

**MAHAWELI ENVIRONMENT PROJECT  
(383-0075)**

**MID-TERM EVALUATION**

**Evaluation Team**

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**Colombo, Sri Lanka  
18 November - 6 December 1985**

BASIC PROJECT IDENTIFICATION DATA

1. Country: Sri Lanka
2. Project Title: Mahaweli Environment Project
3. Project Number: 383-0075 (Grant)
4. Project Dates:
  - a. First Project Agreement: September 30, 1982
  - b. Final Obligation: FY 1987 (Planned)
  - c. Project Activity Completion Date (PACD): September 30, 1987
5. Project Funding:
  - a. AID Bilateral Funding (Grant): \$5.0 million
  - b. Other Major Donors: None
  - c. Host Country Counterpart Funds: \$1.9 million

TOTAL: \$6.9 million
6. Mode of Implementation: Ministry of State, Department of Wildlife Conservation; Technical Assistance through PASA with U.S. National Park Service
7. Project Design: Government of Sri Lanka  
USAID/Colombo  
International Union for Conservation of Nature and Natural Resources (IUCN)
8. Responsible Mission Officials:
  - a. Mission Director: S. Littlefield 1982-1984  
F. Correl 1984-present
  - b. Project Officer: V. Fernando 1982-1985  
E. Loken 1985-present
9. Previous Evaluation: None
10. Cost of Present Evaluation:
  - a. Direct hire: AID/ANE/PD  
Natural Resources Advisor  
(USAID/Colombo funds) \$3,500
  - b. Contract: International Science and Technology Institute (ISTI):  
Park Planner (expatriate)  
Wildlife Biologist (expatriate)  
Sociologist (Sri Lankan)  
Secretarial and printing \$28,552

TOTAL \$32,052

## EXECUTIVE SUMMARY

### 1. PROBLEM AND OVERVIEW

The Accelerated Mahaweli Program (AMP) is Sri Lanka's highest priority development activity. More than \$2 billion of multidonor financing is assisting the Government of Sri Lanka (GSL) to bring 117,000 hectares of dry-zone land under permanent irrigation. Approximately one-half million people will be resettled on small farms in the area, leading to increases in agricultural production. Through the completion of four new dams in upper catchments of the Mahaweli River, the country's total electric generating capacity will be more than doubled. The development of infrastructure and service industries accompanying resettlement will create new opportunities for off-farm employment, helping to bring a major portion of the previously underdeveloped dry-zone into the mainstream of Sri Lanka's economy.

A river basin development scheme of this massive scale is certain to generate significant environmental impacts. Major changes in land-use and human settlement will create pressures to utilize natural resources more intensively, natural landscapes will be altered permanently, and a certain amount of environmental degradation will be inevitable.

### 2. U.S. ASSISTANCE

USAID was the first foreign donor to provide assistance to the GSL in addressing the environmental impacts of Mahaweli development. USAID funded an Environmental Assessment of the AMP in 1979-80 and helped the GSL develop an Environmental Plan of Action in 1981. Through its Mahaweli Basin I Loan, USAID provided \$400,000 to the GSL for carrying out activities in the AMP region to monitor and control the movements of problem elephants displaced by agricultural development.

USAID and the GSL approved a five-year Mahaweli Environment Project in September 1982 to respond to the specific recommendations on wildlife conservation and management contained in the AMP Environmental Assessment and Plan of Action. The project was designed specifically to be part of the overall development effort in the Mahaweli. Its purpose was to "ensure the stability of irrigated agricultural development and human settlements in the AMP area by providing alternative protected habitats for displaced wildlife in a manner that is ecologically sound and socially acceptable."

The project was designed to improve the institutional capacity of the Department of Wildlife Conservation (DWLC) to continue managing Mahaweli protected areas beyond the life of the project. The total project budget was \$6.9 million, of which \$5 million was a grant by USAID.

### 3. PURPOSE OF THE EVALUATION

This mid-term evaluation is the first of two planned evaluations of the Mahaweli Environment Project (383-0075). The objective of the evaluation is to review the progress made toward attaining planned outputs and end-of-project status conditions, and to recommend changes in project implementation if warranted and practicable.

### 4. FINDINGS

While there has been significant progress in legally establishing the Mahaweli protected areas, little or no progress can be reported on the development of buffer zones, habitat enrichment, and construction of physical infrastructure (buildings, roads). Only 6 percent of AID funds have been disbursed after three years of project implementation. The delays have been caused by problems in project administration, changes in both GSL and USAID management personnel, difficulties in tendering and contracting for local procurement, and the lack of a planning framework for site development. Because the construction component is beyond the present capacity of DWLC to implement, development of physical infrastructure should be transferred to the Mahaweli Authority of Sri Lanka, which has proven expertise in this area.

Conservation of wildlife in the AMP area is being inadequately addressed, due to the lack of trained personnel in the DWLC and slow implementation of the Wildlife Conservation Unit as planned in the PP. Although technical expertise and resources are available from Sri Lankan universities and the private sector, the DWLC has not encouraged cooperation with these groups.

The technical assistance and training component has worked relatively well, but could be improved. In-country workshops implemented through a PASA arrangement with the U.S. National Park Service (USNPS) have demonstrated great potential for developing DWLC personnel, but results have been less than satisfactory because of poor coordination, participation and follow-through in-country. This element of the project could be greatly improved by providing a long-term Technical Advisor to facilitate preparation for and application of USNPS contributions.

Local participation of AMP people in the project has been far less than envisaged in the PP, largely due to inappropriate DWLC policies, lack of a rural sociologist in DWLC, and delays in implementing the capital investment portions of the project. Greater cooperation among DWLC, other GSL agencies, and PVOs would enhance this element of the project.

Administration of the project has been a source of major difficulties, with no clear authority established, sporadic support from DWLC, and poor coordination among DWLC, Mahaweli Authority of Sri Lanka, and other involved institutions. Key elements of

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improving project administration include clarifying authority and responsibility in Colombo and decentralizing authority for field level decisions to field personnel.

The internal security situation in Sri Lanka has had a major impact on the project. Northern and eastern portions of the AMP area have become vulnerable to insurgent activity, affecting the establishment and development of Somawathiya Sanctuary as a national park. DWLC personnel no longer go to Somawathiya; however, most of the remaining protected areas in the AMP region are reasonably secure. This situation presents both a dilemma for DWLC and an opportunity to redirect project resources planned for development of Somawathiya to cover the costs of recommended actions indicated in this mid-term evaluation.

#### 5. PROJECT DESIGN IMPLICATIONS

The evaluation has identified critical areas for improvement that entail adjustments in project design, administration and implementation. The project purpose as stated in the PP is unrealistic; the purpose and end-of-project status conditions (EOPS) should be modified to place greater emphasis on developing a strong interagency mechanism to support the DWLC in planning and managing protected areas within the AMP land-use system (revised EOPS are indicated in Part II of the evaluation report). The project implementing mechanism requires strengthening, which will call for changes in GSL administrative arrangements. Progress in constructing park infrastructure will require MASL to take the lead in coordinating and supervising this project component. The internal security situation warrants a redirection of project resources planned for development of Somawathiya to cover the costs of the recommendations outlined in the evaluation.

#### 6. RECOMMENDATIONS

The project should continue, with a major effort by the GSL and USAID in 1986 to correct implementation problems. A full-time Project Director in Colombo and a DWLC Deputy Director for the Mahaweli region should be appointed by the Ministry of State as soon as possible to overcome shortcomings in project administration. A long-term Technical Advisor is required to help coordinate technical assistance and training contributions in-country; this should be facilitated through an amendment of the existing PASA with the U.S. National Park Service. The project's construction component should be transferred as a package to MASL, with major progress expected by the end of 1986. Inputs planned for development of Somawathiya should be redirected to other priority uses identified in the evaluation.

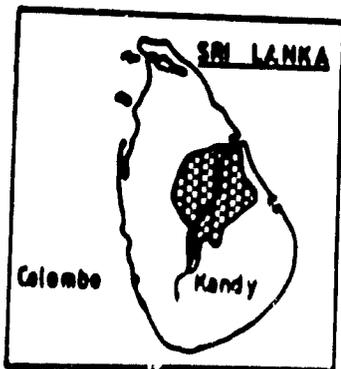
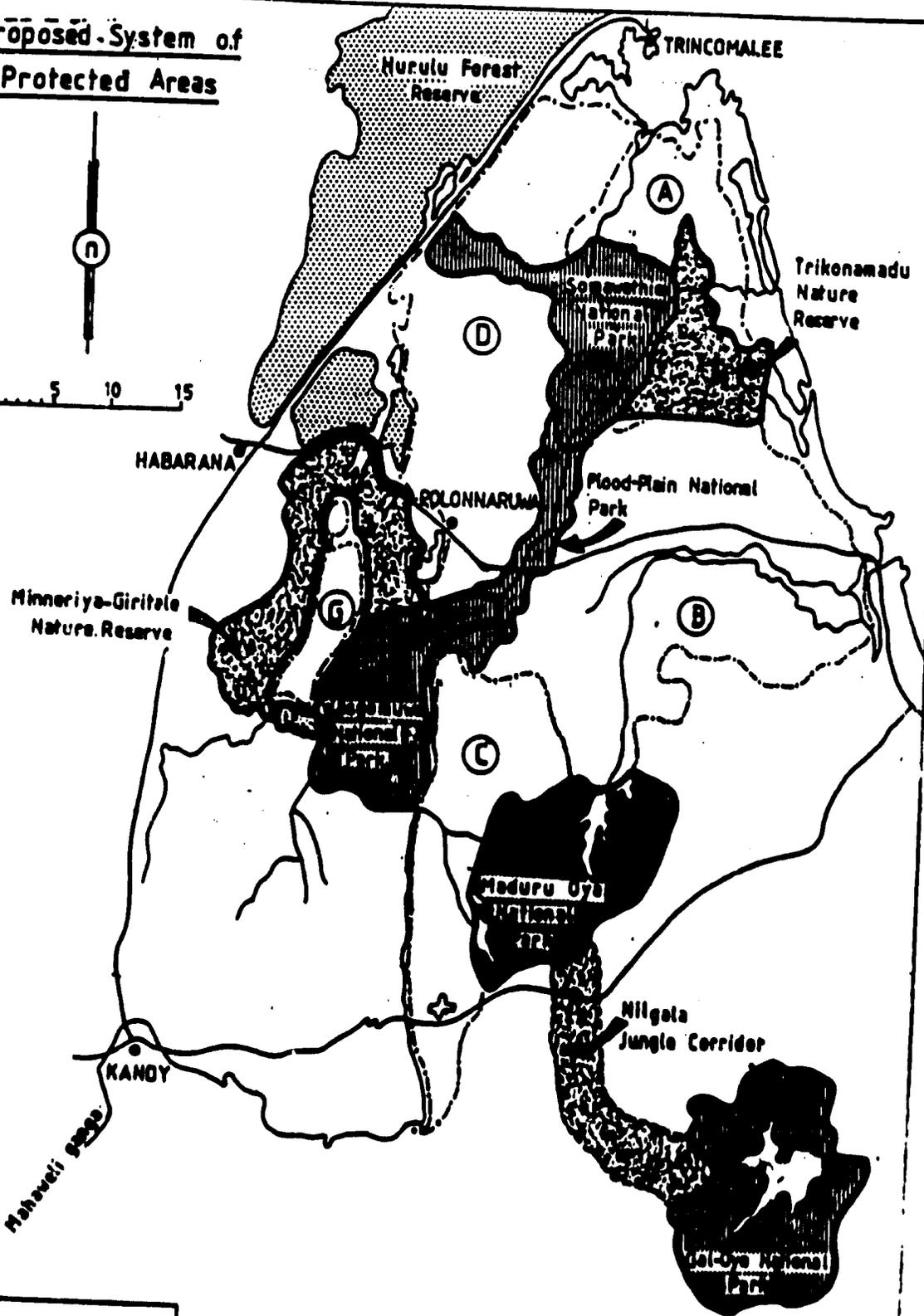
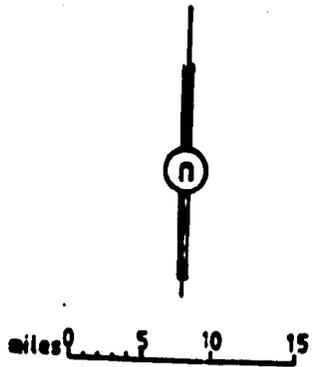
If substantial progress is indicated by the end of 1986, USAID should extend the project by two years -- to September 1989 -- to make up for the initial slow pace of implementation in 1982-1985.

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## ACRONYMS

AGA	Assistant Government Agent
AID/W	U.S. Agency for International Development/Washington DC
AMP	Accelerated Mahaweli Development Program
DWLC	Department of Wildlife Conservation
EOPS	End of Project Status
GSL	Government of Sri Lanka
IUCN	International Union for Conservation of Nature and Natural Resources
LPO	Life of Project
MASL	Mahaweli Authority of Sri Lanka
MEA	Mahaweli Economic Authority
MECA	Mahaweli Economic and Construction Agency
MEP	Mahaweli Environment Project
NCS	National Conservation Strategy
NGO	Non-governmental Organization
PACD	Project Activity Completion Date
PASA	Participating Agency Service Agreement
PP	Project Paper
PVO	Private Voluntary Organization
TA	Technical Assistance
TAMS	Tippetts-Abbett-McCarthy-Stratton
USAID	U.S. Agency for International Development/Colombo Mission
USNPS	U.S. National Park Service
WMU	Wildlife Management Unit
WTC	Wildlife Training Center
WWF	World Wildlife Fund

**Proposed System of Protected Areas**



**LEGEND**

- Park Boundaries
- - - System Boundaries
- ⊙ Irrigation Systems

**ACCELERATED MAHAWELI PROJECT**

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I.1. INTRODUCTION

The Mahaweli Environment Project (MEP) provides important benefits at local, regional, national and international levels:

- Locally, it helps to control the depredations of elephants on the crops being grown in the agricultural lands newly-created by the Accelerated Mahaweli Development Program, it provides employment, and it provides opportunities for private enterprise initiatives in tourism and related industries.
- Within the Mahaweli region, it provides a system of protected areas which contribute to balanced land-use in the Mahaweli basin, helping to protect watersheds, control bank erosion, and protect fisheries -- all of considerable economic importance.
- Nationally, it helps to develop the capacity of the Department of Wildlife Conservation (DWLC) to manage more effectively the wildlife resources of the country, makes a significant contribution to the nation-wide effort to maintain biological diversity, and demonstrates GSL concern for environmental issues.
- Internationally, it provides an outstanding example of integrated land-use development, whereby environmental considerations are given appropriate attention as part of a major development scheme. It is often quoted as USAID's outstanding project in contributing to the Congressional mandate on biological diversity, and is viewed with great interest by a number of national and international NGOs.

Many of these benefits are only potential benefits unless considerable effort is devoted to making them real.

I.1. Project Objectives

The MEP is designed specifically to be part of the overall development effort in the Mahaweli, contributing in fundamental ways to the overall success of the major government capital investments in waterworks and new agricultural lands.

THIS REQUIRES A NEW PERCEPTION OF PROTECTED AREAS WHICH IS DIFFERENT FROM THE TRADITIONAL VIEW OF SRI LANKAN NATIONAL PARKS SUCH AS YALA AND WILPATTU.

The project is designed to institute effective management of wildland resources in strategic areas of the AMP so as to conserve wildlife, protect investments in irrigation works and human settlements, and bring the benefits of nature conservation directly to the local people. The latter two of these elements are new

management objectives of DWLC, based on the importance of integrating protected area management into the overall Mahaweli development effort.

