK, and Crop Protection Chemicals Reference are sources for information on the short-term effects.

A pesticide's acute oral LD₅₀ is the best indication of its potential short-term toxicity to humans. It is the amount of the chemical necessary to kill 50% of the test animal population (usually laboratory rats). The acute oral LD₅₀ is based on unit weight of pesticide per unit body weight of the test animal (mg/kg) when swallowed. Pesticides with the lowest LD₅₀ values are potentially the most toxic to humans (see Table 7). Ingestion of just a few drops to a teaspoon of a pesticide with an oral LD₅₀ of less than 50 might be sufficient to kill an adult person. An adult may have to consume 16 tablespoons to 0.5 kilogram or more of a pesticide with an oral LD₅₀ of 5000 before dying.

However, the pesticide's formulation and percentage active ingredient and other factors such as health of the person determine its actual hazard level. A pesticide formulation with 15% active ingredient would be potentially more hazardous than a formulation of the same pesticide chemical with 5% active ingredient.

STEPS TO IPM

STEP 1: IDENTIFY THE MAJOR PESTS AND ESTABLISH ECONOMIC INJURY LEVELS

Dozens of potentially harmful species may infest a crop. However, only a few serious pest species normally recur regularly. The serious pests--known as key, primary, or chronic pests --that recur regularly at intolerable levels are the focal organisms for IPM programs.

The criterion that determines whether taking action to control a harmful species is profitable is called the "economic injury level". The economic injury level may be expressed in different ways depending on the crop and the pests. For example:

- Numbers of insects per plant.
- Percentage of fruit damaged by a given pest.
- Numbers of weeds per square meter.

The economic injury level is the "break even point" in pest management. Below this level, the cost of control is not justified. Above this level, control may be profitable.

Several factors will influence the economic injury level for a specific pest: crop variety and stage of development, economic value of crop, presence of natural enemies, cost of the control measure, external costs to health and environment, etc. The economic injury level depends on the damage function (the relationship between pest intensity and yield loss) as well as the economics of reducing the damage. It therefore will change as these variables
(continued)

EPA has grouped pesticides into four toxicity categories according to their potential for causing injury to people and assigned them signal words ("Danger", "Warning", or "Caution") corresponding to their toxicity categories (see Table 7). Category I pesticides are most toxic or hazardous and their use is normally restricted. These are too toxic for general use in A.I.D. projects. Many Category II pesticides are also too toxic. They are acceptable only if the EA indicates that project use patterns will adequately mitigate hazards.

The following sources can be used to determine a pesticide's oral LD₅₀, EPA toxicity category, and EPA signal word:

- Oral LD₅₀: Farm Chemicals Handbook and CHEM-BANK.
- EPA toxicity category: The pesticide label, Crop Protection Chemicals Reference, Farm Chemicals Handbook, and PEST-BANK or CHEM-BANK.
- EPA signal word: The pesticide label, Crop Protection Chemicals Reference, Farm Chemicals Handbook, and PEST-BANK.

The EA should highlight special needs for avoiding short-term hazards. Some general suggestions appear on the pesticide label, under:

- Precautionary Statements.
- Statement of Practical Treatment.

STEPS TO IPM

change. Economic injury levels developed in one area will not likely be appropriate for use in another area.

Research is needed to determine the initial economic injury levels. Then, before economic injury levels are recommended for wide-scale use, they should be tested on a few farmers' fields to verify their effectiveness. The levels can be refined as more information becomes available.

By inspecting fields regularly and basing pesticide applications on economic threshold criteria, pest control costs (and pesticide use) usually can be reduced and profits increased.

STEP 2: SELECT THE BEST MIX OF CONTROL TECHNIQUES

All methods and practices (see Table 2, page 5) should be considered for the IPM program. First consideration should be given to the use of preventive measures, namely:

- Resistant crop varieties.
- Biological control (conservation or augmentation of natural enemies already present or introduction of new natural enemies).
- Cultural control (cultivation, crop rotation, use of pest-free seed and planting stock, fertilizer management, intercropping, etc.).

(continued)

- Directions for Use.
- Reentry Statement (the amount of time that must elapse before a person enters an area treated with a pesticide).
- Storage and Disposal Directions (special instructions on storage and disposal).

Long-Term Toxicological Hazards

Examples of long-term (delayed) human health effects include oncogenicity, teratogenicity, carcinogenicity, and mutagenicity (see Glossary, page 28, for explanation). Examples of long-term ecological effects include decrease in biodiversity and ecological stability and contamination of aquifers. Years of continuous observation and complex research are often necessary before long-term effect on humans or ecosystems are known.

CHEM-BANK is a good source for information on long-term effects. The EPA Report on the Status of Chemicals in the Special Review Program and Registration Standards in the Reregistration Program identifies suspected long-term effects of those pesticides in EPA Special Review program.

STEPS TO IPM

Farmers may already be using one or more of these preventive measures. It is therefore important to survey the farmers before determining which measures are needed.

Pesticides should be used only if no practical, effective, and economic nonchemical control methods are available. Then they should be applied only to keep the pests from reaching economic injury levels. The pesticides and application techniques selected should cause minimal harm to humans, livestock, honey bees, natural enemies, and the environment.

STEP 3: MONITOR THE FIELDS REGULARLY

The growth of pest populations usually is related closely to stage of crop growth and weather conditions. However, it is difficult to predict severity of pest problems accurately in advance. The crops must be inspected regularly to determine the levels of pests, natural enemies, and crop damage.

Extension and commodity organization personnel can assist with field inspections. They can train the farmers how to separate pests from non-pests and natural enemies and to determine when crop protection measures, perhaps including pesticides, are necessary. This approach has been very effective in many developing countries.

(continued)

f. The Effectiveness of the Requested Pesticide(s) for the Proposed Use.

The effectiveness of a pesticide is its ability to produce a desired effect on a target organism. Effectiveness is difficult to measure and expert opinions are often biased. Weather conditions, level of resistance in the pest, methods of application, and other factors will determine how effective a pesticide is.

What to Report on Effectiveness

The EA should include the following for the proposed pesticides:

- Why the pesticides are being proposed. Are efficacy data available? Are the pesticides superior to nonchemical control measures or other pesticides? If efficacy data are not available, have pest control experts or farmers had experience using the pesticides?
- How will pesticide efficacy be monitored?
- Is pest resistance to pesticides a problem? Pesticide resistance is one of the most serious factors affecting pesticide use. Worldwide, over 600 species of pests have developed resistance to one or more chemical pesticides. The problem is so serious in some areas that effective pesticides are no longer available for some major pests, such as the diamondback moth attacking cabbages and other plants of the mustard family. Malaria eradication programs in many countries are in disarray because vector mosquitoes are no longer adequately controlled with available insecticides. Combatting resistant strains is not easy, and there may not always be solutions. The best strategy is to avoid the

STEPS TO IPM

STEP 4: USE ALL CONTROL METHODS CORRECTLY AND SAFELY

Each pest control method has both advantages and disadvantages. Extension personnel and others advising farmers should learn the advantages and disadvantages. They should develop educational programs to teach farmers how to use the control methods correctly and safely.

STEP 5: COMPLY WITH ALL LEGAL CONTROLS

Legal controls result from laws and regulations and include:

- Quarantines to prevent the entry and establishment of new pests.
- Local laws and regulations that govern pesticides.
- Pesticide restrictions and regulations in projects financed by outside donors.
- Laws relating to international transport and marketing of produce.

All local pesticide laws and regulations as well as A.I.D. regulations must be followed. The EA should determine what laws and regulations exist, assess enforcement, and recommend appropriate changes.

STEP 6: DEVELOP EDUCATIONAL, TRAINING, AND DEMONSTRATION PROGRAMS FOR FARMERS AND EXTENSION WORKERS

Implementation of IPM depends heavily on education, training, and demonstrations to help farmer. and extension workers develop and evaluate the IPM methods. Practical hands-on training conducted in farmers' fields (as opposed to classroom) is a must. Special training for extension workers and educational programs for government officials and the public are also important.

problem of resistance by using pesticides sparingly and as a last resort in IPM systems.

g. Compatibility of the Proposed Pesticide(s) With Target and Nontarget Ecosystems.

This section should point to potentially harmful effects of pesticide use in the target (crop) ecosystem itself or surrounding crops or natural ecosystems.

This section requires site visit work to assess potential hazards to nontarget organisms, water, and other elements in the target crop and associated environment. Nontarget organisms such as natural enemies, honey bees, and other pollinators that inhabit target crops especially may be vulnerable. However, pesticides sometimes drift long distances. Highly volatile pesticides discharged from high pressure sprayers with small nozzles during windy conditions are the most prone to drift long distances.

The potential hazards in the treated area and in other areas where drift may be a problem should be described clearly.

Table 5. Protective Equipment and Clothing Guidelines For Pesticides in EPA Toxicity Categories I-III

Summarized label statement	Mixer-loader		Applicator	
	I-II	III	I-II	III [*]
Precautions should be taken to prevent exposure	A,B,C,F,G,H,R **	A,B,C,F,G,H	B,C,F,G,H,R **	C,F,H,R, **
Protective clothing or protective equipment is to be worn	A,B,C,F,G,H,R **	B,C,F,G,H,4 **	B,C,F,G,H,R **	C,F,H,R **
Clean clothing is to be worn	C	C	C	C
Contact with clothing should be avoided	A,B,C	B,C	B,C	C
Contact with shoes should be avoided	B	B	B	B
Rubber boots or rubber foot coverings are to be worn	B	B	B	B
Contact with skin should be avoided	A,B,C,F,G,H	B,C,F,G,H	B,C,F,G,H	C,F,G,H **
A cap or hat is to be worn	H	H	H	H
An apron is to be worn	A	A		
Rubber gloves are to be worn	G	G	G	G
Contact with eyes should be avoided	F	F	F	F
Goggles or face shield are to be worn	F	F	F	F
Avoid inhalation	R	R	R **	R **
A respirator is to be worn	R	R	R **	R **

A Waterproof apron made from rubber or synthetic material. Use for mixing liquids.