Specific objectives, designed to be attained during the life of the MEP and to contribute to the End-of-Project Status (EOPS), are identified in the PP:

- National Park Infrastructure Development. Develop four protected areas (Somawathiya, Wasgomuwa, Maduru Oya, and Flood Plains) totalling 182,000 hectares, including surveying and establishing 500 miles of boundaries, developing 700 acres of buffer zones and rehabilitated habitat, developing 95 miles of new roads and upgrading 150 miles of existing roads, constructing 90,000 square feet of personnel housing and administrative buildings, and establishing 380 signboards along the park perimeters.
- Strengthening the DWLC Planning and Management System. Expand the cadre of DWLC personnel by approximately 225 employees, provide technical assistance totalling 37 person-months, prepare a comprehensive systems plan for the development of parks and protected areas, initiate a detailed management plan for each protected area, and decentralize park administration with a regional headquarters.
- Developing DWLC Research and Training Capability. Establish a Wildlife Conservation Unit (WCU) to undertake surveys and manage elephant problems, establish a Wildlife Training Center (WTC) for DWLC personnel and to prepare conservation education programs for the public, and develop materials and media for a national public awareness campaign to develop support for national parks and other conservation activities.

This report contains the findings of the Evaluation Team, related to the progress in attaining each of these objectives.

## 1.2. Summary of Findings

In summary, the team found that:

- There is significant progress in legally establishing three of the protected areas -- Maduru Oya, Wasgomuwa, and Flood Plains -- while all work on the fourth area -- Somawathiya -- has been halted because of the security situation.
- While there is some progress in rehabilitating existing infrastructure, little or no progress can be reported on the major construction elements of the project. The delays have

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been caused by changes in top administration, changes in USAID personnel involved in the project, changes in site plans, difficulties involved in the tendering process on the part of both USAID and GSL, and the security situation.

- One draft management plan has been prepared (for Maduru Oya), but there has been no progress toward the preparation of the systems plan which was intended to provide the basis for the entire planning effort.
- Conservation of wildlife is being inadequately addressed, due to lack of personnel and slow implementation of the Wildlife Conservation Unit as outlined in the PP; habitat enrichment has not been successful, but reforestation efforts by Nation Builders was successful in 1983 and 1984, before stagnating in 1985 due to administrative problems.
- There is an excellent, highly motivated cadre of trained DWLC personnel in the region, but the level of staffing is inadequate to meet current needs; of the 225 new staff envisaged in the PP, 85 positions have been approved by Treasury and 79 are in place.
- The technical assistance component (through a PASA with USNPS) has worked relatively well in that each workshop has proceeded in order, following a delay of over 18 months in getting started due to USAID/GSL administrative problems. While the individuals directly involved in the workshops undoubtedly benefitted from the training, the specific results of the workshops do not appear to have had significant impact on DWLC; follow-up by DWLC has been poor and workshop reports have not been distributed to key people.
- The out-of-country training element has proceeded according to schedule, with six individuals receiving training with USNPS, three attending the International Seminar on National Parks Management, and four receiving longer-term training in Indonesia and Tanzania. In-country training requires more attention, following a recent workshop on the subject.
- Local participation has been far less than envisaged in the PP, largely due to inappropriate policies and delays in implementing the capital investment portions of the project. However, orders have recently been received by DWLC officers in the MEP project area to hire 75 local people as casual laborers by 1 December 1985.
- Education programs for local villagers seems to have progressed with encouraging results. There have been 18 school programs; leaflets and posters have been produced (in collaboration with Nation Builders); a series of radio programs have been produced,

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- been caused by changes in top administration, changes in USAID personnel involved in the project, changes in site plans, difficulties involved in the tendering process on the part of both USAID and GSL, and the security situation.
- One draft management plan has been prepared (for Maduru Oya), but there has been no progress toward the preparation of the systems plan which was intended to provide the basis for the entire planning effort.
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  - Education programs for local villagers seems to have progressed with encouraging results. There have been 18 school programs; leaflets and posters have been produced (in collaboration with Nation Builders); a series of radio programs have been produced,

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including 6 ten-minute scripts and 6 thirty-minute scripts. However, the DWLC Assistant Director for Education needs more assistance and better support from local PVOs.

- Administration of the project has been a source of major difficulties, with no clear authority established, sporadic support from DWLC, and poor coordination between DWLC, MASL, and other involved institutions.

### 1.3. Summary of First Priority Recommendations

The recommendations of this report are divided into two levels of priority, with first priority going to general, broad areas where improvements are required. The second priority recommendations are aimed at overcoming specific bottlenecks, making minor modifications, or supporting the implementation of the first priority recommendations. The first priority recommendations are listed below in order of importance (the numbering system used in Part II of the text follows each recommendation):

- 1) USAID IN CONJUNCTION WITH THE GSL SHOULD UNDERTAKE A THOROUGH REASSESSMENT OF PROJECT MANAGEMENT NEEDS IN RELATION TO PRESENT INTERAGENCY ADMINISTRATIVE ARRANGEMENTS AND THE COMPARATIVE STRENGTHS OF MINISTRY OF STATE, DWLC, MASL, AND MEA. THIS REASSESSMENT SHOULD BE BASED ON EVALUATION TEAM FINDINGS AND RECOMMENDATIONS AND CREATE A DIALOGUE AT THE HIGHEST APPROPRIATE GSL LEVEL TO SEEK AN IMPROVED PROJECT ADMINISTRATIVE AND IMPLEMENTING MECHANISM. (Recommendation 7.1.1)
- 2) THE SECRETARY, MINISTRY OF STATE SHOULD ESTABLISH THE POST OF DWLC DEPUTY DIRECTOR OF MAHAWELI, WITH FULL AND INDEPENDENT AUTHORITY UNDER THE PROJECT DIRECTOR OF ALL MEP ACTIVITIES IN THE FIELD (AS PROVIDED FOR UNDER ARTICLE 69 OF THE FAUNA AND FLORA PROTECTION ORDINANCE), WITH TECHNICAL ADVICE PROVIDED BY THE MEP TECHNICAL ADVISOR. (Recommendation 7.2.1)
- 3) USAID AND THE GSL SHOULD AGREE TO INCREASE THE TECHNICAL ASSISTANCE ELEMENT OF THE PROJECT, INCLUDING CONSIDERATION OF ASSIGNING A LONG-TERM (TWO YEARS) TECHNICAL ADVISOR WHO COULD PROVIDE OVERALL COORDINATION TO TA CONTRIBUTIONS, ADVISE THE NEWLY-ESTABLISHED WILDLIFE MANAGEMENT UNIT, PROMOTE FOLLOW-UP OF RECOMMENDATIONS, AND RECOMMEND ON IMPLEMENTATION OF MANAGEMENT PLANS. (Recommendation 5.2.1)
- 4) THE SYSTEMS PLAN SHOULD BE PREPARED AS SOON AS POSSIBLE, USING OUTSIDE TECHNICAL ASSISTANCE ASSIGNED TO THE MEP UNDER A MODIFICATION TO THE PASA WITH USNPS. THIS PLAN, ONCE APPROVED BY THE DIRECTOR OF DWLC AND OTHER INTERESTED PARTIES, SHOULD

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BE THE GUIDING DOCUMENT TO DETERMINE STATUS AND OBJECTIVES FOR THE VARIOUS PROTECTED AREAS, LOCATE REGIONAL HEADQUARTERS, DEFINE LOCATIONS AND APPROPRIATE ACTIVITIES FOR BUFFER ZONES (see 2.2.1), ADVISE ON LOCATIONS OF ELECTRIC FENCES TO CONTROL ELEPHANT MOVEMENTS (see 4.1.2), AND ADVISE ON THE USE OF ELEPHANT BARRIERS (see 4.1.3). THE TARGET DATE FOR COMPLETION OF THE SYSTEMS PLAN SHOULD BE JUNE 1986. (Recommendation 3.1.1)

- 5) THE DWLC SHOULD ESTABLISH A WILDLIFE MANAGEMENT UNIT WITH ITS PRIMARY AREA OF OPERATION IN AGRICULTURAL PRODUCTION AREAS OUTSIDE THE ESTABLISHED WILDLIFE RESERVE SYSTEM. THE SUGGESTED COMPOSITION OF THE UNIT AND AREAS OF RESPONSIBILITY ARE OUTLINED IN ANNEX 9. (Recommendation 4.1.1)
- 6) ALL CONSTRUCTION OF PHYSICAL INFRASTRUCTURE SHOULD BE HANDLED AS A PACKAGE BY MASL, BECAUSE OF ITS PROVEN EXPERTISE IN THIS FIELD; THE SCALE OF CONSTRUCTION ACTIVITIES APPEARS FAR BEYOND THE SCOPE OF DWLC AT PRESENT AND THERE IS LITTLE JUSTIFICATION TO BUILD WHAT IS ONLY A TRANSITORY REQUIREMENT. MAJOR PROGRESS IN CONSTRUCTION SHOULD BE EXPECTED BY NO LATER THAN THE END OF 1986, WITH COMPLETION BY MID-1988. (Recommendation 2.3.1)
- 7) USAID SHOULD REALLOCATE FUNDS PREVIOUSLY ALLOCATED TO DEVELOPMENT OF SOMAWATHIYA NATIONAL PARK TO COVER THE COSTS OF THE RECOMMENDATIONS CONTAINED IN THIS EVALUATION. (Recommendation 8.1.1 and 9.2.1)
- 8) USAID SHOULD CONDUCT AN EXTERNAL REVIEW OF THE MEP IN LATE 1986, TO ASSESS STATUS OF IMPLEMENTATION. (Recommendation 9.2.2)
- 9) PROVIDED THAT APPROPRIATE PROGRESS CAN BE MADE IN OVERCOMING THE PROBLEMS IDENTIFIED BY THE EVALUATION, USAID AND GSL SHOULD EXTEND THE PROJECT LIFE BY TWO YEARS, TO THE END OF 1989, IN ORDER TO MAKE UP FOR THE NUMEROUS CHANGES OF TOP PERSONNEL WHICH HAVE PLAGUED THE PROJECT, DELAYS INVOLVED IN USAID AND GSL TENDERING PROCEDURES, AND THE SECURITY SITUATION. INDICATORS OF PROGRESS ARE SPECIFIED IN ANNEX 7. (Recommendation 9.2.3)
- 10) USAID AND THE GSL SHOULD PROMOTE THE WIDE DISTRIBUTION OF THE REPORT FROM THE MEP EVALUATION, IN ORDER TO STIMULATE WIDER PUBLIC INTEREST, DEBATE, AND CONCERN. (Recommendation 9.2.4)

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#### 1.4. Summary of Second Priority Recommendations

The following second priority recommendations are supported by findings contained in the evaluation and its attached annexes. They are aimed at overcoming specific bottlenecks, making minor modifications, or supporting the implementation of the first priority recommendations. The second priority recommendations, following the numbering system used in the text, are:

##### Mahaweli Parks Establishment and Physical Development

- 2.1.1. The final determination by DWLC of the appropriate designation of Protected area category for each area should await the preparation of the systems plan (see 3.1).
- 2.2.1. Areas appropriate for each sort of buffer zone should be identified by the systems plan, which would also contain recommendations on appropriate development and administrative structures for each buffer zone.
- 2.2.2. A workshop dealing specifically with buffer zones should be designed and implemented in mid-1986, and should involve Ministry of Agriculture, Ministry of Mahaweli, Forest Department, universities, and other relevant institutions. The workshop would produce specific recommendations on buffer zone policies and means of control.
- 2.3.2. DWLC should ensure that MECA and all contractors adhere to aesthetic specifications designated by DWLC, using colors and styles which are appropriate to the particular situation.
- 2.3.3. MECA should ensure that physical structures are designed and located according to a management plan prepared by DWLC which specifies the exact purpose of each building or road.

##### Park Planning and Management

- 3.1.2. USAID and GSL, in collaboration with USNPS, should identify and recruit a protected area systems planner for a period of four months to coordinate preparation of the systems plan (see Annex 13 for terms of reference for the Systems Planner).
- 3.1.3. At the end of the third month of the assignment of the Systems Planner, DWLC should convene a workshop to review the draft systems plan. This workshop should include all institutions involved in the preparation of the plan, including the Ministry of State and the Mahaweli Ministry. The output from the workshop will be an agreed protected area systems plan for the Mahaweli basin.

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- 3.1.4. DWLC should postpone the preparation of further area-specific management plans until after the systems plan is completed.
  - 3.2.1. DWLC should postpone the USNPS planning workshop scheduled for January 1986 until the systems plan is in place. The draft Maduru Oya Management Plan should be reviewed in relation to the systems plan once it is developed.
  - 3.2.2. DWLC should ensure that future management plans include contributions from all interested parties, including government agencies, academic institutions, local people, and PVOs.
  - 3.2.3. The management plans prepared by DWLC for each wildlife reserve should include procedures for actively managing essential habitats of endangered and threatened species (see section 4.2).

#### Conservation of Wildlife

- 4.1.2. The DWLC and MASL should send key personnel to examine the most recent advances in the construction of electric fences that will control the movements of wildlife, including elephants. Both India and Malaysia have advanced the technology so that electric fencing has become an effective barrier to elephant movements.
- 4.1.3. The DWLC should continue to experiment in the development of elephant-barriers as they have been doing. These should be constructed of materials such as stone, brick or cement, and should not harm the animals.
- 4.1.4. The DWLC should contract appropriate expertise to survey existing Sri Lankan national parks to determine where boundaries are effective in reducing movements of the animals out of the reserve and into agricultural production areas. The ways and means found to establish effective boundaries should be duplicated to the extent possible in Mahaweli. (A scope of work is outlined in Annex 10.)
- 4.2.1. The DWLC should initiate the monitoring program for threatened and endangered species and their habitats that is called for in the PP. Each national park should have a staff ecologist and two ecological field assistants (one more than originally called for in the PP). Each monitoring team should have its own transport, and employ local people to assist in their activities. People who have lived in the areas for many years can provide useful insights into the distribution and life history processes of the animals they know.

- 4.2.2. The DWLC should encourage and sponsor university research in wildlife reserves, especially to study the life history processes of threatened and endangered species and to assist in establishing carrying capacities and critical habitats. The Sri Lankan universities have much expertise upon which the DWLC can and should draw.
- 4.3.1. The attempt to establish fodder grass in abandoned chena areas in the wildlife reserved should be discontinued.
- 4.3.2. The DWLC should use methods such as the establishment of a system of small tanks and the use of salt to refocus the centers of activity of wildlife (especially elephants) using the reserves. This will require some experimentation to determine what works best and this can be done by the staff ecologist and the monitoring teams in each reserve.
- 4.4.1. Establish the Wildlife Management Unit to operate within the agricultural production areas of the AMP area. See 4.1.1 and Annex 9 for details of its composition.
- 4.4.2. The job of capturing the number of elephants that will have to be moved from the AMP area is too large for one unit and procedures to allow the private sector to contribute to this conservation effort should be assessed and implemented if feasible.

#### Institution-strengthening

- 5.1.1. During the course of 1986, provided Treasury approval can be obtained, the 5 remaining professional positions called for in the PP -- Legal Officer, Training Officer, Ecologist, Rural Sociologist, and Park Engineer -- should be filled, and two Ecological Field Assistants should be hired for each reserve. In the second half of 1986, the newly-hired professional staff should be sent on a five-week training course organized by the USNPS.
- 5.3.1. DWLC, in collaboration with USNPS, should design appropriate specialized training courses for the four Assistant Directors involved in the MEP and implement the training during the course of 1986.
- 5.5.1. USAID and the GSL should enhance the personnel development element of the project, including implementing in 1986 the Wildlife Training Center called for in the PP. A full-time Training Officer (separate from the Education Officer) should be appointed to coordinate all in-service training, develop a long-term DWLC Training Plan, and assist with USNPS workshops.