B Waterproof boots or foot coverings made from rubber or synthetic material.

C A daily change of clean overalls or clean outer clothing. Wear waterproof pants and jacket if there is any chance of becoming wet with spray.

F Face shield, goggles, or full face respirator. Goggles with side shields or a full face respirator are required if handling or applying dusts, wettable powders, or granules or if being exposed to spray mist.

G Waterproof, unlined gloves made from rubber or synthetic material.

H Waterproof, wide-brimmed hat with nonabsorbent headband.

R Cartridge type respirator approved for pesticide vapors when label specifies another type of respirator such as a dust mask, canister type gas mask, or self-contained breathing apparatus.

* If the Category III pesticide application is being made in an enclosed area such as a greenhouse, or if the application consists of a concentrate spray of 100 gallons-per-acre or less in a grove, orchard, or vineyard, then use the guidelines for Category I-II pesticides.

** Use these guidelines when there is likelihood of exposure to spray mist, dust, or vapors.

Source: P. J. Marer (author), M. L. Flint (technical editor), M. W. Stimmann (Statewide Pesticide Coordinator, OPIC). The safe and effective use of pesticides. Pesticide Appl. Compendium 1. U. Calif. Statewide Integrated Pest Management Project, Div. Agr. Nat. Resources. Publ. 3324.

Table 6. Example of a Table for Summarizing Toxicities of the Proposed Pesticides

Pesticide names ¹	Acute oral LD ₅₀ (mg/kg) ²	EPA Toxicity Category ³	EPA Signal Word ³	Reasons for EPA Special Review, if any
<u>Fungicides</u> Copper oxychloride (Cupravit)	ca. 1000	III	Caution	
<u>Herbicides</u> Bentazon (Basagran) ⁴ 2,4-D (Acme), emulsifiable concentrate	2063 1780	II III	Warning Caution	Suspected ground water contamination
<u>Insecticides</u> <u>Bacillus thuringiensis</u> (Dipel)	15000	III	Caution	

¹Approved common name in the Pesticide Chemical News Guide and (in parentheses) the trade name. A pesticide may have one or more trade names. Only show trade names of products to be used.

²Based on toxicity to rats. LD₅₀ values vary with formulation.

³See Table 7.

⁴Bentazon will be used only in research demonstration plots under careful supervision of the project supervisor.

Table 7. Criteria that EPA Uses to Establish Pesticide Toxicity Categories

Hazard indicators	Category I Danger	Category II Warning	Category III Caution	Category IV Caution
Oral LD ₅₀ of active ingredient	50 mg/kg or less	50-500 mg/kg	500-5000 mg/kg	>5000 mg/kg
Inhalation LD ₅₀	0.2 mg/liter or less	0.2-2 mg/liter	2.0-20 mg/liter	>20 mg/liter
Dermal LD ₅₀	200 mg/kg or less	200-2000 mg/kg	2000-20000 mg/kg	>20000 mg/kg
Eye Effects	Corrosive; corneal opacity not reversible within 7 days	Corneal opacity reversible within 7 days; irritation persisting for 7 days	No corneal opacity; irritation reversible within 7 days	No irritation
Skin Effects	Corrosive	Severe irritation at 72 hours	Moderate irritation at 72 hours	Mild or slight irritation at 72 hours

Special Requirements to Preserve Endangered Species and Biodiversity

The EA must give special attention to A.I.D. policy on endangered species and biodiversity. Section 119 of the Foreign Assistance Act requires that proposed actions by A.I.D. do not endanger wildlife species or habitats critical for them, harm protected areas, or adversely affect biodiversity (species richness). The EA should identify any species that may be endangered or threatened by the proposed pesticide use. It should also point to any potential harm to wildlife habitat, protected areas (wildlife preserves, parks, etc.), or biodiversity. The appropriate host country ministry or government office should be contacted for information and regulations on endangered species, protected areas, and biodiversity. Advice from local environmental organizations should be sought also.

h. The Conditions Under Which the Pesticide Is to Be Used, Including Climate, Flora, Fauna, Geography, Hydrology, and Soils.

This section should describe the environment where proposed pesticides will be used. The description can be rather general except when detailing hazard situations. A.I.D.'s environmental profiles, available for some of the A.I.D. countries, are good sources for preparing this section. Host country universities and ministries and environmental organizations are other sources.

It is important to include a description of any protected areas such as wildlife preserves and parks. Include maps to show the exact locations.

i. The Availability and Effectiveness of Other Pesticides or Nonchemical Control Methods.

This section should discuss the availability and effectiveness of nonchemical alternatives such as shown in Table 2 (page 5). Explain to what degree, how, and where nonchemical alternatives are presently being used and how effective they are. Availability, costs, and feasibility for use in the project should be described.

The section should also discuss the availability and effectiveness of other pesticides. The reason for doing this is to alert A.I.D. and host country officials to potential alternatives that could be considered if use of the proposed pesticides is not approved, if stocks of project pesticides run low, or if a change in regulations renders them unacceptable. Identify the alternatives by both common and brand names. Information on their effectiveness should be included. If effectiveness is suspected but not determined for the target crop or pest, recommend needed trials.

j. The Requesting Country's Ability to Regulate or Control the Distribution, Storage, Use, and Disposal of the Required Pesticide(s).

The purpose of this section is to describe the preparedness of the host country to enforce effective pesticide management. The discussion should address appropriate pesticide laws and regulations and the roles of relevant institutions associated with the project in regulating and controlling pesticide use.

Pesticide regulatory and enforcement procedures vary considerably among developing countries. Many countries have pesticide laws on the books, but few have the means for effective enforcement.

This section should briefly summarize provisions of the pesticide laws and regulations (e.g., authority for pesticide registration, importation, manufacture, storage, transportation, sale, and use of pesticides) and indicate the government offices in charge of enforcement. Also, state whether the country is presently capable of adequately enforcing the laws and regulations and complying with correct pesticide practices. Attach copies of the laws and regulations as an annex to the EA. Use of pesticides should not be proposed unless a country is capable of enforcing the laws and regulations or unless all aspects of their use will be closely supervised by trained project personnel.

If the country is not likely to enforce the pesticide law, indicate what is needed to achieve enforcement at project level. Personnel, other needs, and budgeting requirements should be included in the summary of mitigative measures and requirements.

k. The Provisions Made for Training of Users and Applicators.

This section should include a detailed training plan showing who should be trained (farmers, extension officers, etc.), specific type of training (pesticide safety, IPM, biological control, etc.), how the training is to be done (where, when, and who will do the training), and cost requirements. Such plans can be included in the EA as mitigative action. Personnel and other resources necessary to implement the training should be identified in the summary of mitigative measures and requirements.

How much impact the EA has in promoting safer and improved pest and pesticide practices will depend heavily on the A.I.D. project's training component. Pay particularly close attention to this section.

l. The Provisions Made for Monitoring the Use and Effectiveness of the Pesticide(s).

This section should identify the needs and provisions being made for monitoring of the following:

- Use patterns (frequency of and interval between applications) of the requested pesticide(s).
- Pesticide safety practices during transportation, storage, application, and disposal.
- Pesticide effectiveness.
- Environmental impacts.
- Public health impacts.

The monitoring plan should include a description of the specific kinds of monitoring, who will do it, and who will be responsible for correcting any unsafe pesticide practices or problems found during monitoring.

HOW TO SUMMARIZE THE MITIGATIVE MEASURES AND REQUIREMENTS

This section should briefly summarize all mitigative measures needed to reduce negative environmental impacts. A budget of costs should be included. This is a critical section of the EA and should be written carefully and clearly. The following example shows the form that this section might take:

1. Nonchemical methods of control and IPM systems will be emphasized.

Project training and demonstrations will emphasize nonchemical methods of control and IPM systems. All project personnel and farmers using pesticides in the project will receive training on use of nonchemical methods and IPM. IPM will be demonstrated and evaluated on selected farms.

2. Selection of pesticides.

The pesticides to be used in the A.I.D. project:

- Have no acceptable nonchemical alternatives.
- Are EPA registered for the same or similar use or have the requisite tolerances established.
- Have low human toxicities, present no unacceptable acute or long-term toxicological hazards, and have not been classified by EPA for restricted use.
- Are relatively non-persistent in the environment and present no unacceptable hazards to the environment or nontarget organisms.
- Have not been withdrawn, suspended, or canceled in the U.S. and are not under EPA Special Review.

3. Provide pesticide training and protection to project personnel and participating farmers.

All project personnel and farmers using pesticides in the project will receive training on correct transportation, storage, application, and disposal of pesticides, worker and applicator protection, how to recognize and treat pesticide poisoning, and environmental protection. The training will include instruction on local laws and regulations regarding pesticides, human protection, and environmental protection.

A.I.D. will provide safety equipment and protective clothing to all persons who use pesticides in the project. The equipment and clothing will comply with recommendations on pesticide manufacturers' labels and be feasible for use in the particular climate and social setting.

4. Monitor pesticide use.

Project personnel will regularly monitor project use of pesticides on farmer's fields and demonstration sites and enforce their proper use.

5. Comply with local laws and regulations.

Project supervisors will enforce compliance with all relevant laws and regulations on pesticides, human safety, and environmental protection.

6. Cost requirements.

Include a budget to show the cost for each mitigative measure.

GLOSSARY OF TERMS COMMONLY ENCOUNTERED IN ENVIRONMENTAL ASSESSMENTS^{1/}

Acaricide. A pesticide used to control mites.

Acceptable daily intake (ADI). The level of pesticide residue that may be consumed each day over the course of an average human life span without appreciable risk.

Active ingredient (a.i.). The material in the pesticide formulation responsible for the toxic (or other desired) effects on a target pest.

Acute dermal LD₅₀. The dose of a pesticide absorbed through the skin that kills 50% of a population of test animals; usually expressed in milligrams of pesticide per kilogram of body weight of test animal.

Acute effects. The immediate effects (as opposed to delayed effects) of a pesticide.

Acute oral LD₅₀. The dose of a pesticide ingested by mouth that kills 50% of a population of test animals; usually expressed in milligrams of pesticide per kilogram of body weight of test animal.

Acute (short-term) toxicological hazards. The immediate hazards of a pesticide.

Agroecosystem. The ecological community and physical environment in an agricultural land unit.

A.I.D. mission. The A.I.D. representation in a foreign country.

A.I.D. Endangered Species Act. Section 119 of the Foreign Assistance Act.

A.I.D. Environmental Procedures. Procedures of Title 22 of the Code of Federal Regulations, Part 216, to ensure that environmental factors and values are integrated into the A.I.D. decision making process.

A.I.D. Handbook 3. Project Assistance. A.I.D.'s official manual on the requirements for analysis, authorization, development, implementation/monitoring, and evaluation of projects supported by A.I.D.

Application equipment. Equipment for applying pesticides (may range from hand-held sprayers to aircraft sprayers).

Applicator (of pesticides). Any person who applies pesticides.

Aquatic. Pertaining to water.

^{1/}The glossary is based, in part, on terms in the publication by Marer, Flint, and Stimmann (1988) cited in Table 5 (page 22).

Attractant. A substance that attracts a specific species of animal to it. When manufactured to attract pests to traps or poisoned bait, attractants are considered to be pesticides.

Avian. Relating to birds.

Avicide. A pesticide used to control pest birds.

Bait. A food or foodlike substance that is used to attract and, often, to poison pest animals.

Beneficial. Helpful in some way to people, such as a beneficial plant or insect.

Bioaccumulation. The gradual buildup of certain pesticides within the tissues of living organisms after they feed on lower organisms containing smaller amounts of these pesticides. Animals higher up on the food chain accumulate greater amounts of these pesticides in their tissues.

Biodiversity. The richness or abundance of species of organisms or biotic life forms.

Biological control. The use of natural enemies (predators, parasites, or disease agents) to control pests.

Brand name. See Trade name.

Broad-spectrum pesticide. A pesticide that is capable of controlling many different species or types of pests.

Calibration. The process for measuring the output of pesticide equipment so that the proper amount of pesticide can be applied to a given area.

Carcinogenicity. The cancer-causing potential of a substance.

Caution. The signal word on labels of pesticides in EPA toxicity Category III or IV; these pesticides have an oral LD₅₀ greater than 500 and a dermal LD₅₀ greater than 2000.

CD-ROM. Compact disk-read only memory.

CHEM-BANK. A database of SilverPlatter Information Services that provides environmental and toxicological data for some of the EPA-registered pesticides.

Chemical name. Name of the chemical ingredients of a pesticide.

Chronic. Pertaining to long duration or frequent recurrence.

Chronic effects. Long-term or recurring effects.

Climate. The prevailing or average weather conditions of a place as determined by temperature and meteorology over a period of years.

Common name. An approved nontechnical name of a pesticide product. An approved nontechnical name of an organism.

Compatibility. In A.I.D. Environmental Assessments, refers to the degree of known hazards to the target ecosystem (crops to be treated) or nontarget ecosystems (surrounding noncropping environment or crops not to be treated).

Contents. All that is contained in a pesticide container.

Corneal opacity. The eye's imperviousness to rays of light.

Corrosive. Having the power to corrode or wear away by chemical action.

Cultural controls. Crop management and other practices that make the environment less favorable for pests, e.g., field sanitation, crop rotation, diversification, harvesting practices, time of planting, trap crops.

Danger. The signal word used on labels of pesticides in EPA toxicity Category I pesticides with an oral LD₅₀ of 50 or less or a dermal LD₅₀ less than 200 or having specific, serious health or environmental hazards.

Delayed effects. Effects of pesticides that occur later (sometimes years later) and not immediately.

Dermal. Pertaining to the skin. One of the major ways pesticides can enter the body.

Dermal LD₅₀. See acute dermal LD₅₀.

Disposal (of pesticides). Destruction of left-over pesticides or pesticide containers.

Distribution (of pesticides). The process by which pesticides get from their point of entry (into a country, for example) to their final destination.

Dose. The measured quantity of a pesticide.

Directions for use. Statements on the pesticide labels describing use.

Drift. The movement of pesticide dust, spray, or vapor away from the application site.

Ecological. Consideration of the interrelationship between living organisms and the environment.

Economic damage. Damage caused by pests to plants, animals, or other resources that results in loss of income or a reduction of value.

Economic injury level. The point at which the value of the damage caused by a pest exceeds the cost of controlling the pest.

Ecosystem. An ecological community together with its physical environment.

Effectiveness (of pesticides). See efficacy.

Efficacy. The ability of a pesticide to produce a desired effect on a target organism.

Endangered species. A species in danger of extinction.

Environment. All of the living organisms and nonliving features of a defined area.

Environmental Assessments. In A.I.D. projects a detailed study of the reasonably foreseeable significant effects, both beneficial and adverse, of a proposed action on the environment of a foreign country or countries.

Environmental Impact Statement. A detailed study of the reasonably foreseeable environmental impacts, both positive and negative, of a proposed A.I.D. action and its reasonable alternatives on the United States, the global environment, or areas outside the jurisdiction of any nation.

EPA Signal Word. See Signal Word.

EPA Toxicity Category. Four categories used to indicate the potential hazard of EPA-registered pesticides; Category I uses the signal words "Danger" and "Poison" to signify highly toxic compounds (acute oral LD₅₀ mg/kg), Category II uses the word "Warning" to signify moderately toxic compounds (acute oral LD₅₀ 50-500 mg/kg), Category III uses the word "Caution" to signify slightly toxic compounds (acute oral LD₅₀ 500-5000 mg/kg), and Category IV uses the word "Caution" and must state "Keep Out Of The Reach Of Children" (acute oral LD₅₀ >5000 mg/kg).

Exempt from tolerance. Indicates that EPA has determined that minute amounts of pesticide residue on foods will cause no adverse effects to humans.

Fauna. Animal life.

Fetotoxicity. Pesticide toxicity to the unborn fetus.

FIFRA. The Federal Insecticide, Fungicide, and Rodenticide Act of 1947. Governs the licensing, or registration, of pesticide products.

Flora. Plant life.

Formulation. A mixture of active ingredients combined during manufacture with inert materials. Inert materials are added to improve the mixing and handling qualities of a pesticide.

Fumigant. Vapor or gas form of a pesticide used to penetrate porous surfaces for control of soil dwelling pests or pests in enclosed areas or storage.

Fungicide. A pesticide used for control of fungi.

General use (unclassified) pesticide. A pesticides that has been designated by EPA for use by the general public as well as by licensed or certified applicators.

Geography. The physical features (especially the surface features) of a region, area, or place.

Groundwater. Fresh water trapped in aquifers beneath the surface of the soil and used for drinking, irrigation, and manufacturing.

Habitat. The place where an organism lives.

Herbicide. A pesticide used to control weeds.

Host. A plant or animal species that provides sustenance for another organism.

Host country. The country hosting an A.I.D. project.

Host resistance. The ability of a host plant or animal to ward off or resist attack by pests or to be able to tolerate damage caused by pests.

Hydrology. The science dealing with water, its distribution, and the evaporation and precipitation cycle.

Inert ingredient. A substance (such as a solvent) contained in a pesticide formulation, which by itself does not add materially to the pesticide's effect on a pest.

Ingredients. The chemical composition of the pesticide. See Active ingredient and Inert ingredient.

Inhalation. Entering the body through breathing. One of the routes of entry of pesticides into the body.

Initial Environmental Examination. The first review of the reasonably foreseeable effects of a proposed action (in an A.I.D. project) on the environment.

Insecticide. A pesticide used to control insects. Some insecticides are also labeled for control of ticks, mites, spiders, and other arthropods.

Integrated pest management (IPM). Use of a variety of biological, cultural, and chemical control methods in a cohesive management scheme designed to maintain pest populations at levels below those causing economic injury.

Interval. The legal period of time that must elapse between the application of a pesticide and worker reentry into the treated field or the harvesting of produce. See Preharvest interval and Reentry interval.

Invertebrate. An animal that has no backbone (e.g., insect).

IPM. Integrated pest management.

Irreversible. An effect that is not reversible or cannot be repealed or annulled.

Knapsack sprayer. A small portable sprayer carried on the back of the person making a pesticide application. Some knapsack sprayers are hand-operated and others are powered by small gasoline engines.

Label signal words. See signal word.

LC₅₀. The lethal concentration of a pesticide in the air or in a body of water that will kill half of a test population. LC₅₀ values are given in micrograms per milliliter of air or water.

LD₅₀. Abbreviation of median lethal dose, MLD. A dose of a pesticide that kills 50% of a population of test animals; usually expressed in milligrams of pesticide per kilograms of test animal body weight.

Lethal. Capable of causing death.

Long-term (delayed) toxicological hazards. Hazards occurring over or involving a relatively long period of time.

Manufacturer. The company manufacturing the pesticide product.

Maximum residue limit (MRL). The maximum residue level likely to arise when a pesticide is used according to recommendations reflecting good agricultural practices.

Misuse statement. Statement on a pesticide label that indicates when the pesticide is used incorrectly and the potential consequences.

Mites. Tiny, sometimes microscopic, relatives of insects that belong to the order Acari of the arthropod phylum.

Mitigative measure. Action taken to avoid, reduce, minimize, repair, or compensate for an adverse environmental impact.

MLD. Median lethal dose. See LD₅₀.

Mode of action. The way a pesticide reacts with a pest organism to destroy it.

Monitoring. Sampling or observations of pesticide use, pesticide residue, natural enemies, etc.

Mutagenic. A chemical that is capable of causing mutations in the cells of living organisms.

Mutagenicity. The degree to which a compound can cause a biological mutation.