### Local Participation

- 6.1.1. The DWLC should ensure that local people are hired as casual laborers and permit them to work for periods longer than the current limit of three months, and give them prospects of being favorably considered for permanent staff when positions become available.
- 6.1.2. With the hiring of the Rural Sociologist (see 5.1.1), DWLC should modify its policies dealing with local people and orient its staff towards facilitating a positive social environment. The Rural Sociologist should work to encourage the formation of local voluntary groups for environmental protection to ensure greater understanding, effective communication, and local participation in park development activities.
- 6.1.3. DWLC should ensure greater supervision of PVO contractors so that under-reporting of attendance, underpayment, etc. can be kept under check, and encourage the contracting agencies to play a useful role in making people aware that national parks are useful to society.
- 6.2.1. DWLC, through its Rural Sociologist, should conduct appropriate training and orientation for its MEP staff on working with people in and around the parks so that the people are seen as beneficiaries and not primarily as problems. The sociologist should ensure that DWLC cooperates with other agencies on behalf of AMP people.
- 6.3.1. For all future management plans, local government officials and citizens groups should participate in the planning process.
- 6.4.1. The DWLC should evolve its own public awareness program, using the Assistant Director for Education and the Rural Sociologist to enlist local participation in the design of messages. Different target groups should be identified, with different messages developed to reach each audience. Public media should be involved as much as possible, and resource persons should be drawn from teaching institutions, research institutes, and other institutions (both formal and informal) concerned with environment and rural development.

### Project Administration and Management

- 7.1.2. The Secretary, Ministry of State should appoint a full-time Project Director to have full administrative authority over all aspects of the project and exercise control over the existing MEP Implementation Unit. The Project Director would report to the Secretary through the Director DWLC.

- 7.1.3. The Ministry of State should strengthen the MEP Implementation Unit by adding an engineer (possibly seconded from MASL) and a contracting officer.
- 7.1.4. The Secretary, Ministry of State should reactivate and strengthen the MEP Interagency Steering Committee under his Chairmanship. Membership on the Steering Committee should include the Director DWLC and the USAID Project Manager.
- 7.3.1. The Ministry of State should support financial management by centralizing all project accounting within the MEP Implementation Unit under the direction of the Project Director. The full-time accountant in the Unit should have ready access to all DWLC financial receipts.
- 7.5.1. USAID in collaboration with the MEP Implementation Unit should review the quarterly reporting system and decide on important indicators of progress -- keyed to the 1986 implementation schedule -- that can be incorporated in a new project monitoring system. Information from the monitoring system should be systematically reviewed for its accuracy and utility to project management.

## I.6. BACKGROUND

### 6.1. Pre-project Conditions

The Accelerated Mahaweli Program (AMP) is the highest priority development activity of the Government of Sri Lanka. When completed in 1987, the AMP will bring 117,000 hectares of land under permanent irrigation, providing for increased agricultural production and the resettlement of approximately one-half million people on small farms in the area. Through the completion of four new dams in upper catchments of the Mahaweli River, the country's total electric generating capacity will be more than doubled. The development of infrastructure and service industries in the AMP region is expected to create significant new opportunities for off-farm employment, helping to bring a major part of the previously underdeveloped dry-zone into the mainstream of Sri Lanka's economy.

The Environmental Assessment of the AMP (TAMS, 1980) specified the impacts that were likely to accompany the development of the water resources of the Mahaweli Basin. Among the major impacts reported by TAMS was the inevitable loss of natural areas in the basin, including extensive tracts of prime habitat for elephants and other wildlife. Unless compensated for in some way, the loss of habitat was expected to increase damage by displaced wildlife to crops in the newly settled farmlands. The environmental assessment also stressed the benefits of existing natural areas in protecting watersheds and stabilizing river banks, which would help to control

sedimentation rates and lengthen the life of the AMP reservoirs and downstream irrigation works.

An Environmental Plan of Action (TAMS, 1981) was prepared to guide the GSL in implementing a number of activities aimed at taking advantage of the positive impacts of the AMP and mitigating adverse impacts. A priority recommendation was that the GSL establish a system of protected areas in the basin to provide contiguous habitat for wildlife that otherwise would be displaced and/or eliminated. It was concluded that wildlife as well as people in the AMP area would benefit from having the protected areas managed in a manner that reduces encroachment by wildlife onto agricultural land.

#### 6.2. USAID Assistance

USAID was the first foreign donor to provide assistance to the GSL in addressing the environmental impacts of AMP development. USAID funded the AMP Environmental Assessment as well as the Environmental Plan of Action, which has led to support of environmental mitigation measures for the AMP by other donors such as the World Bank (fuelwood plantations and potable water projects). USAID provided \$400,000 in its Mahaweli Basin I Loan to help develop GSL capacity to monitor and control the movements of problem elephants in the AMP area. Also, in 1980 USAID approved a five-year Reforestation and Watershed Management Project, which focuses on improving institutional capability in the Forest Department to conserve and stabilize upland watershed areas (including portions of the AMP)

The Mahaweli Environment Project (MEP) was developed and funded by USAID in 1982 to respond to the GSL's request for long-term assistance in following the specific recommendations on wildlife conservation and management contained in the AMP Environmental Assessment and Plan of Action. The MEP was designed with technical assistance from the International Union for Conservation of Nature and Natural Resources (IUCN); a two-stage technical analysis concluded that the MEP should develop the institutional capability of the Department of Wildlife Conservation (DWLC) to plan and manage a system of Mahaweli protected areas that bring the benefits of nature conservation to the people of the AMP area.

Potential beneficiaries were to include people employed by the DWLC for casual labor and local staffing, farmers whose crops would be better protected from damage by elephants and other wildlife, villagers and townspeople who would find new opportunities in tourism industries, and the general public who would benefit from greater access to outdoor recreation and appreciation of preserving part of Sri Lanka's natural and cultural heritage.

### 6.3. GSL Situation

Financial: Changes in Sri Lanka's economic climate during the early 1980's forced the GSL to reduce its budget for capital expenditures and to impose construction and personnel hiring freezes. These factors have directly impacted on the ability of the GSL to staff and implement project activities. Although construction and hiring restrictions have recently been lifted, the MEP continues to be affected by long delays in Treasury approval of planned DWLC staff increases as well as uncertain capacity to absorb the project's recurrent costs.

Political: The civil disturbances of mid 1983 to present have had a major impact on the project. Northern and eastern portions of the AMP area have become vulnerable to insurgent activity, affecting the establishment and development of the MEP protected areas. The far eastern sections of Maduru Oya National Park, the northern reaches of Flood Plains National Park, and the entire area of the present Somawathiya Sanctuary (proposed as a national park) are considered by DWLC personnel to be insecure. Normal patrolling and law enforcement operations in Somawathiya have become impossible to maintain and DWLC personnel have opted to remove themselves to villages outside the sanctuary.

GSL Development Strategy: The GSL is in the process of developing a National Conservation Strategy (NCS) under the coordination of the Central Environmental Authority. A number of development sector profiles are being prepared by different government units and resource persons participating on the NCS Task Force. The culmination of this exercise over the next several months will be a draft document outlining priority conservation objectives to be incorporated in the development planning process. It is anticipated that this ultimately will be passed by Cabinet and Parliament as an expression of GSL development policy.

The MEP is Sri Lanka's single most visible development activity that incorporates conservation goals and objectives as envisaged in the NCS process. As such, the MEP may offer valuable insight in demonstrating the means by which policy recommendations generated by the NCS can be attained through interagency cooperation.

### 1.3. EVALUATION METHODOLOGY

This mid-term evaluation is the first of two scheduled evaluations for the Mahaweli Environment Project (383-0075). The objective of the evaluation is to review the progress made toward attaining planned project inputs, outputs and purpose and to recommend changes in project implementation if appropriate.

The evaluation was conducted by Mike Philley, Natural Resources Advisor, AID/ANE/PD (Team Leader); Jeff McNeely, Director of Program and Policy, IUCN (Park Planner); John Seidensticker, Assistant Curator of Mammals, National Zoological Park, Smithsonian Institution (Wildlife Biologist); Gamini Wickramasinghe, Research and Training Officer, Agrarian Research and Training Institute, Colombo (Sociologist); Ranjit Wijewansa, Director of Environmental Management, Central Environmental Authority (GSL Representative); and Malwila Dissanayake, Environmental Engineer, USAID Colombo (Mission Representative). This team worked closely with GSL officials from the Ministry of State, Department of Wildlife Conservation, and Mahaweli Authority of Sri Lanka and with the USAID Project Manager, Eric Loken.

Team findings are based on a review of project documents, interviews with those directly involved with the project, and field observations in the Accelerated Mahaweli Program region including site visits to three national parks -- Wasgomuwa, Maduru Oya, and Flood Plains. The team was accompanied to the field by Rodney St. John (Program Officer, Project Implementation Unit) and Malcolm Jansen (Environmental Officer, Mahaweli Economic Agency). The four DWLC Assistant Directors for the Mahaweli region assisted the team while in the field.

A detailed description of evaluation methodology is contained in Annex 3 (Evaluation Work Plan and Schedule). Annex 14 includes the names and positions of those interviewed. The team discussed their findings and recommendations with USAID and GSL officials (see Annex 1 for dates of briefings).

The evaluation was conducted from November 18 to December 6, 1985.

## PART II. PROJECT EVALUATION

The reference point for the MEP Mid-term Evaluation is the original design of the Project Paper (PP) as outlined in the Logical Framework (Annex 1 to this report). The Scope of Work and the Evaluation Work Plan and Schedule are presented in Annexes 2 and 3.

The following sections of the evaluation: (1) review the current status of the project in relation to its original design framework and projected end-of-project conditions; (2) present major findings and recommendations corresponding to the broad component areas of the project:

- Mahaweli Parks Systems Establishment and Physical Development
- Park Planning and Management
- Conservation of Wildlife
- Institution-strengthening
- Local Participation
- Project Administration and Management

(3) address the issue of internal security and its effort on the project; and (4) present the overall conclusions and actions recommended to be taken by USAID and the GSL.

### II.1. CURRENT STATUS OF THE PROJECT

#### 1.1. Project Purpose

The purpose of the project as stated in the PP is to "ensure the stability of irrigated agricultural development and human settlements in the Accelerated Mahaweli Program (AMP) area by providing alternative protected habitats for displaced wildlife in a manner that is ecologically sound and socially acceptable." Indicators of achievement of project purpose include the following:

- Crop records collected by MEA show that crop losses caused by wildlife will be reduced by 70-80 percent of 1982 levels.
- No loss in water quality can be traced to illegal cutting of trees or damage to vegetation by subsistence activities within the four national parks established by the project.

- None of the seven "endangered" and two "threatened" species of animals become eliminated in the AMP area.
- Park buffer zones are being utilized productively by AMP settlers.
- Off-farm employment opportunities will be available for 2000 people by 1987 in maintenance and park related tourism, and for 3000 people during construction of park infrastructure.

The Evaluation Team finds the above stated project purpose and indicators of its achievement to be unrealistic in view of present administrative, technical and social constraints to project implementation. Attainment of the stated purpose is a far-reaching proposition which will depend largely on developing GSL institutional capacity to plan and manage protected areas within an integrated land-use system in the AMP area.

The building of such institutional capacity will require full cooperation and close coordination among at least three divisions of the GSL -- Ministry of State (including the Department of Wildlife Conservation), Mahaweli Authority of Sri Lanka (including the Mahaweli Economic Agency and Mahaweli Economic and Construction Agency), and Ministry of Lands and Land Development (including the Forest Department). Implementing agencies also require access to expertise and human resources found among Sri Lankan university faculty and non-governmental organizations.

The present constraints to project implementation arise largely from poorly defined administrative and management arrangements among implementing institutions as well as insufficient project inputs to the strengthening of the Department of Wildlife Conservation (DWLC).

Evaluation findings, which are detailed in the sections that follow, indicate that the project purpose should be revised to place greater emphasis on developing a strong interagency mechanism to support the efforts of the DWLC to plan and manage protected areas within the AMP land use system. Project resources need to be redirected to this end and the present end-of-project status (EOPS) conditions viewed as goal-level indicators to be achieved over a timeframe extending beyond the planned project life. The EOPS should be revised to stress the following:

- Mahaweli protected areas are managed by DWLC as an operational component of a total AMP systems plan for land-use.
- Park buffer zones are established and managed by appropriate GSL land resource agencies (Forest Department, Agriculture, MASL) in association with DWLC to control incursions by elephants and other wildlife while allowing productive utilization by AMP people.

- DWLC policies are redirected to promote employment of AMP people in park-related construction, maintenance, staffing and tourism.
- DWLC has a permanent cadre of trained staff in the areas of park planning, resource management, conservation education, rural sociology, and in-service training.
- DWLC has established a permanent wildlife conservation unit in AMP area that is able to monitor and control encroachment of elephants and other potentially destructive wildlife onto agricultural land.

1.2. Outputs

The type and magnitude of outputs outlined in the PP should contribute directly to attainment of the revised project purpose. Achievement of outputs will be greatly enhanced by a concerted effort to improve overall project administration and management and reinforce existing cooperation between Ministry of State/DWLC and MASL. To date, the following outputs have been achieved:

	<u>Planned LOP</u> (Quantity)	<u>To Date</u>
<u>National Park Establishment</u>	4	3
<u>Park Infrastructure</u>		
-- Boundaries (miles)	500	421
-- Signboards (boundary markers)	380	15
-- Buffer Zones (acres)	700	67
-- Roads (miles)	245	0
-- Buildings (square feet)	90,000	0
-- Other (Bridge)	1	0
<u>Park Planning and Management</u>		
-- Systems Plan	1	0
-- Park Management Plans	4	1
<u>DWLC Personnel</u>		
-- Special MEP Staff	9	4
-- Other Personnel	216	75
<u>Trained DWLC Staff</u>		
-- U.S. and Third Country	10	10
-- In-country Training	120	15

**1.3: Inputs**

Of the \$5 million obligated, cumulative project commitments to date total \$1,588,000; these funds have been allocated as follows:

	<u>Planned LOP</u> ((\$000 US)	<u>To Date</u>
Buildings/Roads/Bridge	2294	0
Park Development	394	173
Commodities	901	216
Technical Assistance	577	515
Training	294	144
Recurrent Costs	<u>540</u>	<u>540</u>
	5000	1588

Of the \$1,588,000 committed, cumulative accrued expenditures to date total \$861,000 or approximately 17 percent of life-of-project funding. Actual disbursements of AID funds total \$316,000 or approximately 6 percent of total project funding. The unexpended balance of \$4,139,000 (83 percent of project total) reflects the slow pace of project implementation to date as well as the large portion of the project budget (\$2,294,000 or 46 percent) allocated to park physical infrastructure (buildings, roads, bridge) which has yet to be committed in the form of construction contracts.

Planned GSL inputs (rupee costs of local construction, improvement of existing roads and buildings, supplementary technical assistance and training, maintenance and local salaries) total Rs. 36,100,000 (approximately US \$1,336,000) over the life-of-project. To date, approximately Rs. 16,000,000 of these funds have been committed, or 44 percent of the total.

A detailed breakdown of the project's financial status, including actual expenditures against both dollar and rupee disbursements, is outlined in Annex 5.

**II.2. FINDINGS AND RECOMMENDATIONS ON MAHAWELI PARKS SYSTEM ESTABLISHMENT AND PHYSICAL DEVELOPMENT**

**2.1. Establishing the National Parks**

Reasonable progress has been experienced toward providing legal status for the individual areas comprising the protected area system (summarized below):

<u>Name of Reserve</u>	<u>Size</u>	<u>Date of Declaration</u>
Maduru Oya	52,000 ha	9 November 1983
Wasgomuwa	45,000 ha	7 August 1984
Flood Plains	15,000 ha	7 August 1984

Somavathiya exists as a Sanctuary (declared on 9 September 1966) covering 52,000 hectares, but has not been elevated to national park status. All work on Somavathiya has been halted because of the security situation.

Based on the field investigations of the Evaluation Team, it appears that at least Flood Plains should not be considered a National Park, but would be more appropriate for a designation requiring a lesser degree of protection (e.g., Sanctuary or Natural Reserve).

### Recommendations

2.1.1. The final determination by DWLC of the appropriate designation of Protected area category for each area should await the preparation of the systems plan (see 3.1).

### 2.2. Buffer Zones

Buffer zones are not an extension of the wildlife reserve system but land-use tools that protect the reserves and the agricultural production areas by reducing the suitability of the buffer zone as wildlife habitat and increasing its utility as a fully regulated multiple-use zone.

Buffer zones are of two general types, each appropriate for specific management applications: (1) to serve as a barrier to wildlife which would otherwise damage crops (i.e., to buffer agricultural land from the effects of wildlife); and (2) to serve to soften the boundary between natural areas and the surrounding lands, thereby providing additional habitat to wildlife (i.e., to buffer the wildlife from the effects of agricultural land).

As currently conceptualized in DWLC, only the second sort of buffer zone is possible, serving essentially as an extension of the protected areas into the surrounding lands. But to meet a primary objective of the MGP -- reducing crop damage from wildlife -- the first sort of buffer zone needs to be created, functioning to discourage or block the movements of wildlife from wildlife reserves to agricultural production areas. Where possible, such buffer zones should be up to a mile wide. It may be that buffer zones can be established in only relatively few areas, since many of the protected area boundaries are natural or otherwise inappropriate for the establishment of buffer zones.

There has been little progress to date in the establishment of buffer zones.

### Recommendations

- 2.2.1. Areas appropriate for each sort of buffer zone should be identified by the systems plan (see 3.1), which would also contain recommendations on appropriate administrative structures for each buffer zone.
- 2.2.2. A workshop dealing specifically with buffer zones should be designed and implemented in mid-1986, and should involve Ministry of Agriculture, Ministry of Mahaweli, Forest Department, universities, and other relevant institutions. The workshop would produce specific recommendations on buffer zone policies and means of control.

### 2.3. Development of Physical Infrastructure

To the best of the Evaluation Team's knowledge, there has been as yet no expenditure of USAID funds on physical infrastructure, but there has been some investment of GSL funds in rehabilitating housing within Maduru Oya, including six units of housing for guards and in rehabilitating other structures in both Maduru Oya and Wasgomuwa for general purposes. One problem noted is that the rehabilitated housing in Maduru Oya was painted a shocking pink by the Contractor.

The Maduru Oya Management Plan specifies what buildings are required and where they are to be located. It is hoped that the proposed construction of physical infrastructure will follow the Management Plan, but it is difficult to be confident of this since the DWLC Assistant Director for Mahaweli has not yet seen the plans for the buildings and is not informed of the tendering process.

The bridge into the northern part of Wasgomuwa was a matter of considerable discussion. Two previous bridges at the planned location had washed out. In any case, it seems premature to proceed with plans for the bridge until the systems plan can recommend management objectives for Wasgomuwa and the management plan for the area can specify whether such a bridge is required.

The construction of physical infrastructure has been delayed due to changes in project leadership (3 Assistant Secretaries of the Ministry of State have served as Project Coordinator, and the Director DWLC changed during the second year of the project), changes in building designs, delays in receiving approval from USAID, and inefficiency in the tendering process. However, these delays have proven to be fortuitous, since the management plans upon which they were to be based have not yet been prepared or approved.

It is also apparent that DWLC has little experience in the major construction activities entailed in the MEP; construction in other national parks has typically been relatively minor and carried out by resident carpenters and masons, or contracted out to local people. As part of the AMP, the construction activities involved in the MEP are several orders of magnitude beyond the capacity of DWLC, nor is it advisable for DWLC to develop the capacity to handle what is only a temporary demand for expertise. As stated in the PP, the Mahaweli Economic and Construction Agency (MECA) should provide the required design and supervision for construction; prepare the detailed construction plans, technical specifications, and contract documents; and assist DWLC in evaluating and awarding construction contracts.

It is expected that construction for each park will be separately contracted, and that local contractors will be used to the maximum feasible extent. The project objective of using local people for construction should be borne in mind.

Annex 6 includes a detailed report on the current status of infrastructure development.

#### Recommendations

- 2.3.1. ALL CONSTRUCTION OF PHYSICAL INFRASTRUCTURE SHOULD BE HANDLED AS A PACKAGE BY MASL, BECAUSE OF ITS PROVEN EXPERTISE IN THIS FIELD; THE SCALE OF CONSTRUCTION ACTIVITIES APPEARS FAR BEYOND THE SCOPE OF DWLC AT PRESENT AND THERE IS LITTLE JUSTIFICATION TO BUILD UP THE NECESSARY CAPACITY FOR WHAT IS ONLY A TRANSITORY REQUIREMENT. MAJOR PROGRESS IN CONSTRUCTION SHOULD BE EXPECTED BY NO LATER THAN MID-1986, WITH COMPLETION BY MID-1988.
- 2.3.2. DWLC should ensure that MECA and all contractors adhere to aesthetic specifications designated by DWLC, using colors and styles which are appropriate to the particular situation.
- 2.3.3. MECA should ensure that physical structures are designed and located according to a management plan prepared by DWLC which specifies the exact purpose of each building or road.

## **II.3 PARK PLANNING AND MANAGEMENT**

### **3.1. The Systems Plan**

A systems plan for the entire Mahaweli Basin is called for in the PP. Systems plans are designed to place protected areas in the context of regional development, defining protected areas in terms of land uses in the surrounding areas. No progress has been made toward the preparation of the systems plan, though one management plan which was supposed to have followed from the systems plan has been drafted.

It appears that the systems plan has slipped due to a lack of appreciation by the individuals involved of the importance of such an overall guiding document. It is a new concept, which involves rather a different way of looking at protected areas -- as part of the Mahaweli development effort, they need to be managed for rather different purposes than the other Sri Lankan national parks. It is the opinion of the Evaluation Team that a systems plan is essential to the success of the MEP. The Mahaweli Protected Area Systems Plan would evaluate existing and proposed protected areas and assess their overall suitability for inclusion in the different categories of protected areas. On the basis of this appraisal, proposals can be made as to which areas should be developed as protected areas and in what priority. Broad objectives would be assigned to each of the protected areas, providing the basis for subsequent area-specific management plans.

The Mahaweli Protected Area Systems Plan would identify where elephant problems are likely to occur, locate appropriate boundaries, and suggest where buffer zones can be established and what activities would be appropriate for each buffer zone. The systems plan would contribute to the overall land-use plan for the Mahaweli Basin.

The systems plan should be a multi-disciplinary effort, involving DWLC staff, technical experts from various parts of the Mahaweli Ministry, Ministry of Agriculture, Forest Department, Fisheries Department, and Colombo and Peradeniya universities. Technical assistance is required to provide overall guidance and coordination, and to ensure that the right questions are being asked of the expertise available in-country.

#### **Recommendations**

- 3.1.1. THE SYSTEMS PLAN SHOULD BE PREPARED AS SOON AS POSSIBLE, USING OUTSIDE TECHNICAL ASSISTANCE ASSIGNED TO THE MEP UNDER A MODIFICATION TO THE PASA WITH USNPS. THIS PLAN, ONCE APPROVED BY THE DIRECTOR OF DWLC AND OTHER INTERESTED PARTIES, SHOULD BE THE GUIDING DOCUMENT TO DETERMINE**

STATUS AND OBJECTIVES FOR THE VARIOUS PROTECTED AREAS, LOCATE REGIONAL HEADQUARTERS, DEFINE LOCATIONS AND APPROPRIATE ACTIVITIES FOR BUFFER ZONES (see 2.2.1), ADVISE ON LOCATIONS OF ELECTRIC FENCES TO CONTROL ELEPHANT MOVEMENTS (see 4.1.2), AND ADVISE ON THE USE OF ELEPHANT BARRIERS (see 4.1.3). THE TARGET DATE FOR COMPLETION OF THE SYSTEMS PLAN SHOULD BE JUNE 1986.

- 3.1.2. USAID and GSL, in collaboration with USNPS, should identify and recruit a protected area systems planner for a period of four months to coordinate preparation of the systems plan (see Annex 13 for terms of reference for the Systems Planner).
- 3.1.3. At the end of the third month of the assignment of the Systems Planner, DWLC should convene a workshop to review the draft systems plan. This workshop should include all institutions involved in the preparation of the plan, including the Ministry of State and the Mahaweli Ministry. The output from the workshop will be an agreed protected area systems plan for the Mahaweli basin.
- 3.1.4. DWLC should postpone the preparation of further area-specific management plans until after the systems plan is completed.

### 3.2. Management Planning

The PP calls for the preparation of a detailed management plan for each of the four protected areas to be established under the project. These management plans were to have been based on the systems plan. To date one draft management plan has been prepared, for Maduru Oya National Park. It was prepared by a planning team which included three DWLC Assistant Directors linked to the MEP, three Wildlife Rangers, and one Landscape Architect from the USNPS

The Evaluation Team reviewed this draft management plan as part of its scope of work. We found it to be a useful document with many important elements, particularly in the detailed management recommendations. We also had a few concerns about the management plan, which are contained in Annex 8. In general, it was apparent that the management plan needed review by available in-country experts and by interested government agencies.

#### Recommendations

- 3.2.1. DWLC should postpone the USNPS planning workshop scheduled for January 1986 until the systems plan is in place. The draft Maduru Oya Management Plan should be reviewed in relation to the systems plan once it is developed.

- 3.2.2. DWLC should ensure that future management plans include contributions from all interested parties, including government agencies, academic institutions, local people, and PVOs.
- 3.2.3. The management plans prepared by DWLC for each wildlife reserve should include procedures for actively managing essential habitats of endangered and threatened species (see section 4.2).

#### II.4 FINDINGS AND RECOMMENDATIONS ON CONSERVATION OF WILDLIFE

The End of Project Status (EOPS) for wildlife include reducing crop losses caused by wildlife, maintaining viable populations of endangered and threatened species that occur in the AMP area, and establishing wildlife reserves buffered through land-use zones and other techniques that are acceptable to local people.

##### 4.1 Crop Losses Caused By Wildlife

A major EOPS from the MEP is that crop losses caused by wildlife be reduced by 70-80% of the 1982 crop loss levels. An important historical note is that in the first years of the nearby Gal Oya development, paddy loss to wildlife (elephants, birds, wild swine, and others) were estimated to have been as high as 80% (R. L. Brahier: Food For the People, Lake House Investment, 1954):

In interviews with DWLC field staff and with the MEA Environmental Officer, the Evaluation Team found that no baseline data for such an assessment had been collected; crop losses for 1982 were not determined. During the September 1985 workshop on Resource Assessment (for monitoring wildlife populations) conducted by Dr. R. Rudran, a crop-loss evaluation form was developed. But 1985 crop losses have not been determined, and this form was not yet being used by the DWLC-MEP personnel. The DWLC does receive reports of crop damage caused by wildlife from diverse sources such as direct reports from farmers to field staff, through the Government Agent, and through MASL personnel. However, these isolated reports are not summarized into any report format that could be used to prioritize the activities of a Wildlife Management Unit working in the AMP area to reduce crop losses.

The wildlife reserve system that has been established is clearly a major land-use tool to reduce crop losses caused by elephants. Crop losses caused by other wildlife, such as wild swine, parakeets, munias and a few other species, cannot be expected to be reduced as a direct consequence of the establishment of the wildlife reserve system. An estimate of losses that are to be expected from these wildlife species is available from Kantalai where systematic study

of sugar cane damage showed an annual loss of 20 percent due to wild swine activity (TAMS: AMP Environmental Assessment, 1980, E-23). Much of the AMP area, especially during the first years of development, is very good habitat for wild swine and similar high rates of loss can be expected.

Reduction in crop losses by wildlife by 80 percent of the 1982 levels is an unrealistic EOPS for the MEP project. The newly established wildlife reserve system, buffer zone system (see 2.2), and wildlife habitat management program within these special land-use areas will accommodate some wildlife species that would have caused considerable damage to crops. To obtain the full potential of the MEP to control crop damage the DWLC will have to establish a Wildlife Management Unit, an active wildlife control and management program that operates within the AMP area.

#### Recommendations

- 4.1.1. THE DWLC SHOULD ESTABLISH A WILDLIFE MANAGEMENT UNIT WITH ITS PRIMARY AREA OF OPERATION IN AGRICULTURAL PRODUCTION AREAS OUTSIDE THE ESTABLISHED WILDLIFE RESERVE SYSTEM. THE SUGGESTED COMPOSITION OF THE UNIT AND AREAS OF RESPONSIBILITY ARE OUTLINED IN ANNEX 9.
- 4.1.2. The DWLC and MASL should send key personnel to examine the most recent advances in the construction of electric fences that will control the movements of wildlife, including elephants. Both India and Malaysia have advanced the technology so that electric fencing has become an effective barrier to elephant movements.
- 4.1.3. The DWLC should continue to experiment in the development of elephant barriers as they have been doing. These should be constructed of materials such as stone, brick or cement, and should not harm the animals.
- 4.1.4. The DWLC should contract appropriate expertise to survey existing Sri Lankan national parks to determine where boundaries are effective in reducing movements of the animals out of the reserve and into agricultural production areas. The ways and means found to establish effective boundaries should be duplicated to the extent possible in the AMP area. (A scope of work is outlined in Annex 10.)

#### 4.2 Carrying Capacity for Threatened and Endangered Species in Reserves

In the late 1960's, the Smithsonian Institution conducted surveys in selected national parks for the DWLC under an agreement with the GSL. In an interview, the Director of DWLC said that these 1960's

surveys were useful only as background in assisting the DWLC to establish the carrying capacity of selected species in the newly established wildlife reserves in and around the AMP area. The Director said that the DWLC has not established the carrying capacity-estimates in the newly-established reserves for any wildlife species.

The training workshop to provide the specialized training that is basic in the estimation of carrying capacity levels was conducted by Dr. R. Rudan only in September 1985. Therefore, DWLC field staff have not yet initiated the systematic surveys needed to make carrying capacity evaluations for the newly established wildlife reserves. While there is much expertise within the university system of Sri Lanka to assist in estimating carrying capacities, this has not been mobilized or encouraged.

Estimates of carrying capacity for elephants is of immediate concern, because an excess number of elephants will damage the habitat and reduce carrying capacity for themselves as well as other species. In the longer view, it is important that carrying capacities of reserves and rates of dispersal and movements between protected areas be established through careful research and monitoring. This information is needed to assess the long-term survival prospects of endangered species in areas where wildlife populations are isolated by agricultural development in surrounding lands. It will be necessary to make assessments to establish if the effective population size of isolated populations are sufficient to overcome the deleterious consequences of inbreeding depression or if active management actions will be necessary to compensate for the small size and insular nature of the protected area complex.

There is much expertise within the university system of Sri Lanka that could assist the DWLC in investigating these essential parameters for the conservation of wildlife in protected areas. The DWLC has not developed the intensive ecological research capability required to make these assessments, although the university system has this already in place. The DWLC should take advantage of this opportunity.

A major constraint to estimating numbers of elephants in and around the Mahaweli parks is the recent restriction of DWLC operations because of the security risks in the northern most areas. Using estimates provided by Dr. N. Ishwaran of Peradeniya University, the number of elephants that at times move within the security risk area may include 30-60 percent of an estimated total population of about 1000 animals in the AMP area. The DWLC is currently unable to protect the habitat of the estuarine crocodile due to the security risk in the Somawathiya area.

The status of threatened and endangered species in the MEP area is outlined in Annex 11.