Natural enemies. Predators, parasites, and microorganisms that cause the death of pests; biological control agents.

Negative Declaration. A finding that the proposed A.I.D. action will not have a significant effect on the environment.

Nematicide. A pesticide used to control nematodes.

Nematode. Elongated, cylindrical, nonsegmented worms. Nematodes are commonly microscopic; some are parasites of plants or animals.

Nonchemical method. Any method other than a chemical pesticide used to prevent or control a pest. Same as Nonpesticidal method.

Nonpesticidal method. Same as Nonchemical method.

Nontarget ecosystem. An ecosystem not intentionally receiving a pesticide application.

Nontarget organism. Animals or plants within or outside a pesticide treated area that are not intended to be killed or injured by the pesticide application.

Nozzle. A short tube at the end of a sprayer hose that breaks up a pesticide spray into small droplets and directs it toward the target area.

Oncogenicity. A measure of the tendency of a compound to cause tumors.

Oral. Through the mouth. One of the routes of entry of pesticides into the body.

Organism. Any living thing.

Parasite (parasitoid). An organism that grows and feeds in or on a host; often used in biological control programs to suppress pest populations.

Pathogen. A microorganism that causes a disease.

PEST-BANK. A database of SilverPlatter Information Services that allows access to information (registration status, residue tolerances, etc.) on EPA-registered pesticides.

Pest control practice. An action taken (such as plowing, rotating crops, etc.) to reduce a pest problem. Sometimes used interchangeably with Tactic.

Pest control tactic. See Tactic.

Pest management. Any deliberative action to prevent or reduce the density or harmful effects of a pest population.

Pesticide. Any substance or mixture of substances intended for harming, destroying, repelling, or mitigating the effects of pests (insects, rodents, nematodes, fungi, weeds, or any other forms of life declared to be pests); and any other substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

Pesticide formulation. The pesticide as it comes from its original container, consisting of the active ingredient blended with inert materials.

Pesticide label. Information on a pesticide container required by EPA.

Pesticide management. Deliberate actions to reduce the harmful effects of pesticides; includes legislation and regulations as well as safe application, storage, and disposal.

Pesticide resistance. Genetic qualities of a pest population that enable individuals to resist the effects of certain types of pesticides that are toxic to other members of that species.

Pheromone. A chemical substance given off by one individual that causes a specific reaction by other individuals of the same species, such as sex attractants.

Phytotoxic. Injurious to plants.

Positive Threshold Decision. A finding that the proposed A.I.D. action may have a significant effect on the environment.

Practice. See Pest control practice.

Precautionary statements. Statements on a pesticide label that give precautions for using the product.

Predator. An organism that lives by preying on animals (prey); often used in biological control programs to suppress pest populations.

Preharvest interval. A period of time set by law that must elapse between pesticide application to an edible crop and harvesting of the crop. Pesticide labels provide information on preharvest intervals.

Prey. Animals that serve as food for predators.

Product. A commercial formulation of a pesticide.

Project Identification Document. An internal A.I.D. document that initially identifies and describes a proposed project.

Project Paper. An internal A.I.D. document that provides the definitive description and appraisal of a project, particularly the implementation plan.

Rate. The quantity or volume of pesticide that is applied to an area over a specified period of time.

Reentry interval. The period of time specified by law that must elapse after a pesticide is applied before people can resume work in the treated area.

Reentry statement. Statement on the pesticide label concerning the time between application of the material and safe entry into the treated area.

Registration and establishment numbers. The registration number assigned to the product by EPA. For regular registrations, the number preceding the hyphen represents the registering company (establishment).

Reproductive effects. Effects of a pesticide on reproduction in animals.

Residue. Traces of pesticide that remain on treated surfaces after a period of time.

Resistance. See Pesticide resistance and Host resistance.

Respirator. A device worn over the nose and mouth to prevent inhalation of toxic substances.

Restricted-use pesticide. A pesticide, usually in EPA toxicity Category I, that is available for purchase and use only by applicators who have a valid Certified Pesticide Applicator license, or by persons under their direct supervision.

Reversible. Opposite of irreversible.

Rodenticide. A pesticide used to control rats and other rodents.

Rope wick applicator. A device used to apply contact herbicides onto target weed foliage with a saturated rope or cloth pad.

Safety equipment. Face masks, goggles, respirators, etc. to reduce exposure to and risks from pesticides.

Safety apparel. Clothing (coveralls, hat, boots, gloves, etc.) to reduce exposure to and risks from pesticides.

Selective pesticide. A pesticide that has a mode of action against only a single or small number of pest species.

Signal Word. The word "Danger", "Warning", or "Caution" that appears on the label of an EPA-registered pesticide to signify how toxic the pesticide is and what toxicity category it belongs to.

Significant effect. Significant harm to the environment.

Slugs. Any of the gastropod land mollusks with rudimentary internal shells in their mantles.

Snails. Gastropod mollusks living on land or in water and having a spiral protective shell.

Special Review. A process to determine if certain EPA risk criteria are exceeded by a particular registered pesticide. If the Review determines that a pesticide exceeds the risk criteria, the pesticide is presumed unsuitable for registration unless that presumption is rebutted.

Statement of practical treatments. Statement on a pesticide label of acceptable procedures for treating people poisoned by or contaminated with the material.

Statement of use classification. Statement on a pesticide label to make proper use of the material understandable.

Storage (of pesticides). The way pesticides are kept when not being used.

Tactic. Any method (pesticide, biological control agent, etc.) used to reduce a pest problem.

Target. Either the pest that is being controlled or surfaces within an area that the pest will contact.

Target ecosystem. An ecosystem intentionally receiving a pesticide application such as crop ecosystem.

Target pest. A harmful organism at which a pesticide or other pest control tactic or practice is directed.

Teratogenicity. A measure of a compound's tendency to cause physical birth defects in the offspring of exposed parents (male or female).

Testicular effects. Effects of a pesticide on male testes.

Threatened species. Any species of fish, wildlife, or plant listed as having its existence threatened.

Threshold Decision. A decision to determine if a proposed A.I.D. action will or will not have a significant impact on the environment.

Thyroid effects. Effects of a pesticide on the thyroid gland.

Tolerance. The pesticide residue level permitted in or on raw agricultural commodities or processed foods.

Toxicity Category. See EPA Toxicity Category.

Trade name. Trademark (brand) name of a pesticide, formulation, or other product.

Toxicity. A pesticide's potential for causing harm.

U. S. Environmental Protection Agency (EPA). The federal agency responsible for regulating pesticide use in the United States.

Ultra-low-volume (ULV). A pesticide application technique in which very small amounts of liquid spray are applied over a unit of area; usually 2 liters or less of spray per acre in row crops to about 20 liters of spray per acre in orchards and vineyards.

Unclassified (general use) pesticide. See General use pesticide.

User (of pesticides). Any person using (storing, mixing, applying, transporting, or disposing of) a pesticide.

Vertebrates. The group of animals that have an internal skeleton and segmented spine, such as fish, birds, reptiles, and mammals.

Virus. A very small organism that multiplies in living cells and is capable of producing disease symptoms in some plants and animals.

Volatile. Readily vaporizable at a relatively low temperature.

Warranty. The manufacturer's guarantee of the integrity of a pesticide product.

Warning. The signal word used on labels of pesticides in EPA toxicity Category II, having an oral LD₅₀ between 50 and 500 and a dermal LD₅₀ between 200 to 2000.

ANNEX 1
22 CFR PART 216, ENVIRONMENTAL PROCEDURES

PART 216—ENVIRONMENTAL PROCEDURES

Sec.

- 216.1 Introduction.
- 216.2 Applicability of procedures.
- 216.3 Procedures.
- 216.4 Private applicants.
- 216.5 Endangered species.
- 216.6 Environmental assessments.
- 216.7 Environmental impact statements.
- 216.8 Public hearings.
- 216.9 Bilateral and multi-lateral studies and concise reviews of environmental issues.
- 216.10 Records and reports.

AUTHORITY: 42 U.S.C.4332; 22 U.S.C. 2381.

SOURCE: 41 FR 26913, June 30, 1976, unless otherwise noted.

§ 216.1 Introduction.

(a) *Purpose.* In accordance with sections 118(b) and 621 of the Foreign Assistance Act of 1961, as amended, (the FAA) the following general procedures shall be used by A.I.D. to ensure that environmental factors and values are integrated into the A.I.D. decision making process. These procedures also assign responsibility within the Agency for assessing the environmental effects of A.I.D.'s actions. These procedures are consistent with Executive Order 12114, issued January 4, 1979, entitled Environmental Effects Abroad of Major Federal Actions, and the purposes of the National Environ-

mental Policy Act of 1970, as amended (42 U.S.C. 4371 et seq.) (NEPA). They are intended to implement the requirements of NEPA as they effect the A.I.D. program.

(b) *Environmental Policy.* In the conduct of its mandate to help upgrade the quality of life of the poor in developing countries, A.I.D. conducts a broad range of activities. These activities address such basic problems as hunger, malnutrition, overpopulation, disease, disaster, deterioration of the environment and the natural resource base, illiteracy as well as the lack of adequate housing and transportation. Pursuant to the FAA, A.I.D. provides development assistance in the form of technical advisory services, research, training, construction and commodity support. In addition, A.I.D. conducts programs under the Agricultural Trade Development and Assistance Act of 1954 (Pub. L. 480) that are designed to combat hunger, malnutrition and to facilitate economic development. Assistance programs are carried out under the foreign policy guidance of the Secretary of State and in cooperation with the governments of sovereign states. Within this framework, it is A.I.D. policy to:

(1) Ensure that the environmental consequences of A.I.D.-financed activities are identified and considered by A.I.D. and the host country prior to a

final decision to proceed and that appropriate environmental safeguards are adopted;

(2) Assist developing countries to strengthen their capabilities to appreciate and effectively evaluate the potential environmental effects of proposed development strategies and projects, and to select, implement and manage effective environmental programs;

(3) Identify impacts resulting from A.I.D.'s actions upon the environment, including those aspects of the biosphere which are the common and cultural heritage of all mankind; and

(4) Define environmental limiting factors that constrain development and identify and carry out activities that assist in restoring the renewable resource base on which sustained development depends.