### Recommendations

- 4.2.1. The DWLC should initiate the monitoring program for threatened and endangered species and their habitats that is called for in the PP. Each national park should have a staff ecologist and two ecological field assistants (one more than originally called for in the PP). Each monitoring team should have its own transport, and employ local people to assist in their activities. People who have lived in the areas for many years can provide useful insights into the distribution and life history processes of the animals they know.
- 4.2.2. The DWLC should encourage and sponsor university research in wildlife reserves, especially to study the life history processes of threatened and endangered species and to assist in establishing carrying capacities and critical habitats. The Sri Lankan universities have much expertise upon which the DWLC can and should draw.

### 4.3 Progress in Habitat Enrichment and Reforestation in the Wildlife Reserves

The MEP field staff, the MEA Environmental Officer, the contractor doing the habitat enrichment work, and the elephant management expert contracted by MASL (Dr. G. F. B. Child: An evaluation of elephant problems associated with the Accelerated Mahaweli Development Program in Sri Lanka, March 1985) all agree that present efforts to enrich wildlife habitat have, at best, not met expectations. The opinion often expressed is that this element in the MEP has been a failure.

Habitat enrichment efforts have centered on the planting of fodder grasses in abandoned chena and other open areas. This was done under contract with Nation Builders, a Sri Lankan non-profit organization that uses volunteers and local minimum-wage laborers for the plantings under the direction of a DWLC staff supervisor.

One example shows the scope and structure of the problems so far encountered: In the southern end of the Wasgomuwa National Park a 50 acre area of fodder grass was planted in an open area of former chena now vegetated mostly with Imperata grass. Numerous buffalo and cattle graze in this area and have done so for many years. DWLC field personnel are fully aware that to exclude the livestock without providing an alternative for this primary agricultural resource would not be economically or socially acceptable to the people living around the reserves. The DWLC has refrained from moving this livestock out of the Park until other arrangements can be made for grazing. In the meantime, the livestock destroyed the newly planted grass.

Other measures to stabilize habitat conditions and to encourage a redistribution of wildlife movements and centers of activity have not yet been tried. An experimental approach to the establishment of salt licks and new small tanks that encourage wildlife, such as elephants, to refocus their centers of activity are recommended as examples of other wildlife habitat management options DWLC should try.

It should be noted that DWLC has successfully used a range of habitat management techniques to influence the distribution of wildlife in the longer established national parks such as Wilpattu and Yala. The maintenance of temporary water sources and villus that provide year-long water are key management steps in the success of these dry zone wildlife reserves.

The contract work by Nations Builders to reforest areas with native trees has been successful. A total of 317 acres have now been planted. The major problem encountered has been with the tendering process. Nation Builders has established a million seedlings for use in this project with the reasonable expectation they would continue to do the reforestation work. Because of the delay in the administrative process they will not be able to plant this wet season and the reforestation program will be delayed by a year.

#### Recommendations

- 4.3.1. The attempt to establish fodder grass in abandoned chena areas in the wildlife reserves should be discontinued.
- 4.3.2. The DWLC should use methods such as the establishment of a system of small tanks and the use of salt to refocus the centers of activity of wildlife (especially elephants) using the reserves. This will require some experimentation to determine what works best and this can be done by the staff ecologist and the monitoring teams in each reserve.

#### 4.4 Procedures for Handling Pocketed Elephants

The effective management and the training of elephants is a technology that was developed and used in Sri Lanka for several thousand years. The procedures and options for the management, capture, and control of wild elephants are outlined in detail in the Fauna and Flora Protection Ordinance. This is the subject of continued public debate. The TAMS environmental assessment for the MEP area identified the future effective management of the captive and wild populations as a condition for the long-term survival of this endangered species in Sri Lanka. The Policy Workshop for wildlife reserves held as an essential part of the TA component of the MEP includes policy guidelines for the management of elephants.

Interviews in the MEP area with the DWLC field staff indicated that elephant management efforts have mostly been at the level of guards responding to farmer's calls for help and going to those areas to help drive elephants back into the reserves. The elephants have been returning almost immediately to feed on crops. The Director DWLC and the senior MEP staff agree that a strong elephant control and management capability is needed to deal with just the problem in the AMP area. The present administrative organization is that the DWLC Assistant Director for Administration of the MEP also serves as the Acting Assistant Director in charge of the existing Elephant Control Unit. So far in 1985, 20 percent of his time has been devoted to the management of pocketed elephant herds outside the MEP area. He has not been involved in the management of pocketed herds within the MEP area which is his assigned area of responsibility.

The Fauna and Flora Protection Ordinance provides the Director DWLC with the authority to issue permits to capture elephants that cause damage to houses, crops, and other property outside nature reserves (section 13). Thus, the private sector could be mobilized to assist in the conservation of elephants (see Annex 9 for comments on elephant capture using traditional methods). Given the magnitude of the problem and the time-frame in which reasonable action on the part of the DWLC can be expected by the farmers in the AMP areas, the private sector option should be explored to determine if it is feasible.

The extent of the pocketed herd problem is increasing and it can be expected to increase as development of agricultural lands in the AMP progresses. One major pocketed herd in the Gunners Quoin area (north of Maduru Oya) included an estimated 120 elephants. This number is equal to or more than the populations found in most national parks in south and southeast Asia. The total number of elephants that will have to be moved from the agricultural production areas is estimated by the Director DWLC to be 350. If these can successfully be captured and trained, this will increase the trained elephant population of Sri Lanka by 50 percent. This is an enormous problem and all possible resources and methods must be directed to its solution for the benefit of the conservation of elephants and the welfare of farmers alike.

#### Recommendations

- 4.4.1. Establish the Wildlife Management Unit to operate within the agricultural production areas of the AMP area. See 4.1.1 and Annex 10 for details of composition.
- 4.4.2. The job of capturing the number of elephants that will have to be moved from the AMP area is too large for one unit and procedures to allow the private sector to contribute to this conservation effort should be assessed and implemented if feasible.

## II.5. INSTITUTION-STRENGTHENING

### 5.1. Current Status of Field Staff in Project Area

Hiring of field staff has been somewhat slower than expected, but not unreasonably so. Some 225 positions were called for in the PP, of which 81 were to be assigned to Somawathiya. Due to security problems, only 4 people are assigned to Somawathiya, so remaining personnel deployment in the PP include 10 at regional headquarters, 83 in Maduru Oya, and 51 in Wasgomuwa (total: 144). To date, 79 positions have been filled. Therefore, over half the positions which could be filled have been filled.

One reason why the hiring of staff has been slow is that the construction of staff housing has fallen far beyond schedule and other quarters are not available.

At the professional level, Assistant Directors have been appointed for Ecology, Park Planning, Mahaweli Administration, and Education. These individuals have all received overseas training under the project.

Professional-level appointments agreed in the PP but still remaining to be filled include: Training Officer (whose duties have been temporarily assigned to the Education Officer); Rural Sociologist; Legal Officer; Park Engineer; and a second Ecologist. No Ecological Field Assistants have been hired to date.

#### Recommendations

- 5.1.1. During the course of 1986, provided Treasury approval can be obtained, the 5 remaining professional positions -- Legal Officer, Training Officer, Ecologist, Rural Sociologist, and Park Engineer -- should be filled, and two Ecological Field Assistants should be hired for each reserve. In the second half of 1986, the newly-hired professional staff should be sent on a five-week training course organized by the USNPS.

### 5.2. Technical Assistance

Technical assistance has been designed to enhance the capacity of DWLC to manage the wildlife and protected area resources for which it is responsible. This includes technical training in the U.S. or Third Countries, in-country workshops, and continuous advice on request. The USNPS has been the major source of such technical assistance, through a PASA with USAID. IUCN has also been involved.

However, the original concept of short-term technical assistance has not proven successful, due to the lack of continuity and the need for a permanent presence to provide advice and training to the newly-hired professional staff, advise the Wildlife Management Unit (see 4.1), coordinate the preparation of the systems plan (see 3.1); and help promote the implementation of management plans and recommendations from the workshops.

#### Recommendations

- 5.2.1. USAID AND GSL SHOULD AGREE TO INCREASE THE TECHNICAL ASSISTANCE ELEMENT OF THE PROJECT, INCLUDING CONSIDERATION OF ASSIGNING A LONG-TERM (TWO YEARS) TECHNICAL ADVISOR WHO COULD PROVIDE OVERALL COORDINATION TO TA CONTRIBUTIONS, ADVISE THE NEW DWLC STAFF ON A REGULAR BASIS, ADVISE THE NEWLY-ESTABLISHED WILDLIFE MANAGEMENT UNIT, PROMOTE FOLLOW-UP OF RECOMMENDATIONS, AND RECOMMEND ON IMPLEMENTATION OF MANAGEMENT PLANS.

#### 5.3. Overseas Training

A five-week "Introduction to US National Park Management" training course was held for six key DWLC personnel from 25 May to 29 June 1985. Based on interviews with four of the individuals involved, the course was highly successful and gave them information and perspectives which they have found extremely useful in their work on MEP. (See Annex 8 for a summary of this training program.)

Specialized training is scheduled to be provided in the future to at least the present four Assistant Directors in the MEP.

#### Recommendations

- 5.3.1. DWLC, in collaboration with USNPS, should design appropriate specialized training courses for the four Assistant Directors involved in the MEP and implement the training during the course of 1986.

#### 5.4. Workshops

One of the primary means of technical assistance has been through in-country workshops convened by DWLC and involving expertise provided through USNPS and IUCN. Workshops are very useful training instruments, involving relatively large numbers of people and leading to useful products. Workshops convened under this project have included:

-- Policy workshop. February 1985

-- Resource Assessment workshop. August/September 1985.

- Academic Seminar (on the role of protected areas in rural and national development). September 1985.
- Management Planning workshop. September/October 1985
- Staff Development and Training workshop. October 1985

These workshops have been only partially successful. There have been serious problems over logistics, participation, and technical support which have jeopardized the ultimate efficacy of these carefully-planned in-country training programs (see letter to Secretary, Ministry of State from Acting Director, USAID dated 21 October 1985).

There have also been problems in the design of some of the workshops, notably the Policy Workshop. The product from this workshop, a series of policy recommendations, is not what is most helpful to the DWLC at this stage. What is required on policy is a clear, written statement of the current DWLC policy on various key issues. The workshop was to have helped outline what are the areas of policy concern, with the appropriate DWLC personnel stating what is the policy on each issue.

More serious general problems have been (1) the narrowness of participation and (2) the lack of follow-up to the workshops. The workshops have been designed to bring DWLC personnel in contact with experts from other government departments, academia, and PVOs, but with few exceptions the workshops have involved only DWLC staff -- this was the case even for the "academic seminar." Further, it has been extremely difficult to obtain reactions from DWLC to the recommendations emanating from the workshops. The results have been very poorly distributed, with even key individuals from within the DWLC not being given copies of the reports.

It was apparent to the Evaluation Team that greatly improved coordination is required if these in-country workshops are to attain their objectives. Since the workshops and other forms of training are designed to enhance the technical and administrative capacity of the DWLC staff, it is unrealistic to expect that DWLC is already capable of coordinating workshops which are complex and demanding.

#### Recommendations

(see 5.2.1. and 7.2.1., which together will address the problems).

### 5.5. In-Country Training

The PP called for greatly expanded training, including a Wildlife Training Center, which has not yet been implemented and is seldom even mentioned. The PP also called for a full-time Training Officer

at the Assistant Director level, but this post was merged with the Education Officer. In view of the large and increasing demands for well-trained personnel, the Evaluation Team feels that much more attention needs to be paid to this subject.

This can be accomplished through the appointment of a full-time Training Officer (separate from the Education Officer) to coordinate all training activities for the DWLC. This officer would help to establish the Wildlife Training Center (WTC) for training of basic and mid-level staff in wildlife ecology, human dimensions of wildlife management, and other areas of skill necessary for managing wildlife in and around protected areas. The beginning of a core curriculum was developed at the Resource

Assessment and Wildlife Management Workshops conducted in August and September 1985. Follow-through in developing a long-term DWLC Training Plan is the next major step.

#### Recommendations

- 5.5.1. USAID and the GSL should enhance the personnel development element of the project, including implementing in 1986 the Wildlife Training Center called for in the PP. A full-time Training Officer (separate from the Education Officer) should be appointed to coordinate all in-service training, develop a long-term DWLC Training Plan, and assist with USNPS workshops.

### II.6. FINDINGS AND RECOMMENDATIONS ON LOCAL PARTICIPATION

#### 6.1. Involvement in Park Development Activities by Local People

Local participation in park development activities has been confined to minor road construction and maintenance, rehabilitation of existing buildings, and special efforts in habitat enrichment and reforestation. The latter were undertaken by Nation Builders, an NGO which conducted this program under contractual agreement with DWLC. Nation Builders has as many as 3,000 persons continuously employed on its projects; 2,000 of them are females. It was able to involve 115 persons of the Veddah community (of which 75 were women) in habitat enrichment and reforestation activities at Maduru Oya National Park. Work was available for two months.

When interviewed by the Evaluation Team, the Veddahs complained about underpayment by Nation Builders and delays in collecting the payments due them. DWLC officials are generally aware of this situation, although they have received no direct complaints from the Veddah community. The kind of supportive relationship which would promote positive interactions with the Veddahs has not yet been established.

Approximately 600 Veddah people (including 450 females) have been employed by MASL in the area bordering Maduru Oya National Park. They have served as casual laborers in constructing roads and terracing the banks around waterways and roads. The daily wage rate per worker was 47.5 rupees for males and 42.5 rupees for females, including food.

The DWLC has been using casual labor for perimeter clearing and boundary marking, but these workers tend to come from places other than the AMP region. This is due to present DWLC policy which promotes hiring of applicants who register with the central DWLC office in Colombo. The DWLC also limits the span of work to three months, which discourages casual laborers from longer-term employment in the area. In general, the limited number of workers recruited and the high turnover from one job to the next greatly hinders the effectiveness of DWLC's use of casual labor.

### Recommendations

- 6.1.1. DWLC should ensure that local people are hired as casual laborers and permit them to work for periods longer than the current limit of three months, and give them prospects of being favorably considered for permanent staff when positions become available.
- 6.1.2. With the hiring of the Rural Sociologist (see 5.1.1), DWLC should modify its policies dealing with local people and orient its staff towards facilitating a positive social environment. The DWLC Rural Sociologist should work to encourage the formation of voluntary groups for environmental protection among local people to encourage greater understanding, effective communication, and local participation in park development activities.
- 6.1.3. DWLC should ensure greater supervision of PVO contractors so that under-reporting of attendance, underpayment, etc. can be kept under check, and encourage the contracting agencies to play a useful role in making people aware that national parks are useful to society.

### 6.2. Use of Park Resources by Local People

The Evaluation Team was able to observe at least three productive uses of park resources by local people: (1) livestock grazing (cattle and buffalo); (2) brick making and sand collecting; and (3) tobacco cultivation. At certain places gemming is also practiced, but the incidence is low. Poaching and illegal felling of trees within park boundaries appears to have been reduced from former levels due to the onset of planned resettlement and the appearance of new opportunities for casual labor associated with AMP development.

While livestock grazing in and adjacent to wildlife reserves has a very long history, cultivation of tobacco and brick-making appear to be of relatively recent origin. Many thousands of people subsist on these activities in Flood Plains National Park. Cattle in this area apparently have a very low productivity although the numbers in the herds are large. Tobacco cultivation is done seasonally by itinerant farmers. The brick kilns are financed by a few local entrepreneurs (called "gentlemen" by the local people they employ). There are about seven kiln owners operating 20 to 30 kilns each. Generally, two persons work on one kiln and in many cases it is either husband and wife or two brothers.

Some of the families involved in these activities have received land under the AMP. Those remaining are willing to move elsewhere if they are provided an alternative form of livelihood. When Flood Plains National Park was declared, these people did not foresee any barriers to their ongoing activities. They now have been told by DWLC staff that they must relocate; the DWLC has attempted to evict several families, but this was halted by local political intervention.

#### Recommendations

- 6.2.1. DWLC, through its Rural Sociologist, should conduct appropriate training and orientation for its MEP staff on working with people around the parks so that the people are seen as beneficiaries and not primarily as problems. The Sociologist should ensure that DWLC cooperates with other concerned agencies on behalf of AMP people.

#### 6.3. Direct Participation in Decision Making by Local People

The Evaluation Team found that local people were largely unaware of the concept of the Mahaweli Environment Project. The role of protected areas in AMP development has not been introduced by DWLC staff through discussion with the local people or their representatives.

The newly-arrived settlers in AMP systems B and C are not yet well organized, as settlements are still at a formative stage. Norms and ideologies binding them together to form an identity as one community are yet to emerge. In some settlements adjacent to the MEP area, land preparation and development of agricultural extension services has lagged and settlers have reverted to chena and other forms of subsistence activities. However, the people remain part of informal social networks which connect them with the wider society as well as the park areas. Traditional social and economic patterns remain and encourage the people to perceive the MEP area in a way similar to before the national parks were declared.

Local people first learned about the national parks when the DWLC began to mark boundaries and evict people. This triggered a wave of actions against the newly-imposed impediments to their accustomed activities and created suspicious or hostile attitudes toward the DWLC. The GSL, which formerly recognized the traditional people in the MEP area as "Vanniye Aththo" (jungle people) and once constructed a tarmac road for their settlements, is now seen to be antagonistic and wanting the people out of the area. Many people have objected to relocating from designated park areas, despite the fact that they are agriculturalists and were given land elsewhere in the AMP scheme.

While DWLC staff feel that they are performing an important function in maintaining security, no indication was found of DWLC staff encouraging local participation in decision-making about the status of park boundaries and use of park resources. The local people -- government officials and private citizens -- have not been consulted by DWLC in the preparation of the draft Maduru Oya Park Management Plan, although the Plan indicates activities that will directly affect the people living in surrounding areas. As management of Maduru Oya must take into account the neighboring irrigation systems and agricultural development areas, it is natural that individuals concerned would wish to be consulted.

#### Recommendations

- 6.3.1. For all future management plans, local government officials and citizens groups should participate in the planning process.

#### 6.4 Local Participation in Awareness Programs

Nation Builders has carried out a conservation education program on its own for some time in the MEP area. Methods such as processions, posters, leaflets, and banners are used, typically involving school children. Before the programs are carried out, discussions are held with Assistant Government Agents, local religious leaders and school principals. The conservation education programs are conducted with the approval and encouragement of the DWLC.

DWLC cooperation in supporting these activities has lagged in recent months due to the demands placed on the DWLC Training and Education Officer while participating in U.S.-based training and the November 1985 Staff Development and Training Workshop in Colombo. It was apparent to the Evaluation Team that the conservation education and training functions for the MEP demand separate full-time staff specializing in these areas.

The MEP is under the Ministry of State, which is responsible for public media programs. However, the contribution of the media to public awareness of the project and its objectives seems to leave much to be desired. Local people are generally aware of only the environmental problems associated with their day-to-day existence as farmers, fishermen and users of forest resources. Their state of knowledge comes from direct experience. The MEP has not yet developed public awareness programs designed to widen this knowledge by instilling a new perception of the value of protected areas in regional and national development. There is an enormous opportunity for the DWLC, in cooperation with NGOs and university resource persons, to build such awareness. By doing so, the DWLC can strengthen its base of operations and acceptance to local people.

### Recommendations

- 6.4.1. The DWLC should evolve its own public awareness program, using the Assistant Director for Education and the Rural Sociologist to enlist local participation in the design of messages. Different target groups should be identified, with different messages developed for each audience. Public media should be involved as much as possible, and resource persons should be drawn from teaching institutions, research institutes, and other institutions (both formal and informal) concerned with environment and rural development.

## II.7. FINDINGS AND RECOMMENDATIONS ON PROJECT ADMINISTRATION AND MANAGEMENT

### 7.1. Administrative Arrangements

Shortly before the initial Project Agreement in September 1982, a Cabinet Memorandum was issued by the Ministry of State which established an "implementing mechanism" for the project. This consisted of two bodies: an interagency Steering Committee and an Implementation Unit located in the Ministry of State.

The four-member Steering Committee consisted of the Secretary and Senior Assistant Secretary, Ministry of State, the Secretary-General of the Mahaweli Authority of Sri Lanka (MASL) and the Executive Director, Mahaweli Economic Agency (MEA). Its functions were to determine project policies and priorities, approve project plans and programs, coordinate the overall activities of agencies participating in the project, approve budgets, guide the operations of the Implementation Unit, monitor and evaluate performance, and exercise financial supervision.

The Implementation Unit was given legal identity as a division of the Ministry of State and vested with corresponding financial and administrative authority. It consisted of four members: the Project Coordinator (a senior official of the Ministry of State :ot lower in rank than Senior Assistant Secretary); the Project Director (nominated by the Ministry of State in consultation with the Ministry of Mahaweli Development); the Technical Director (Director of DWLC); and MEA Representative (Head of Environmental Division of MEA).

Principal functions of the Implementation Unit were to prepare the project implementation plan together with detailed annual work plans, prepare annual budgets, liaise with other agencies in the formulation and implementation of annual plans, furnish progress and financial reports at agreed intervals to the Steering Committee and MASL, and maintain financial accounts of the project both for GSL expenditures (rupees) and USAID expenditures (rupees and U.S. dollars).

Institutional functions under the project were defined as follows:

- Ministry of State: overall administrative responsibility for project operations in consultation with the Steering Committee and, where necessary, with MASL; supervise the project Implementing Unit.
- DWLC: implement park boundary surveys and demarcation, establish legal identity of parks, develop park infrastructure and facilities, prepare systems plan for Mahaweli protected areas and management plans for individual parks in the system, develop field research and conservation education programs.
- MASL: overall financial control of the project in consultation with the Steering Committee; supervise accounting of all project disbursements with the assistance of the Implementation Unit, provide project funds in GSL annual budget; prepare financial reports to USAID on all expenditures against dollar and rupee funds, provide required designs and detailed construction plans, and assist the Steering Committee in evaluating and awarding construction contracts.
- MEA: act as an intermediary between MASL and Ministry of State; provide assistance to the Project Director on environmental aspects of project implementation; assist DWLC to prepare a systems plan for Mahaweli parks.

The Evaluation Team found the GSL interagency administrative arrangements and project implementing mechanism to again be clearly defined in a series of administrative guidance papers issued early in 1983 (Project Implementation Plan, Project Accounting Procedures,

First Annual Work Plan). The arrangements outlined require full cooperation and coordination among the Ministry of State, DWLC and MASL in implementing the objectives of this complex project.

Despite the careful attention initially given by the GSL and USAID to project administration, early implementation of the project was plagued by delays and set-backs due to several reasons:

- The full-time Project Director in the Implementation Unit never materialized.
- The Project Coordinator (Senior Assistant Secretary, Ministry of State) was not in place until June 1983.
- Little attention was given by the GSL and USAID to the need for adequate support staff in the Implementation Unit. A Program Officer and a Park Planner (Sri Lankan nationals) were provided to the Unit as consultants under an IUCN/WFP project, but did not come on board until July-August 1983. The Unit did not have the services of a full-time accountant until late 1985. There have been no qualified technical staff in the areas of engineering and contracting.
- The interagency Steering Committee has met infrequently since the project began and not at all in recent months.

Additional problems were encountered in 1983-85 because of changes in both GSL and USAID personnel directly involved in project management. In November 1983 the Director DWLC, who had been active in the initial phases of project design and development, was replaced by a new Director who had not been involved up to that point and therefore had little knowledge of the project. In late 1984 the Secretary, Ministry of State, who had been instrumental in setting up the interagency Steering Committee and the Implementation Unit, retired from the GSL and was replaced by a new Secretary. In mid-1985 the Senior Assistant Secretary, Ministry of State, who had served for two years as Project Coordinator, was replaced.

In June 1985 the USAID Project Manager, who had helped to design the project and monitor its progress since the beginning of implementation, left USAID and had to be replaced. His replacement has rapidly taken control of USAID management of the project, in addition to his responsibilities in managing the \$20 million Water Supply and Sanitation Sector Project as well as backstopping several environmental activities in Sri Lanka supported by AID/W centrally-funded projects. Given this workload and the effort that will be required to follow-up on recommendations generated by this evaluation, the Project Manager may require extra support in 1986 from additional Mission personnel assigned to the project.

A very recent change in project administration occurred shortly before the Evaluation Team arrived in Colombo. This change involved full transfer of implementing authority to the Director DWLC, leaving the role of the MEP Implementation Unit in some confusion. The change was instituted by the Secretary, Ministry of State in response to a letter from USAID which drew attention to serious failings in GSL coordination and backstopping of recent workshops under the USNPS Technical Assistance and Training Program (see 5.4). In the wake of this development, the Project Coordinator in the MEP Implementation Unit has become less involved in the project.

These problems and set-backs have contributed over time to a serious breakdown in central project administration and management. The Evaluation Team found consensus among all those interviewed that the project has been limping along with progressively weaker administrative control since late 1984. Structural defects in the implementing mechanism such as the lack of a full-time Project Director and insufficient support staff in the Implementation Unit to help with financial management and contracting procedures require immediate correction if the MEP is to reverse its present trend toward administrative collapse. The very recent appointment of a full-time accountant to the Unit is a step in the right direction.

#### Recommendations

- 7.1.1. USAID IN CONJUNCTION WITH THE GSL SHOULD UNDERTAKE A THOROUGH REASSESSMENT OF PROJECT MANAGEMENT NEEDS IN RELATION TO PRESENT INTERAGENCY ADMINISTRATIVE ARRANGEMENTS AND THE COMPARATIVE STRENGTHS OF MINISTRY OF STATE, DWLC, MASL, AND MEA. THIS REASSESSMENT SHOULD BE BASED ON EVALUATION TEAM FINDINGS AND RECOMMENDATIONS AND CREATE A DIALOGUE AT THE HIGHEST APPROPRIATE GSL LEVEL TO SEEK AN IMPROVED PROJECT ADMINISTRATIVE AND IMPLEMENTING MECHANISM.
- 7.1.2. The Secretary, Ministry of State should appoint full-time Project Director to have full administrative authority over all aspects of the project and exercise control over the existing MEP Implementing Unit. The Project Director would report to the Secretary through the Director DWLC.
- 7.1.3. The Ministry of State should strengthen the MEP Implementation Unit by adding an engineer (possibly seconded from MASL) and a contracting officer.
- 7.1.4. The Secretary, Ministry of State should reactivate and strengthen the MEP Interagency Steering Committee under his Chairmanship. Membership on the Steering Committee should include the Director DWLC and the USAID Project Manager.

## 7.2. DWLC Decision-making

The Evaluation Team noted a trend over recent months to consolidate most decision-making on project matters in Colombo under the personal direction of the Director DWLC. This has happened in spite of the tremendous demands placed upon the Director to oversee the administration of the entire system of protected areas in Sri Lanka in compliance with the provisions of the Fauna and Flora Protection Ordinance.

The 182,000 hectares of protected area in the Mahaweli basin is located in an area of intensive agricultural development, which adds several orders of complexity to the functions normally carried out by the DWLC (patrolling, law enforcement and maintenance of facilities). The Director DWLC now has in place four Assistant Directors for Mahaweli parks in charge of administration, planning, resource management, and education and training, respectively. However, the ability of the Assistant Directors and the field staff under their direction to perform their assigned duties is jeopardized by highly centralized control in Colombo. The Evaluation Team was surprised at the the level of personal involvement by the Director DWLC in even the most mundane decision-making matters.

In an interview with DWLC field staff in Maduru Oya National Park, the Evaluation Team noted a distressing degree of control by Colombo headquarters over minor financial and operational functions that could easily be handled by the local staff if given the authority to do so. In an interview with the four Assistant Directors for Mahaweli, all of them stressed that they needed greater support from headquarters in recruiting additional field staff and developing park facilities. They felt that this support could best be given by beginning to decentralize control over routine operations as well as allowing greater autonomy for regional administration of project implementation and finances.

### Recommendations

- 7.2.1. THE SECRETARY, MINISTRY OF STATE SHOULD ESTABLISH THE POST OF DWLC DEPUTY DIRECTOR OF MAHAWELI, WITH FULL AND INDEPENDENT AUTHORITY UNDER THE PROJECT DIRECTOR OF ALL MEP ACTIVITIES IN THE FIELD (AS PROVIDED FOR UNDER ARTICLE 69 OF THE FAUNA AND FLORA PROTECTION ORDINANCE), WITH TECHNICAL ADVICE PROVIDED BY THE MEP TECHNICAL ADVISOR (see 5.1.1).

### 7.3a. Project Financial Management

The efficiency of financial administration and management of accounts also has slowly eroded in the past two years of project activity. The initial Ministry of State guidance of November 1983 on financial accounting procedures has not been implemented satisfactorily. The reasons for this are many and include:

- weak capacity of the DWLC to maintain separate and proper accounts showing expenditures accrued against releases of funds by MASL for specific project activities;
- ineffective coordination between DWLC and the MEP Implementation Unit within the Ministry of State in verifying expenditures and maintaining a financial reporting system for MASL and USAID review.
- a functional split between the planning and programming arm of project administration (Ministry of State Implementation Unit) and the financial management arm (DWLC) which confounds accounting and leads to uncertainty as to which expenditures have been accrued against which planned activities.

Recently, the Ministry of State has taken an important step to correct these deficiencies by adding a full-time professional accountant to the Implementation Unit. However, unless full control over financial accounting of project funds is delegated to the Unit there will continue to be problems of coordination with DWLC in verifying actual expenditures.

In an interview with the Director-General and other executive staff of MASL, the Evaluation Team noted a growing impatience with the Ministry of State/DWLC accounting procedures. MASL indicated that they are at present more than 11 million rupees "in the red" on disbursements made to Ministry of State/DWLC, but not properly accounted for in order for MASL to be reimbursed by USAID.

The financial status of project including actual expenditures against both dollar and rupee disbursements is included in this report as Annex 5.

#### Recommendations

- 7.3.1. The Ministry of State should support financial management by centralizing all project accounting within the MEP Implementation Unit under the direction of the Project Director. The full-time accountant in the Unit should have ready access to all DWLC financial receipts.

#### 7.4. Tendering and Contracting for Construction

The development of park infrastructure (buildings, roads, proposed bridge) has been delayed because of the reasons outlined in Part II.2.3. A basic problem to be resolved is the lack of effective administrative control over and coordination of the tendering process for construction contracts.

Because of specific USAID policies regarding competition for and award of local procurement contracts, it is essential that explicit guidelines be established by USAID and the GSL for the MEP construction element. For example, it is USAID policy that local contracting should be directed toward the private sector, which would preclude the direct role of GSL public works in constructing park facilities. However, MASL (through MECA) is willing to coordinate and supervise project-funded construction in collaboration with the MEP Implementation Unit in the Ministry of State. MASL's proven expertise in this area could be tapped to expedite the tendering and contracting process in accordance with USAID policy. This is the basis for the Evaluation Team's recommendation (see 2.3.1) that implementation of all construction be transferred to MASL as a package.

The tendering process for constructing new buildings in the parks has been subject to several changes in design specifications. Existing building designs approved by DWLC early in the project were later scrapped in favor of developing new designs. This, however, brought some confusion to the tendering process in separating out awards for design and for actual construction. This is only now being sorted out; the process could be made more efficient by enlisting the expertise of MECA to provide supervision for design, prepare detailed construction plans and technical specifications, issue tenders, and assist the DWLC and MEP Implementation Unit in evaluating and awarding construction contracts.