(c) *Definitions*—(1) *CEQ Regulations*. Regulations promulgated by the President's Council on Environmental Quality (CEQ) (FEDERAL REGISTER, Volume 43, Number 230, November 29, 1978) under the authority of NEPA and Executive Order 11514, entitled Protection and Enhancement of Environmental Quality (March 5, 1970) as amended by Executive Order 11991 (May 24, 1977).

(2) *Initial Environmental Examination*. An Initial Environmental Examination is the first review of the reasonably foreseeable effects of a proposed action on the environment. Its function is to provide a brief statement of the factual basis for a Threshold Decision as to whether an Environmental Assessment or an Environmental Impact Statement will be required.

(3) *Threshold Decision*. A formal Agency decision which determines, based on an Initial Environmental Examination, whether a proposed Agency action is a major action significantly affecting the environment.

(4) *Environmental Assessment*. A detailed study of the reasonably foreseeable significant effects, both beneficial and adverse, of a proposed action on the environment of a foreign country or countries.

(5) *Environmental Impact Statement*. A detailed study of the reasonably foreseeable environmental impacts, both positive and negative, of a

proposed A.I.D. action and its reasonable alternatives on the United States, the global environment or areas outside the jurisdiction of any nation as described in § 216.7 of these procedures. It is a specific document having a definite format and content, as provided in NEPA and the CEQ Regulations. The required form and content of an Environmental Impact Statement is further described in § 216.7 infra.

(6) *Project Identification Document (PID)*. An internal A.I.D. document which initially identifies and describes a proposed project.

(7) *Program Assistance Initial Proposal (PAIP)*. An internal A.I.D. document used to initiate and identify proposed non-project assistance, including commodity import programs. It is analogous to the PID.

(8) *Project Paper (PP)*. An internal A.I.D. document which provides a definitive description and appraisal of the project and particularly the plan or implementation.

(9) *Program Assistance Approval Document (PAAD)*. An internal A.I.D. document approving non-project assistance. It is analogous to the PP.

(10) *Environment*. The term environment, as used in these procedures with respect to effects occurring outside the United States, means the natural and physical environment. With respect to effects occurring within the United States see § 216.7(b).

(11) *Significant Effect*. With respect to effects on the environment outside the United States, a proposed action has a significant effect on the environment if it does significant harm to the environment.

(12) *Minor Donor*. For purposes of these procedures, A.I.D. is a minor donor to a multidonor project when A.I.D. does not control the planning or design of the multidonor project and either (i) A.I.D.'s total contribution to the project is both less than \$1,000,000 and less than 25 percent of the estimated project cost, or (ii) A.I.D.'s total contribution is more than \$1,000,000 but less than 25 percent of the estimated project cost and the environmental procedures of the donor in control of the planning of design of the project are followed, but only if the

A.I.D. Environmental Coordinator determines that such procedures are adequate.

[45 FR 70244, Oct. 23, 1980]

§ 216.2 Applicability of procedures.

(a) *Scope.* Except as provided in § 216.2(b), these procedures apply to all new projects, programs or activities authorized or approved by A.I.D. and to substantive amendments or extensions of ongoing projects, programs, or activities.

(b) *Exemptions.* (1) Projects, programs or activities involving the following are exempt from these procedures:

- (i) International disaster assistance;
- (ii) Other emergency circumstances; and
- (iii) Circumstances involving exceptional foreign policy sensitivities.

(2) A formal written determination, including a statement of the justification therefore, is required for each project, program or activity for which an exemption is made under paragraphs (b)(1)(ii) and (iii) of this section, but is not required for projects, programs or activities under paragraph (b)(1)(i) of this section. The determination shall be made either by the Assistant Administrator having responsibility for the program, project or activity, or by the Administrator, where authority to approve financing has been reserved by the Administrator. The determination shall be made after consultation with CEQ regarding the environmental consequences of the proposed program, project or activity.

(c) *Categorical Exclusions.* (1) The following criteria have been applied in determining the classes of actions including in § 216.2(c)(2) for which an Initial Environmental Examination, Environmental Assessment and Environmental Impact Statement generally are not required;

(i) The action does not have an effect on the natural or physical environment;

(ii) A.I.D. does not have knowledge of or control over, and the objective of A.I.D. in furnishing assistance does not require, either prior to approval of financing or prior to implementation of specific activities, knowledge of or

control over, the details of the specific activities that have an effect on the physical and natural environment for which financing is provided by A.I.D.;

(iii) Research activities which may have an affect on the physical and natural environment but will not have a significant effect as a result of limited scope, carefully controlled nature and effective monitoring.

(2) The following classes of actions are not subject to the procedures set forth in § 216.3, except to the extent provided herein;

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

(ii) Controlled experimentation exclusively for the purpose of research and field evaluation which are confined to small areas and carefully monitored;

(iii) Analyses, studies, academic or research workshops and meetings;

(iv) Projects in which A.I.D. is a minor donor to a multidonor project and there is no potential significant effects upon the environment of the United States, areas outside any nation's jurisdiction or endangered or threatened species or their critical habitat;

(v) Document and information transfers;

(vi) Contributions to international, regional or national organizations by the United States which are not for the purpose of carrying out a specifically identifiable project or projects;

(vii) Institution building grants to research and educational institutions in the United States such as those provided for under section 122(d) and Title XII of Chapter 2 of Part I of the FAA (22 USCA 2151 p. (b) 2220a. (1979));

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

(ix) Assistance provided under a Commodity Import Program when, prior to approval, A.I.D. does not have

knowledge of the specific commodities to be financed and when the objective in furnishing such assistance requires neither knowledge, at the time the assistance is authorized, nor control, during implementation, of the commodities or their use in the host country.

(x) Support for intermediate credit institutions when the objective is to assist in the capitalization of the institution or part thereof and when such support does not involve reservation of the right to review and approve individual loans made by the institution;

(xi) Programs of maternal or child feeding conducted under Title II of Pub. L. 480;

(xii) Food for development programs conducted by food recipient countries under Title III of Pub. L. 480, when achieving A.I.D.'s objectives in such programs does not require knowledge of or control over the details of the specific activities conducted by the foreign country under such program;

(xiii) Matching, general support and institutional support grants provided to private voluntary organizations (PVOs) to assist in financing programs where A.I.D.'s objective in providing such financing does not require knowledge of or control over the details of the specific activities conducted by the PVO;

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

(xv) Activities which involve the application of design criteria or standards developed and approved by A.I.D.

(3) The originator of a project, program or activity shall determine the extent to which it is within the classes of actions described in paragraph (c)(2) of this section. This determination shall be made in writing and be submitted with the PID, PAIP or comparable document. This determination, which must include a brief statement supporting application of the exclusion shall be reviewed by the Bureau Environmental Officer in the same manner as a Threshold Decision under § 216.3(a)(2) of these proce-

dures. Notwithstanding paragraph (c)(2) of this section, the procedures set forth in § 216.3 shall apply to any project, program or activity included in the classes of actions listed in paragraph (c)(2) of this section, or any aspect or component thereof, if at any time in the design, review or approval of the activity it is determined that the project, program or activity, or aspect or component thereof, is subject to the control of A.I.D. and may have a significant effect on the environment.

(d) *Classes of Actions Normally Having a Significant Effect on the Environment.* (1) The following classes of actions have been determined generally to have a significant effect on the environment and an Environmental Assessment or Environmental Impact Statement, as appropriate, will be required:

(i) Programs of river basin development;

(ii) Irrigation or water management projects, including dams and impoundments;

(iii) Agricultural land leveling;

(iv) Drainage projects;

(v) Large scale agricultural mechanization;

(vi) New lands development;

(vii) Resettlement projects;

(viii) Penetration road building or road improvement projects;

(ix) Powerplants;

(x) Industrial plants;

(xi) Potable water and sewerage projects other than those that are small-scale.

(2) An Initial Environmental Examination normally will not be necessary for activities within the classes described in § 216.2(d), except when the originator of the project believes that the project will not have a significant effect on the environment. In such cases, the activity may be subjected to the procedures set forth in § 216.3.

(e) *Pesticides.* The exemptions of paragraph (b)(1) of this section and the categorical exclusions of paragraph (c)(2) of this section are not applicable to assistance for the procurement or use of pesticides.

[45 FR 70244, Oct. 23, 1980]

§ 216.3 Procedures.

(a) *General procedures*—(1) *Preparation of the Initial Environmental Examination.* Except as otherwise provided, an Initial Environmental Examination is not required for activities identified in § 216.2(b)(1), (c) (2), and (d). For all other A.I.D. activities described in § 216.2(a) an Initial Environmental Examination will be prepared by the originator of an action. Except as indicated in this section, it should be prepared with the PID or PAIP. For projects including the procurement or use of pesticides, the procedures set forth in paragraph (b) of this section will be followed, in addition to the procedures in this paragraph. Activities which cannot be identified in sufficient detail to permit the completion of an Initial Environmental Examination with the PID or PAIP, shall be described by including with the PID or PAIP: (i) An explanation indicating why the Initial Environmental Examination cannot be completed; (ii) an estimate of the amount of time required to complete the Initial Environmental Examination; and (iii) a recommendation that a Threshold Decision be deferred until the Initial Environmental Examination is completed. The responsible Assistant Administrator will act on the request for deferral concurrently with action on the PID or PAIP and will designate a time for completion of the Initial Environmental Examination. In all instances, except as provided in paragraph (a)(7) of this section, this completion date will be in sufficient time to allow for the completion of an Environmental Assessment or Environmental Impact Statement, if required, before a final decision is made to provide A.I.D. funding for the action.