Administrative difficulties in the tendering process are also illustrated by the handling of the proposed Amban Ganga bridge construction. Apparently, the Ministry of State Tender Board had gone so far as to award the contract before learning from USAID that the tendering process had not been consistent with AID regulations governing procurement actions (see USAID letter dated 21 October 1985 to the Secretary, Ministry of State). USAID was not able to approve financing of the award of bridge construction to the firm recommended by the Tender Board because of:

- substantial disparities in cost estimates among the firms bidding for the work;
- imprecise technical specifications included in the bid submitted by the firm selected by the Tender Board; and

- conditions in the award of contract which implied further negotiation of costs with the selected firm.

These problems can be avoided in the future. USAID should provide specific guidelines on its procurement regulations to the GSL; the MEP Implementation Unit requires strengthening through the addition of an engineer and contracting officer; and MASL (through MECA) should be enlisted to coordinate and supervise all MEP construction activities.

The current status of project-funded construction of park infrastructure is included in this report as Annex 6.

#### Recommendations

(see recommendations 2.3.1., 7.1.2., and 7.1.3., which together will address the problems).

#### 7.5. GSL and USAID Monitoring of Progress

A review of project files at USAID indicated that a complete set of quarterly progress reports has been maintained from the onset of project implementation. However, USAID depends heavily on information provided by the Ministry of State Implementation Unit to document project progress and uses of funding. As noted above, this information is often incomplete, particularly in terms of financial accounting. USAID Project Management has maintained a schedule of periodic field visits to monitor actual progress and compare this with GSL reports.

The recent turnovers in project management staff at both USAID and the MEP Implementation Unit have frustrated efforts to monitor project performance during 1985 and have led to a loss of continuity in addressing the project's major administrative problems.

#### Recommendations

- 7.5.1. USAID in collaboration with the MEP Implementation Unit should review the quarterly reporting system and decide on important indicators of progress -- keyed to the 1986 implementation schedule -- that can be incorporated in a new project monitoring system. Information from the monitoring system should be systematically reviewed for its accuracy and utility to project management.

## II.8. THE ISSUE OF INTERNAL SECURITY

DWLC has been greatly influenced by the internal security problem. In May 1985, 24 members of the DWLC staff at Wilpattu National Park were killed by terrorists. According to the Director DWLC, staff operations in Wilpattu and in Yala East have been greatly reduced because of security risks. In the AMP area, DWLC staff no longer go to the Somawathiya Sanctuary and much of the northern most AMP areas because of ongoing insurgent activities there.

It was clear to the Evaluation Team that it will be some time before DWLC can hope to resume normal operations in the northern and eastern most AMP areas. Allocating MEP inputs to the development of Somawathiya as a national park would appear, under present circumstances, to be futile.

The security situation does, however, present an opportunity for redirecting project resources originally allocated for development of Somawathiya National Park. These planned inputs to Somawathiya include:

- assignment of 81 new DWLC personnel to Somawathiya;
- surveying and demarcation of 160 miles of boundary;
- erection of 95 signboards;
- construction of 14,400 square feet of new buildings;
- construction of 120 miles of new and improved roads.

The Evaluation Team estimates that approximately \$550,000 could be reallocated from Somawathiya development to other uses within the project. This would be more than enough to cover the additional costs of implementing the major recommendations contained in this evaluation.

### Recommendations

- 8.1.1. USAID SHOULD REALLOCATE FUNDS PREVIOUSLY ALLOCATED TO DEVELOPMENT OF SOMAWATHIYA NATIONAL PARK TO COVER THE COSTS OF THE RECOMMENDATIONS CONTAINED IN THIS EVALUATION.

## II.9. OVERALL CONCLUSIONS AND LESSONS LEARNED

### 9.1. Lessons Learned

The MEP mid-term evaluation has produced findings that lead to overall conclusions regarding project performance and important lessons for project management.

- 1) Perception of the Project: The MEP requires a new perception of protected areas which is different from the traditional Sri Lankan national parks such as Yala or Wilpattu. Its contribution to conservation and sustainable development will be most significant if the Mahaweli protected areas are managed to benefit local people as well as wildlife. This new approach to protected areas management requires enhanced cooperation between DWLC and other concerned GSL agencies, universities, and private organizations. Project management is aware of this need, but has yet to invest the effort necessary to achieve the objective. Priority attention must be given now to improving interagency cooperation, beginning with development of the Mahaweli Systems Plan.
- 2) Technical Assistance: The MEP is designed to provide technical assistance to DWLC in order to implement the broader approach to conservation and development envisaged in the project as approved by the GSL and USAID. The Evaluation Team has examined progress to date and is convinced that the technical assistance required will be much more effective if an MEP Technical Advisor is provided to the project for a period of two years. In retrospect, it is likely that the presence of such a long-term advisor in the initial years of the project would have prevented, or at least lessened, many of the implementation problems documented in this evaluation. Technical assistance is one of the AID "pillars"; for projects like the MEP which emphasize institution-strengthening, long-term TA is often essential to project success.
- 3) Construction of Physical Infrastructure: The MEP includes a substantial capital development component (46 percent of total project funding goes to park physical infrastructure). Yet, the implementation of this component has been entrusted to GSL agencies that have little experience in the field of civil engineering, contracting, and construction. It is not even advisable for the Ministry of State and DWLC to develop the capacity to handle what is only a temporary demand for such expertise. Transferring coordination and supervision of the project's construction activities to MASL is logical, is acceptable to MASL, and follows what was originally planned in the PP. The lesson for the GSL and USAID is that projects calling for substantial construction of physical facilities require implementing agencies (host-country government and/or private contractors) that have proven expertise in the field.

- 4) Project Administration: The MEP implementing mechanism has never functioned properly, so administration of the project has been a source of major difficulties. No clear authority has been established, no Project Director was appointed, the relationship between the Project Coordinator and the Director DWLC was never clarified, only sporadic support was given to the project from DWLC, and coordination among Ministry of State, DWLC, MASL, and other involved institutions has been chronically poor. Key elements to reversing this situation are clarifying authority and responsibility in Colombo and decentralizing authority for field-level decisions to field personnel. The lesson for the GSL and USAID is that extra, time-consuming effort must be devoted to ensuring effective administrative arrangements for any project that has implementing agencies with weak administrative capability.

9.2. Recommended Action to be taken by USAID and GSL

A number of concrete implementation steps need to be taken by USAID and the GSL in 1986 to reverse the poor performance of the MEP to date and to ensure improvement over the remaining life-of-project. The major actions for 1986, based on recommendations contained in this evaluation, are listed in Annex 7. These have important, broad implications for the future of the MEP:

Recommendations

- 9.2.1. USAID SHOULD REALLOCATE FUNDS PREVIOUSLY ALLOCATED TO DEVELOPMENT OF SOMAWATHIYA NATIONAL PARK TO COVER THE COSTS OF THE RECOMMENDATIONS CONTAINED IN THIS EVALUATION (also Recommendation 8.1.1)
- 9.2.2. USAID SHOULD CONDUCT AN EXTERNAL REVIEW OF THE MEP IN LATE 1986, TO ASSESS STATUS OF IMPLEMENTATION.
- 9.2.3. PROVIDED THAT APPROPRIATE PROGRESS CAN BE MADE IN OVERCOMING THE PROBLEMS IDENTIFIED BY THE EVALUATION, USAID AND THE GSL SHOULD EXTEND THE PROJECT LIFE BY TWO YEARS, TO THE END OF 1989, IN ORDER TO MAKE UP FOR THE NUMEROUS CHANGES OF TOP PERSONNEL WHICH HAVE PLAGUED THE PROJECT, DELAYS INVOLVED IN USAID AND GSL TENDERING PROCEDURES, AND THE SECURITY SITUATION. INDICATORS OF PROGRESS ARE SPECIFIED IN ANNEX 7.
- 9.2.4. USAID SHOULD PROMOTE THE WIDE DISTRIBUTION OF THE REPORT FROM THE MEP EVALUATION, IN ORDER TO STIMULATE WIDER PUBLIC INTEREST, DEBATE, AND CONCERN.

**PART III. ANNEXES**

**PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK**

Project Title & Number: Mahaweli Environment Project 303 - 0075

Life of Project  
From FY1982 to FY 1987  
Total U.S. Funding: \$ 5,000,000  
Date Prepared: 30 July 1982

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes;</p> <p>Increase the opportunities for equitable economic development, employment and food production.</p>	<p>Measures of Goal Achievement;</p> <p>117,000 hectares of land cultivated, 465,000 people voluntarily settled.</p>	<p>CSL reports</p> <p>Consultant reports.</p> <p>Mission observations</p> <p>Field visits.</p>	<p>Assumptions for achieving goal targets:</p> <p>a) Total AMP program will be adequately financed. b) People will voluntarily apply for resettlement. c) Mahaweli water will reach settlers in a timely manner. d) Rainfall follows historical trends.</p>
<p>Project Purpose:</p> <p>The purpose of the project is to ensure the stability of irrigated agricultural development and human settlement in the AMP area, by providing alternative, ecologically sound, socially acceptable habitats for wildlife displaced by AMP development activities.</p>	<p>Conditions that will indicate purpose has been achieved; End of project status;</p> <p>(a) Crop records collected by NEA show that crop losses caused by wild life will be reduced by 70-80 percent of the current level of losses. (b) None of the seven current "endangered" species of animals become eliminated. (c) None of the two current "threatened" species of animals become endangered or eliminated. (d) Park buffer zones are being utilized productively by AMP people. (e) Off-farm employment opportunities available for 2000 people by 1987 (in maintenance and park related tourism and for 3000 people during construction 1983-1987).</p>	<p>a) Crop records from NEA. b) Interviews with NEA, MRLC. c) Baseline monitoring system of MRLC. d) Management of information system of NEA. e) MRLC reports of poaching and illegal cutting; reports of buffer zone uses by people. f) Interviews with settlers; MRLC and NEA records on employment.</p>	<p>Assumptions for achieving purpose:</p> <p>a) Regulations and laws for park management accepted and enforced. b) MRLC and MAM continue to cooperate in settlement, irrigation planning and demarcation of park boundaries. c) CSL commitment to AMP environment continues with budgetary support for maintenance. d) Tourism develops. e) Shift in habitat will not result in long term negative impact on wildlife.</p>
<p>OUTPUTS:</p> <p>a) Protected wildlife habitats in and around AMP area. b) Research and training capacity within MRLC strengthened. c) A System plan for park development. d) Strengthened MRLC management capability. e) Trained MRLC personnel</p>	<p>MAGNITUDE OF OUTPUTS</p> <p>(a) Four National parks established and developed. b) Wildlife Conservation Unit and Training Centre. c) Park Management Plan developed for each protected area. d) 225 new personnel recruited and working. e) 120 middle grade officers trained locally; 10 high grade officers trained in U.S. &amp; third countries.</p>	<p>Consultant reports.</p> <p>CSL reports.</p> <p>Site Visits.</p> <p>Evaluations.</p> <p>Examination of Park Development Plan</p>	<p>ASSUMPTIONS FOR ACHIEVING OUTPUTS</p> <p>a) CSL officially and legally prescribe areas as protected wildlife habitats. b) CSL will adopt the system plan. c) Local population respect new park boundaries.</p>
<p>INPUTS:</p> <p>a) Survey and demarcation of four paths. b) Construction (Roads &amp; buildings). c) Personnel. d) Technical Assistance. e) Training &amp; Education. f) Equipment. g) Contingencies.</p>	<p>"See budget"</p>	<p>AID records</p> <p>CSL records</p>	<p>ASSUMPTIONS FOR PROVIDING INPUTS</p> <p>a) AID will provide funds. b) CSL will make their contributions in a timely manner. c) T.A. will provide people with "hands on" approach. d) CSL will be able to recruit motivated people and retain them.</p>

ARTICLE I - TITLE

Mahaweli Environment Project - Mid-Term Evaluation  
(Project No. 383-0075)

ARTICLE II - OBJECTIVE

The project's purpose is to ensure the stability of irrigated agricultural development and human settlement in Accelerated Mahaweli Program area by providing alternative, ecologically sound and socially acceptable habitats for wildlife displaced by AMP developments.

ARTICLE III - STATEMENT OF WORK

I. The Project

This 5-year project is now approximately three years into implementation (i.e., slightly beyond half-way point). Although all project activities are now underway, several areas of implementation are running behind schedule; most notably, bridge, building and road construction, formation of Somvaithiya National Park, and the establishment of adequate Department of Wildlife Conservation (DWC) institutional capacity to effectively manage the new Mahaweli parks system. As a result, project output targets and progress towards purpose achievement are, also, behind schedule.

II. Purpose and Timing of the Evaluation

1. This is the first evaluation of the project. The evaluation will examine the project's progress to date in accomplishing its stated objectives and provide specific recommendations for improving project progress in the future.
2. The evaluation will be conducted in November/December 1985. The project paper calls for an evaluation 30 months after the beginning of the project to identify constraints to achieving the project purpose and recommend suggestions for solutions to problems.
3. USAID will use the findings and recommendations to redirect the project, if necessary, to better meet the project purpose.

### III. Evaluation Questions

The evaluation team will be expected to address the entire logical framework of the project, answering each of the questions specified below for each level of the framework, i.e. inputs, outputs, purpose and goal, including the linkages between each level and the underlying assumptions affecting these causal relationships. The breakdown of logical areas of interest and corresponding questions follow:

A. Input Level: Planned AID and GSL project inputs include: technical assistance; training; commodities; park development; building, bridge and road construction; and recurrent costs. The team will answer, therefore, the following input-level questions:

1. What are the actual respective levels of AID and GSL inputs to the project to date?
2. How do these input levels compare with PP plans at this point in project implementation.
3. What are the reasons for any observed discrepancies between planned and actual inputs to the project to date?
4. What recommendations does the team have for reducing any such discrepancies and improving project implementation? Are the initially planned project input levels still valid, feasible and appropriate? Should they be altered? Are the existing mechanisms for project implementation functioning well? Should they be altered?
5. How should the team's input level recommendations be carried out? Who should be responsible for accomplishing each action required? What is the relative priority (vis-a-vis project success) for implementation of each of the team's recommendations?

B. Output Level: Planned project outputs include: establishment of four national parks; development of management plans, buffer zones and enriched species habitat for each of the parks; construction of required park infrastructure (management, tourism and staff facilities; access bridges, culverts and roadways); recruitment and training of additional DML personnel; and establishment of in-country park management, training and research programs. The team will answer, therefore, the following output-level questions:

1. What is the status of achievement of each of the planned project outputs to date?
2. How does this level of output achievement compare with PP plans at this point in project implementation?
3. What are the reasons for any observed discrepancies between planned and actual project outputs to date?
4. What recommendations does the team have for reducing any such discrepancies and improving performance in achieving project outputs? Are the initially planned project outputs still valid, feasible and appropriate? Should they be altered? Are the existing mechanisms being employed to achieve project outputs functioning well? Should they be altered?
5. How should the team's output-level recommendations be carried out? Who should be made responsible for accomplishing each action required? What is the relative priority (vis-a-vis project success) for implementing each of the team's recommendations?

C. Purpose Level: The project purpose is stated above. The project purpose will have been met when the following "end-of-project status (EOPS)" conditions have been met:

- Crop damage caused by wildlife reduced by 70-80% of 1982 levels of losses.
- None of the seven current "endangered" species of animals become eliminated.
- None of the two current "threatened" species of animals become endangered or eliminated.
- Park buffer zones are being utilized productively by the settler population.
- Off-farm employment opportunities available for 2,000 people by 1987 in maintenance and park-related tourism and for 3,000 people during construction.