(2) *Threshold decision.* (i) The Initial Environmental Examination will include a Threshold Decision made by the officer in the originating office who signs the PID or PAIP. If the Initial Environmental Examination is completed prior to or at the same time as the PID or PAIP, the Threshold Decision will be reviewed by the Bureau Environmental Officer concurrently with approval of the PID or PAIP. The Bureau Environmental Of-

ficer will either concur in the Threshold Decision or request reconsideration by the officer who made the Threshold Decision, stating the reasons for the request. Differences of opinion between these officers shall be submitted for resolution to the Assistant Administrator at the same time that the PID is submitted for approval.

(ii) An Initial Environmental Examination, completed subsequent to approval of the PID or PAIP, will be forwarded immediately together with the Threshold Determination to the Bureau Environmental Officer for action as described in this section.

(iii) A Positive Threshold Decision shall result from a finding that the proposed action will have a significant effect on the environment. An Environmental Impact Statement shall be prepared if required pursuant to § 216.7. If an impact statement is not required, an Environmental Assessment will be prepared in accordance with § 216.6. The cognizant Bureau or Office will record a Negative Determination if the proposed action will not have a significant effect on the environment.

(3) *Negative Declaration.* The Assistant Administrator, or the Administrator in actions for which the approval of the Administrator is required for the authorization of financing, may make a Negative Declaration, in writing, that the Agency will not develop an Environmental Assessment or an Environmental Impact Statement regarding an action found to have a significant effect on the environment when (i) a substantial number of Environmental Assessments or Environmental Impact Statements relating to similar activities have been prepared in the past, if relevant to the proposed action, (ii) the Agency has previously prepared a programmatic Statement or Assessment covering the activity in question which has been considered in the development of such activity, or (iii) the Agency has developed design criteria for such an action which, if applied in the design of the action, will avoid a significant effect on the environment.

(4) *Scope of Environmental Assessment or Impact Statement*—(i) *Proce-*

ture and Content. After a Positive Threshold Decision has been made, or a determination is made under the pesticide procedures set forth in paragraph (b) of this section that an Environmental Assessment or Environmental Impact Statement is required, the originator of the action shall commence the process of identifying the significant issues relating to the proposed action and of determining the scope of the issues to be addressed in the Environmental Assessment or Environmental Impact Statement. The originator of an action within the classes of actions described in § 216.2(d) shall commence this scoping process as soon as practicable. Persons having expertise relevant to the environmental aspects of the proposed action shall also participate in this scoping process. (Participants may include but are not limited to representatives of host governments, public and private institutions, the A.I.D. Mission staff and contractors.) This process shall result in a written statement which shall include the following matters:

(a) A determination of the scope and significance of issues to be analyzed in the Environmental Assessment or Impact Statement, including direct and indirect effects of the project on the environment.

(b) Identification and elimination from detailed study of the issues that are not significant or have been covered by earlier environmental review, or approved design considerations, narrowing the discussion of these issues to a brief presentation of why they will not have a significant effect on the environment.

(c) A description of (1) the timing of the preparation of environmental analyses, including phasing if appropriate, (2) variations required in the format of the Environmental Assessment, and (3) the tentative planning and decision making schedule; and

(d) A description of how the analysis will be conducted and the disciplines that will participate in the analysis.

(ii) These written statements shall be reviewed and approved by the Bureau Environmental Officer.

(iii) *Circulation of Scoping Statement.* To assist in the preparation of

an Environmental Assessment, the Bureau Environmental Office may circulate copies of the written statement, together with a request for written comments, within thirty days, to selected federal agencies if that Officer believes comments by such federal agencies will be useful in the preparation of an Environmental Assessment. Comments received from reviewing federal agencies will be considered in the preparation of the Environmental Assessment and in the formulation of the design and implementation of the project, and will, together with the scoping statement, will be included in the project file.

(iv) *Change in Threshold Decision.* If it becomes evident that the action will not have a significant effect on the environment (i.e., will not cause significant harm to the environment), the Positive Threshold Decision may be withdrawn with the concurrence of the Bureau Environmental Officer. In the case of an action included in § 216.2(d)(2), the request for withdrawal shall be made to the Bureau Environmental Officer.

(5) *Preparation of Environmental Assessments and Environmental Impact Statement.* If the PID or PAIP is approved, and the Threshold Decision is positive, or the action is included in § 216.2(d), the originator of the action will be responsible for the preparation of an Environmental Assessment or Environmental Impact Statement as required. Draft Environmental Impact Statements will be circulated for review and comment as part of the review of Project Papers and as outlined further in § 216.7 of those procedures. Except as provided in paragraph (a)(7) of this section, final approval of the PP or PAAD and the method of implementation will include consideration of the Environmental Assessment of final Environmental Impact Statement.

(6) *Processing and Review Within A.I.D.* (i) Initial Environmental Examinations, Environmental Assessments and final Environmental Impact Statements will be processed pursuant to standard A.I.D. procedures for project approval documents. Except as provided in paragraph (a)(7) of this section, Environmental Assessments and final

Environmental Impact Statements will be reviewed as an integral part of the Project Paper or equivalent document. In addition to these procedures, Environmental Assessments will be reviewed and cleared by the Bureau Environmental Officer. They may also be reviewed by the Agency's Environmental Coordinator who will monitor the Environmental Assessment process.

(ii) When project approval authority is delegated to field posts, Environmental Assessments shall be reviewed and cleared by the Bureau Environmental Officer prior to the approval of such actions.

(iii) Draft and final Environmental Impact Statements will be reviewed and cleared by the Environmental Coordinator and the Office of the General Counsel.

(7) *Environmental Review After Authorization of Financing.* (i) Environmental review may be performed after authorization of a project, program or activity only with respect to subprojects or significant aspects of the project, program or activity that are unidentified at the time of authorization. Environmental review shall be completed prior to authorization for all subprojects and aspects of a project, program or activity that are identified.

(ii) Environmental review should occur at the earliest time in design or implementation at which a meaningful review can be undertaken, but in no event later than when previously unidentified subprojects or aspects of projects, programs or activities are identified and planned. To the extent possible, adequate information to undertake deferred environmental review should be obtained before funds are obligated for unidentified subprojects or aspects of projects, programs or activities. (Funds may be obligated for the other aspects for which environmental review has been completed.) To avoid an irreversible commitment of resources prior to the conclusion of environmental review, the obligation of funds can be made incrementally as subprojects or aspects of projects, programs or activities are identified; or if necessary while planning continues, including environmental review, the agreement or other document obligat-

ing funds may contain appropriate covenants or conditions precedent to disbursement for unidentified subprojects or aspects of projects, programs or activities.

(iii) When environmental review must be deferred beyond the time some of the funds are to be disbursed (e.g. long lead times for the delivery of goods or services), the project agreement or other document obligating funds shall contain a covenant or covenants requiring environmental review, including an Environmental Assessment or Environmental Impact Statement, when appropriate, to be completed and taken into account prior to implementation of those subprojects or aspects of the project, program or activity for which environmental review is deferred. Such covenants shall ensure that implementation plans will be modified in accordance with environmental review if the parties decide that modifications are necessary.

(iv) When environmental review will not be completed for an entire project, program or activity prior to authorization, the Initial Environmental Examination and Threshold Decision required under paragraphs (a)(1) and (2) of this section shall identify those aspects of the project, program or activity for which environmental review will be completed prior to the time financing is authorized. It shall also include those subprojects or aspects for which environmental review will be deferred, stating the reasons for deferral and the time when environmental review will be completed. Further, it shall state how an irreversible commitment of funds will be avoided until environmental review is completed. The A.I.D. officer responsible for making environmental decisions for such projects, programs or activities shall also be identified (the same officer who has decision making authority for the other aspects of implementation). This deferral shall be reviewed and approved by the officer making the Threshold Decision and the officer who authorizes the project, program or activity. Such approval may be made only after consultation with the Office of General Counsel for the purpose of establishing the manner in which conditions precedent to dis-

bursement or covenants in project and other agreements will avoid an irreversible commitment of resources before environmental review is completed.

(8) *Monitoring.* To the extent feasible and relevant, projects and programs for which Environmental Impact Statements or Environmental Assessments have been prepared should be designed to include measurement of any changes in environmental quality, positive or negative, during their implementation. This will require recording of baseline data at the start. To the extent that available data permit, originating offices of A.I.D. will formulate systems in collaboration with recipient nations, to monitor such impacts during the life of A.I.D.'s involvement. Monitoring implementation of projects, programs and activities shall take into account environmental impacts to the same extent as other aspects of such projects, programs and activities. If during implementation of any project, program or activity, whether or not an Environmental Assessment or Environmental Impact Statement was originally required, it appears to the Mission Director, or officer responsible for the project, program or activity, that it is having or will have a significant effect on the environment that was not previously studied in an Environmental Assessment or Environmental Impact Statement, the procedures contained in this part shall be followed including, as appropriate, a Threshold Decision, Scoping and an Environmental Assessment or Environmental Impact Statement.

(9) *Revisions.* If, after a Threshold Decision is made resulting in a Negative Determination, a project is revised or new information becomes available which indicates that a proposed action might be "major" and its effects "significant", the Negative Determination will be reviewed and revised by the cognizant Bureau and an Environmental Assessment or Environmental Impact Statement will be prepared, if appropriate. Environmental Assessments and Environmental Impact Statements will be amended and processed appropriately if there are major changes in the project or program, or

if significant new information becomes available which relates to the impact of the project, program or activity on the environment that was not considered at the time the Environmental Assessment or Environmental Impact Statement was approved. When ongoing programs are revised to incorporate a change in scope or nature, a determination will be made as to whether such change may have an environmental impact not previously assessed. If so, the procedures outlined in this part will be followed.

(10) *Other Approval Documents.* These procedures refer to certain A.I.D. documents such as PIDs, PAIPs, PPs and PAADs as the A.I.D. internal instruments for approval of projects, programs or activities. From time to time, certain special procedures, such as those in § 216.4, may not require the use of the aforementioned documents. In these situations, these environmental procedures shall apply to those special approval procedures, unless otherwise exempt, at approval times and levels comparable to projects, programs and activities in which the aforementioned documents are used.

(b) *Pesticide Procedures*—(1) *Project Assistance.* Except as provided in paragraph (b)(2) of this section, all proposed projects involving assistance for the procurement or use, or both, of pesticides shall be subject to the procedures prescribed in paragraphs (b)(1) (i) through (v) of this section. These procedures shall also apply, to the extent permitted by agreements entered into by A.I.D. before the effective date of these pesticide procedures, to such projects that have been authorized but for which pesticides have not been procured as of the effective date of these pesticide procedures.

(i) When a project includes assistance for procurement or use, or both, of pesticides registered for the same or similar uses by USEPA without restriction, the Initial Environmental Examination for the project shall include a separate section evaluating the economic, social and environmental risks and benefits of the planned pesticide use to determine whether the use may result in significant environmental impact. Factors to be considered in

such an evaluation shall include, but not be limited to the following:

- (a) The USEPA registration status of the requested pesticide;
- (b) The basis for selection of the requested pesticide;
- (c) The extent to which the proposed pesticide use is part of an integrated pest management program;
- (d) The proposed method or methods of application, including availability of appropriate application and safety equipment;
- (e) Any acute and long-term toxicological hazards, either human or environmental, associated with the proposed use and measures available to minimize such hazards;
- (f) The effectiveness of the requested pesticide for the proposed use;
- (g) Compatibility of the proposed pesticide with target and nontarget ecosystems;
- (h) The conditions under which the pesticide is to be used, including climate, flora, fauna, geography, hydrology, and soils;
- (i) The availability and effectiveness of other pesticides or nonchemical control methods;
- (j) The requesting country's ability to regulate or control the distribution, storage, use and disposal of the requested pesticide;
- (k) The provisions made for training of users and applicators; and
- (l) The provisions made for monitoring the use and effectiveness of the pesticide.

In those cases where the evaluation of the proposed pesticide use in the Initial Environmental Examination indicates that the use will significantly effect the human environment, the Threshold Decision will include a recommendation for the preparation of an Environmental Assessment or Environmental Impact Statement, as appropriate. In the event a decision is made to approve the planned pesticide use, the Project Paper shall include to the extent practicable, provisions designed to mitigate potential adverse effects of the pesticide. When the pesticide evaluation section of the Initial Environmental Examination does not indicate a potentially unreasonable risk arising from the pesticide use, an Environmental Assessment or Environmental Impact Statement shall nevertheless be prepared if the environmental effects of the project otherwise require further assessment.

(ii) When a project includes assistance for the procurement or use, or both, of any pesticide registered for the same or similar uses in the United States but the proposed use is restrict-

ed by the USEPA on the basis of user hazard, the procedures set forth in paragraph (b)(1)(i) of this section will be followed. In addition, the Initial Environmental Examination will include an evaluation of the user hazards associated with the proposed USEPA restricted uses to ensure that the implementation plan which is contained in the Project Paper incorporates provisions for making the recipient government aware of these risks and providing, if necessary, such technical assistance as may be required to mitigate these risks. If the proposed pesticide use is also restricted on a basis other than user hazard, the procedures in paragraph (b)(1)(iii) of this section shall be followed in lieu of the procedures in this section.

(iii) If the project includes assistance for the procurement or use, or both of:

(a) Any pesticide other than one registered for the same or similar uses by USEPA without restriction or for restricted use on the basis of user hazard; or

(b) Any pesticide for which a notice of rebuttable presumption against re-registration, notice of intent to cancel, or notice of intent to suspend has been issued by USEPA,

The Threshold Decision will provide for the preparation of an Environmental Assessment or Environmental Impact Statement, as appropriate (§ 216.6(a)). The EA or EIS shall include, but not be limited to, an analysis of the factors identified in paragraph (b)(1)(i) of this section.

(iv) Notwithstanding the provisions of paragraphs (b)(1) (i) through (iii) of this section, if the project includes assistance for the procurement or use, or both, of a pesticide against which USEPA has initiated a regulatory action for cause, or for which it has issued a notice of rebuttable presumption against reregistration, the nature of the action or notice, including the relevant technical and scientific factors will be discussed with the requesting government and considered in the IEE and, if prepared, in the EA or EIS. If USEPA initiates any of the regulatory actions above against a pesticide subsequent to its evaluation in an IEE, EA or EIS, the nature of the

action will be discussed with the recipient government and considered in an amended IEE or amended EA or EIS, as appropriate.

(v) If the project includes assistance for the procurement or use, or both of pesticides but the specific pesticides to be procured or used cannot be identified at the time the IEE is prepared, the procedures outlined in paragraphs (b) (i) through (iv) of this section will be followed when the specific pesticides are identified and before procurement or use is authorized. Where identification of the pesticides to be procured or used does not occur until after Project Paper approval, neither the procurement nor the use of the pesticides shall be undertaken unless approved, in writing, by the Assistant Administrator (or in the case of projects authorized at the Mission level, the Mission Director) who approved the Project Paper.

(2) *Exceptions to Pesticide Procedures.* The procedures set forth in paragraph (b)(1) of this section shall not apply to the following projects including assistance for the procurement or use, or both, of pesticides.

(i) Projects under emergency conditions.

Emergency conditions shall be deemed to exist when it is determined by the Administrator, A.I.D., in writing that:

(a) A pest outbreak has occurred or is imminent; and

(b) Significant health problems (either human or animal) or significant economic problems will occur without the prompt use of the proposed pesticide; and

(c) Insufficient time is available before the pesticide must be used to evaluate the proposed use in accordance with the provisions of this regulation.

(ii) Projects where A.I.D. is a minor donor, as defined in § 216.1(c)(12) of this part, to a multi-donor project.

(iii) Projects including assistance for procurement or use, or both, of pesticides for research or limited field evaluation purposes by or under the supervision of project personnel. In such instances, however, A.I.D. will ensure that the manufacturers of the pesticides provide toxicological and environmental data necessary to safeguard

the health or research personnel and the quality of the local environment in which the pesticides will be used. Furthermore, treated crops will not be used for human or animal consumption unless appropriate tolerances have been established by EPA or recommended by FAO/WHO, and the rates and frequency of application, together with the prescribed preharvest intervals, do not result in residues exceeding such tolerances. This prohibition does not apply to the feeding of such crops to animals for research purposes.

(3) *Non-Project Assistance.* In a very few limited number of circumstances A.I.D. may provide non-project assistance for the procurement and use of pesticides. Assistance in such cases shall be provided if the A.I.D. Administrator determines in writing that (i) emergency conditions, as defined in paragraph (b)(2)(i) of this section exists; or (ii) that compelling circumstances exist such that failure to provide the proposed assistance would seriously impede the attainment of U.S. foreign policy objectives or the objectives of the foreign assistance program. In the latter case, a decision to provide the assistance will be based to the maximum extent practicable, upon a consideration of the factors set forth in paragraph (b)(1)(i) of this section and, to the extent available, the history of efficacy and safety covering the past use of the pesticide the in recipient country.

[43 FR 20491, May 12, 1978, as amended at 45 FR 70245, Oct. 23, 1980]

§ 216.4 Private applicants.

Programs, projects or activities for which financing from A.I.D. is sought by private applicants, such as PVOs and educational and research institutions, are subject to these procedures. Except as provided in § 216.2 (b), (c) or (d), preliminary proposals for financing submitted by private applicants shall be accompanied by an Initial Environmental Examination or adequate information to permit preparation of an Initial Environmental Examination. The Threshold Decision shall be made by the Mission Director for the country to which the proposal relates,

if the preliminary proposal is submitted to the A.I.D. Mission, or shall be made by the officer in A.I.D. who approves the preliminary proposal. In either case, the concurrence of the Bureau Environmental Officer is required in the same manner as in § 216.3(a)(2), except for PVO projects approved in A.I.D. Missions with total life of project costs less than \$500,000. Thereafter, the same procedures set forth in § 216.3 including as appropriate scoping and Environmental Assessments or Environmental Impact Statements, shall be applicable to programs, projects or activities submitted by private applicants. The final proposal submitted for financing shall be treated, for purposes of these procedures, as a Project Paper. The Bureau Environmental Officer shall advise private applicants of studies or other information foreseeably required for action by A.I.D.

[45 FR 70247, Oct. 23, 1980]

§ 216.5 Endangered species.

It is A.I.D. policy to conduct its assistance programs in a manner that is sensitive to the protection of endangered or threatened species and their critical habitats. The Initial Environmental Examination for each project, program or activity having an effect on the environment shall specifically determine whether the project, program or activity will have an effect on an endangered or threatened species, or critical habitat. If the proposed project, program or activity will have the effect of jeopardizing an endangered or threatened species or of adversely modifying its critical habitat, the Threshold Decision shall be a Positive Determination and an Environmental Assessment or Environmental Impact Statement completed as appropriate, which shall discuss alternatives or modifications to avoid or mitigate such impact on the species or its habitat.

[45 FR 70247, Oct. 23, 1980]

§ 216.6 Environmental assessments.

(a) *General purpose.* The purpose of the Environmental Assessment is to provide Agency and host country decision makers with a full discussion of

significant environmental effects of a proposed action. It includes alternatives which would avoid or minimize adverse effects or enhance the quality of the environment so that the expected benefits of development objectives can be weighed against any adverse impacts upon the human environment or any irreversible or irretrievable commitment of resources.

(b) *Collaboration with Affected Nation on Preparation.* Collaboration in obtaining data, conducting analyses and considering alternatives will help build an awareness of development associated environmental problems in less developed countries as well as assist in building an indigenous institutional capability to deal nationally with such problems. Missions, Bureaus and Offices will collaborate with affected countries to the maximum extent possible, in the development of any Environmental Assessments and consideration of environmental consequences as set forth therein.

(c) *Content and Form.* The Environmental Assessment shall be based upon the scoping statement and shall address the following elements, as appropriate:

(1) *Summary.* The summary shall stress the major conclusions, areas of controversy, if any, and the issues to be resolved.

(2) *Purpose.* The Environmental Assessment shall briefly specify the underlying purpose and need to which the Agency is responding in proposing the alternatives including the proposed action.

(3) *Alternatives Including the proposed action.* This section should present the environmental impacts of the proposal and its alternatives in comparative form, thereby sharpening the issues and providing a clear basis for choice among options by the decision maker. This section should explore and evaluate reasonable alternatives and briefly discuss the reasons for eliminating those alternatives which were not included in the detailed study; devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits; include the alternative of no action; identify the Agen-

cy's preferred alternative or alternatives, if one or more exists; include appropriate mitigation measures not already included in the proposed action or alternatives.

(4) *Affected environment.* The Environmental Assessment shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration. The descriptions shall be no longer than is necessary to understand the effects of the alternatives. Data and analyses in the Environmental Assessment shall be commensurate with the significance of the impact with less important material summarized, consolidated or simply referenced.

(5) *Environmental consequences.* This section forms the analytic basis for the comparisons under paragraph (c)(3) of this section. It will include the environmental impacts of the alternatives including the proposed action; any adverse effects that cannot be avoided should the proposed action be implemented; the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity; and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented. It should not duplicate discussions in paragraph (c)(3) of this section. This section of the Environmental Assessment should include discussions of direct effects and their significance; indirect effects and their significance; possible conflicts between the proposed action and land use plans, policies and controls for the areas concerned; energy requirements and conservation potential of various alternatives and mitigation measures; natural or depletable resource requirements and conservation potential of various requirements and mitigation measures; urban quality; historic and cultural resources and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures; and means to mitigate adverse environmental impacts.

(6) *List of preparers.* The Environmental Assessment shall list the names and qualifications (expertise,

experience, professional discipline) of the persons primarily responsible for preparing the Environmental Assessment or significant background papers.

(7) *Appendix.* An appendix may be prepared.

(d) *Program assessment.* Program Assessments may be appropriate in order to assess the environmental effects of a number of individual actions and their cumulative environmental impact in a given country or geographic area, or the environmental impacts that are generic or common to a class of agency actions, or other activities which are not country-specific. In these cases, a single, programmatic assessment will be prepared in A.I.D./Washington and circulated to appropriate overseas Missions, host governments, and to interested parties within the United States. To the extent practicable, the form and content of the programmatic Environmental Assessment will be the same as for project Assessments. Subsequent Environmental Assessments on major individual actions will only be necessary where such follow-on or subsequent activities may have significant environmental impacts on specific countries where such impacts have not been adequately evaluated in the programmatic Environmental Assessment. Other programmatic evaluations of classes of actions may be conducted in an effort to establish additional categorical exclusions or design standards or criteria for such classes that will eliminate or minimize adverse effects of such actions, enhance the environmental effect of such action or reduce the amount of paperwork or time involved in these procedures. Programmatic evaluations conducted for the purpose of establishing additional categorical exclusions under § 216.2(c) or design considerations that will eliminate significant effects for classes of actions shall be made available for public comment before the categorical exclusions or design standards or criteria are adopted by A.I.D. Notice of the availability of such document shall be published in the FEDERAL REGISTER. Additional categorical exclusions shall be adopted by A.I.D. upon the approval of the Administrator, and design con-

sideration in accordance with usual agency procedures.

(e) *Consultation and review.* (1) When Environmental Assessments are prepared on activities carried out within or focused on specific developing countries, consultation will be held between A.I.D. staff and the host government both in the early stages of preparation and on the results and significance of the completed Assessment before the project is authorized.

(2) Missions will encourage the host government to make the Environmental Assessment available to the general public of the recipient country. If Environmental Assessments are prepared on activities which are not country-specific, the Assessment will be circulated by the Environmental Coordinator to A.I.D.'s Overseas Missions and interested governments for information, guidance and comment and will be made available in the U.S. to interested parties.

(f) *Effect in other countries.* In a situation where an analysis indicates that potential effects may extend beyond the national boundaries of a recipient country and adjacent foreign nations may be affected, A.I.D. will urge the recipient country to consult with such countries in advance of project approval and to negotiate mutually acceptable accommodations.

(g) *Classified material.* Environmental Assessments will not normally include classified or administratively controlled material. However, there may be situations where environmental aspects cannot be adequately discussed without the inclusion of such material. The handling and disclosure of classified or administratively controlled material shall be governed by 22 CFR Part 9. Those portions of an Environmental Assessment which are not classified or administratively controlled will be made available to persons outside the Agency as provided for in 22 CFR Part 212.

[45 FR 70247, Oct. 23, 1980]

§ 216.7 Environmental impact statements.

(a) *Applicability.* An Environmental Impact Statement shall be prepared when agency actions significantly affect:

(1) The global environment or areas outside the jurisdiction of any nation (e.g., the oceans);

(2) The environment of the United States; or

(3) Other aspects of the environment at the discretion of the Administrator.

(b) *Effects on the United States: Content and Form.* An Environmental Impact Statement relating to paragraph (a)(2) of this section shall comply with the CEQ Regulations. With respect to effects on the United States, the terms environment and significant effect wherever used in these procedures have the same meaning as in the CEQ Regulations rather than as defined in § 216.1(c) (12) and (13) of these procedures.

(c) *Other effects: Content and form.* An Environmental Impact Statement relating to paragraphs (a)(1) and (a)(3) of this section will generally follow the CEQ Regulations, but will take into account the special considerations and concerns of A.I.D. Circulation of such Environmental Impact Statements in draft form will precede approval of a Project Paper or equivalent and comments from such circulation will be considered before final project authorization as outlined in § 216.3 of these procedures. The draft Environmental Impact Statement will also be circulated by the Missions to affected foreign governments for information and comment. Draft Environmental Impact Statements generally will be made available for comment to Federal agencies with jurisdiction by law or special expertise with respect to any environmental impact involved, and to public and private organizations and individuals for not less than forty-five (45) days. Notice of availability of the draft Environmental Impact Statements will be published in the FEDERAL REGISTER. Cognizant Bureaus and Offices will submit these drafts for circulation through the Environmental Coordinator who will have the responsibility for coordinating all such communications with persons outside A.I.D. Any comments received by the Environmental Coordinator will be forwarded to the originating Bureau or Office for consideration in final policy decisions and the

preparation of a final Environmental Impact Statement. All such comments will be attached to the final Statement, and those relevant comments not adequately discussed in the draft Environmental Impact Statement will be appropriately dealt with in the final Environmental Impact Statement. Copies of the final Environmental Impact Statement, with comments attached, will be sent by the Environmental Coordinator to CEQ and to all other Federal, state, and local agencies and private organizations that made substantive comments on the draft, including affected foreign governments. Where emergency circumstances or considerations of foreign policy make it necessary to take an action without observing the provisions of § 1506.10 of the CEQ Regulations, or when there are overriding considerations of expense to the United States or foreign governments, the originating Office will advise the Environmental Coordinator who will consult with Department of State and CEQ concerning appropriate modification of review procedures.

[45 FR 70249, Oct. 23, 1980]

§ 216.8 Public hearings.

(a) In most instances AID will be able to gain the benefit of public participation in the impact statement process through circulation of draft statements and notice of public availability in CEQ publications. However, in some cases the Administrator may wish to hold public hearings on draft Environmental Impact Statements. In deciding whether or not a public hearing is appropriate, Bureaus in conjunction with the Environmental Coordinator should consider:

(1) The magnitude of the proposal in terms of economic costs, the geographic area involved, and the uniqueness or size of commitment of the resources involved;

(2) The degree of interest in the proposal as evidenced by requests from the public and from Federal, state and local authorities, and private organizations and individuals, that a hearing be held;

(3) The complexity of the issue and likelihood that information will be

presented at the hearing which will be of assistance to the Agency; and

(4) The extent to which public involvement already has been achieved through other means, such as earlier public hearings, meetings with citizen representatives, and/or written comments on the proposed action.

(b) If public hearings are held, draft Environmental Impact Statements to be discussed should be made available to the public at least fifteen (15) days prior to the time of the public hearings, and a notice will be placed in the FEDERAL REGISTER giving the subject, time and place of the proposed hearings.

[41 FR 26913, June 30, 1976. Redesignated at 45 FR 70249, Oct. 23, 1980]

§ 216.9 Bilateral and multilateral studies and concise reviews of environmental issues.

Notwithstanding anything to the contrary in these procedures, the Administrator may approve the use of either of the following documents as a substitute for an Environmental Assessment (but not a substitute for an Environmental Impact Statement) required under these procedures:

(a) Bilateral or multilateral environmental studies, relevant or related to the proposed action, prepared by the United States and one or more foreign countries or by an international body or organization in which the United States is a member or participant; or

(b) Concise reviews of the environmental issues involved including summary environmental analyses or other appropriate documents.

[45 FR 70249, Oct. 23, 1980]

§ 216.10 Records and reports.

Each Agency Bureau will maintain a current list of activities for which Environmental Assessments and Environmental Impact Statements are being prepared and for which Negative Determinations and Declarations have been made. Copies of final Initial Environmental Examinations, scoping statements, Assessments and Impact Statements will be available to interested Federal agencies upon request. The cognizant Bureau will maintain a permanent file (which may be part of

§ 217.1

27 CFR Ch. II (4-1-89 Edition)

its normal project files) of Environmental Impact Statements, Environmental Assessments, final Initial Environmental Examinations, scoping statements, Determinations and Declarations which will be available to the public under the Freedom of Information Act. Interested persons can obtain information or status reports regarding Environmental Assessments and Environmental Impact Statements through the A.I.D. Environmental Coordinator.

[45 FR 70249, Oct. 23, 1980]