The team will address, therefore, the following purpose-level questions:

1. What is the progress towards achievement of project EOPs to date?
2. How does this level of progress compare with PP plans at this point in project implementation?

3. What are the reasons for any observed discrepancies between planned and actual EOPs progress to date?
  4. What recommendations does the team have for reducing any such discrepancies and improving progress in achieving project EOPs? Is the initial project purpose still valid, feasible and appropriate? Should it be altered? Are the initially planned EOPs still valid, feasible and appropriate? Should they be altered? Are the existing mechanisms being employed to achieve project EOPs functioning well? Should they be altered?
  5. How should the team's purpose-level recommendations be carried out? Who should be responsible for accomplishing each action required? What is the relative priority (vis-a-vis project success) for implementing each of the team's recommendations?
- D. Goal Level: The project goal is to increase the opportunities for equitable economic development, employment and food production. This will be accomplished when 117,000 hectares of land are cultivated in and around the AMP and when 465,000 people are voluntarily settled on this land. The team will address, therefore, the following goal-level questions:
1. What progress has been achieved towards accomplishing the project goal to date?
  2. What recommendations does the team have for improving progress towards the achieving project goal in the future?
  3. Is the project goal still valid, feasible and appropriate? Should it be altered? If so, how?
- E. General: In addition to the above, the team will also address the following more specific project-related questions:

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1. Are the personnel currently assigned sufficient (in number and quality) for efficient project management and administration? Are current mechanisms being employed sufficient for effective project implementation and proper project accountability? What recommendations does the team have for improving project management and administration in the future? How and when should these recommendations be implemented and who should be responsible for ensuring that they are carried out?
2. Is the current project implementation schedule still valid, feasible and appropriate? Is the proposed timing of inputs and outputs still appropriate for achieving the project purpose and goal prior to the PACD? What recommendations does the team have for modifying the project implementation schedule to better achieve project success? Specifically, will the project require an extension of time to adequately achieve its objectives, and if so, how long?
3. Is the current project monitoring system functioning well? Is sufficient information available to the team to adequately address the above questions and thoroughly assess the present status of the project? What information is lacking and how may it be obtained in the future? What are the team's recommendations for improving the project monitoring system?
4. What effects, if any, have other donor/GSL agencies' actions had on project implementation to date? What recommendations might the team have for reducing negative and/or increasing positive other donor/GSL agency effects on the project in the future?
5. What effects has the national security situation had on the project to date? What recommendations might the team have for reducing security-related impacts on the project in the future?
6. What specific positive or negative impacts has the project had on women to date? What recommendations does the team have for increasing positive and/or reducing negative project impacts on women in the future?

7. Are there any other project-related issues not addressed above of which project management should be made aware? If so, what are these issues and how, when and by whom should they be dealt with?

**IV. Methodology and Procedures**

1. The duration of the evaluation will be approximately 30 days, beginning on or about November 8, 1985. The Management/Administrative Specialist will act as Team Leader responsible for coordinating the preparation and editing of the final report.
2. The Team Leader and Park Planner will spend two days in Geneva, Switzerland prior to the in-country evaluation work for consultations with the former USAID Project Manager, Mr. Vitus Fernando.
3. The Team Leader will arrive in Sri Lanka one week before the other expatriate team members. He, in conjunction with the USAID Project Manager and the Department of Wildlife Conservation project management representative, will collect Mission and GSL documents related to the project, set up meetings with USAID and GSL officials for the initial briefing on the purpose and scope of the evaluation and arrange preliminary site visit itineraries.
4. The team will spend approximately 1 week in the field. The rest of the time will be spent in Colombo reviewing documents, talking with concerned officials and writing the evaluation report. The team will be expected to work out of the hotel since USAID will be able to provide only minimal office space in Colombo. The Team Leader will spend an extra week in Sri Lanka to finalize the evaluation report. The evaluation schedule follows:

November 8 - 9	Geneva consultations (Team Leader and Park Planner only).
November 11 - 16	Team Leader arrives in Colombo, designs evaluation work plan, sets up appointments and arranges transportation.
November 18	USAID/GSL orientation meeting with team.
November 18 - 24	On site field visits and report writing.

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- November 26 - 28 Write report
- November 28 Submit draft
- November 30 Brief USAID and GSL officials on major findings and recommendations  
Park Planner departs Sri Lanka.
- December 2 - 7 Remaining team members finalize, edit and print the report and submit to USAID.

5. Using Chapter 12 of AID Handbook 3 as guidance, the Team Leader will be responsible for developing a methodology for conducting the evaluation, including the division of responsibility among team members. The team will specify the basis for each finding, conclusion and recommendation. Whenever possible, the team will use and report quantifiable or objective evidence and will explain the circumstances when this is not possible. Changes from project inception to the present will be measured through review of project reports and site visits.
6. The team will use, among others, the following sources of information:
  - Project Identification Document
  - Project Paper
  - Annual Project Work Plans
  - USAID Project Files
  - GSL Project Files
  - Miscellaneous Project Contracts and Tender Documents
  - Existing and Proposed GSL Legislations

**ARTICLE IV - REPORTS**

**1. Format of the report:**

- Table of Contents
- Map (s)
- Acronyms
- Executive Summary
- Basic Project Identification Data Facsheet
- Statement of Conclusions and Recommendations
- Body of Text (limited to 20 pages)
- Appendices (including the evaluation scope of work, description of the methodology used and any other pertinent data)

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2. Submission of report

A draft report will be presented to the Mission o/a November 28, two days prior to the Mission debriefing. The Team Leader will submit to USAID 25 copies of the final report o/a December 7 prior to his departure

3. Debriefing

The team will meet with the USAID and GSL staff on November 30 for a debriefing.

ARTICLE V - RELATIONSHIPS AND RESPONSIBILITIES

Consultants will be responsible to the Mission Director (USAID/Sri Lanka) or his designee.

ARTICLE VI - TERMS OF PERFORMANCE

The effective date of this work order is November 8, 1985 and the estimated completion date is January 15, 1985.

Subject to the written approval of the Project Manager (see block 5 of the Cover Page), the estimated completion date of this work order may be extended provided that such extension does not cause the elapsed time for completion of the work, including furnishing of all deliverables, to extend beyond 30 calendar days from the original estimated completion date. The contractor shall attach a copy of the Project Manager's approval for any extension of the term of this order to the final voucher submitted for payment.

It is the contractor's responsibility to ensure that Project Manager-approved adjustments to the original estimated completion date do not result in costs to the Government which exceed the total amount obligated for the performance of the work. Under no circumstances shall such adjustments authorize the contractor to be paid any sum in excess of the total amount obligated to this order for the performance of the work.

Adjustments which will cause the elapsed time for completion of the work to exceed the original estimated completion date by more than 30 days must be approved in advance by the Contracting Officer.

Evaluation Work Plan and Schedule

The evaluation scope of work is outlined in the PIO/T issued from USAID/Colombo. Based on this scope of work, an evaluation work plan and schedule is described in greater detail in the sections below.

A. Work Plan

The evaluation team will perform the following tasks during the three-week period November 18 through December 6, 1985:

Task 1: All team members are expected to review and become familiar with the original project design framework as described in detail in the Project Paper. A thorough understanding of the original project design will be essential to the evaluation process.

Task 2: Team members will be assigned specific areas of responsibility in gathering information required for subsequent analysis and preparation of the evaluation report. For each category of information, lead responsibility will be given to one designated team member, with a second team member identified to provide assistance or back-up as needed. Information areas and corresponding team members assigned responsibility are as follows:

a) Mahaweli Parks System Establishment and Physical Development. Legal status of new parks as protected wildlife habitat; physical demarcation of park boundaries; establishment of buffer zones; development of physical infrastructure (roads, bridges, buildings).

LEAD RESPONSIBILITY: J. MCNEELY  
SUPPORT: M. DISSANAYAKE

b) Park Planning and Management. Establishment of policy guidelines for development and management of Mahaweli parks; development of management plan for each protected area in system; establishment of park planning and management functions within DWLC personnel structure.

LEAD RESPONSIBILITY: J. MCNEELY  
SUPPORT: M. DISSANAYAKE

c) Conservation of Wildlife. Crop losses caused by wildlife encroachment on agricultural land; carrying capacity of wildlife habitat in protected areas in relation to populations of threatened and endangered species (e.g. elephants); establishment of wildlife research and monitoring system to provide information needed for management decisions; progress in habitat enrichment (shelter, forage and improved water sources); procedures for handling of pocketed elephants (translocation, capture and domestication, other options).

LEAD RESPONSIBILITY: J. SEIDENSTICKER  
SUPPORT: R. WIJEWANSA

d) Institution-strengthening. Establishment of planning framework for DWLC institutional development including development of professional and technical staff to plan, implement and evaluate an expanded program of park management activities; recruitment and training of new personnel selected for key positions within DWLC; recruitment and training of additional mid-level and entry level personnel to meet projected DWLC staffing needs; development of wildlife research and monitoring capability within DWLC; development of education and training capability within DWLC; development of public relations, media and rural extension activities of DWLC.

LEAD RESPONSIBILITY: M. PHILLEY  
SUPPORT: J. SEIDENSTICKER

e) Local Participation. Productive utilization of designated buffer zone areas by local people; provision of alternative employment opportunities in park-related construction, maintenance and tourism for local villagers and AMP settlers; respect for park boundaries by local population including attitudes toward illegal cutting, poaching, etc.; participation of indigenous NGO's and private voluntary groups in habitat enrichment, afforestation and rural extension activities supported by project; use of park resources and facilities by public.

LEAD RESPONSIBILITY: G. WICKRAMASINGHE  
SUPPORT: J. MCNEELY

f) Project Administration and Management. Effectiveness of present project administrative arrangements; assessment of project implementation including financial management, personnel management,

USAID/Ministry of State/DWLC/MASL relationships and decision-making procedures incorporating project monitoring and evaluation of progress.

LEAD RESPONSIBILITY: M. PHILLEY  
SUPPORT: R. WIJEWANSA

Task 3: The team will analyze information relevant to the evaluation scope of work. Specifically, the team will address priority questions as well as related subordinate questions derived from the scope of work. The questions to be addressed include the following:

- 1) What is the extent of visible and measurable progress and impact to date, with principal examples, in meeting original output objectives, purpose and goal of the project? Are outputs, purpose and goal considered to be realistic? What is the prospect of the project achieving planned end-of-project status (EOPS) conditions in the timeframe originally envisioned? Should the EOPS be altered in any way? Will the project require an extension period beyond the original PACD?
- 2) Have USAID and GSL inputs (funding and personnel requirements) been available as originally planned and in pace with the project's implementation schedule? Are adjustments in input levels and implementation scheduling required at this evaluation mid-point to better assure achievement of EOPS? Can such adjustments be accommodated by the project's administrative and management structure?
- 3) What problems have been encountered to date in terms of project administration and management (cite specific examples) and for what reasons? Is it possible to improve the project's administrative structure and management procedures? How can this be best accomplished?
- 4) Have park infrastructure development activities (roads, bridges, buildings) progressed as originally scheduled in the implementation plan? Was the original schedule realistic/appropriate? What problems have been encountered? What can be done to improve the process of local contracting and the quality of construction?
- 5) Does successful project implementation depend on the existence of a systems plan for development of the Mahawel' national parks as well as park management plans specific to each of the four protected areas? Do such plans now exist or are they in process of preparation? Should and can the park planning process be expedited as a matter of priority importance to project implementation?

- 6) Is the contiguous natural habitat provided by the Mahaweli parks able to accommodate wildlife (e.g. elephants) displaced by agricultural development? Are instances of "pocketed" elephants increasing or decreasing? Is the rate of damage caused by elephants and other wildlife to settler households and crops increasing or decreasing? What options are available and affordable within project resources to minimize encroachment of elephants and other wildlife onto agricultural lands?
- 7) Are development of buffer zones and habitat enrichment activities proving to be effective wildlife management tools in view of DWLC experience to date in the Mahaweli area? Are present contractual arrangements (e.g. with Nation Builders) resulting in significant progress in buffer zone afforestation and habitat enrichment? What can be done to improve project performance in this area?
- 8) Are present DWLC staff sufficient in terms of number and expertise to manage project resources and implement planned activities? Is actual new recruitment of DWLC personnel in pace with original project projections? Are specific areas of in-service technical skill still required by DWLC? Are the new recruits assigned to "specialist" positions being given responsibility and authority commensurate with original USAID/GSL expectations?
- 9) Have training and technical assistance services provided by the U.S. National Park Service been satisfactory in terms of scope, timing and impact on DWLC staff development and institutional effectiveness? Has the in-country workshop format for these services been effective? What problems have occurred and how may they be corrected? Are adjustments or modifications in the PASA implementation plan and schedule warranted to better assure successful results?
- 10) Are local communities and AMP settlers participating in the project in the economically beneficial manner projected in the Project Paper? What has been the extent of local employment in park-related construction and maintenance? Are local people able to utilize designated buffer zone areas for approved subsistence activities (grazing, fuelwood collection, thatch, bee-keeping, etc.)? Are GSL/DWLC personnel providing contact with local people to explain the options available to them in utilizing park-related resources to their benefit?

11) Are local communities and the general public being adequately exposed to conservation education messages supported by the project? What has been the performance in this area and can it be improved? Are local attitudes toward illegal cutting and poaching being affected by this project activity? Are other courses of action feasible to strengthen public awareness of the Mahaweli parks and their value to wildlife conservation as well as environmental soundness of Mahaweli development?

12) Special Considerations and Questions: Other donor and/or GSL agencies' actions; national security situation; project impacts on women (as stated in the PIO/T evaluation scope of work, page 5).

Task 4: The team will present major findings with respect to the questions outlined above and substantiate these findings with empirically verifiable information. The major findings and their empirical basis shall be expressed succinctly in accordance with ANE Bureau procedural guidelines for evaluation reports.

Task 5: The team will formulate recommendations matching each of the findings and focusing on project management needs. Feasibility of implementation is an important criterion in developing recommendations. Recommendations shall be expressed succinctly in accordance with ANE Bureau procedural guidelines for evaluation reports.

Task 6: The Team Leader will coordinate preparation of the first draft evaluation report. Writing assignments will be spread among team members as deemed appropriate. The initial draft will be reviewed and edited before submission to USAID.

Task 7: Following submission of the first draft to USAID, the evaluation team will conduct a briefing for USAID staff. A critical review of the evaluation report, including suggestions for further revision and editing, is expected from the briefing.

Task 8: The Team Leader will coordinate the final revision, editing and printing of the project evaluation report. The report shall be submitted to USAID prior to the Team Leader's departure.



November 22

8:00 a.m.--Depart for Maduru Oya  
National Park  
--Interviews with Veddha  
Community, DWLC field  
staff

p.m.--Continue through park;  
site observations

--Overnight (Pimbuwerta)

November 23

8:00 a.m.--Depart for Flood Plains  
National Park; site  
observation, interviews  
with local people

p.m.--Visit proposed  
bridge site at Amban  
Ganga; extension to  
Wasgomuwa N.P.

eve.--Overnight (Giritale)

November 24

a.m.--Visit Sigiriya village  
to see "elephant  
barrier" built by local  
people  
--Return to Colombo

WEEK TWO:

November 25

a.m.--Review of preliminary  
findings, conclusions,  
recommendations  
--Writing assignments  
--USAID interviews

6:00 p.m.--Team meeting to  
review progress

November 26

11:00 a.m.--Meeting with USAID  
staff to discuss  
preliminary findings,  
recommendations

November 28

2:30 p.m.--Meeting at Ministry of  
State to brief  
Secretary

November 30 10:30 a.m.--Meeting with Director,  
DWLC  
--Submit draft evaluation  
report to USAID

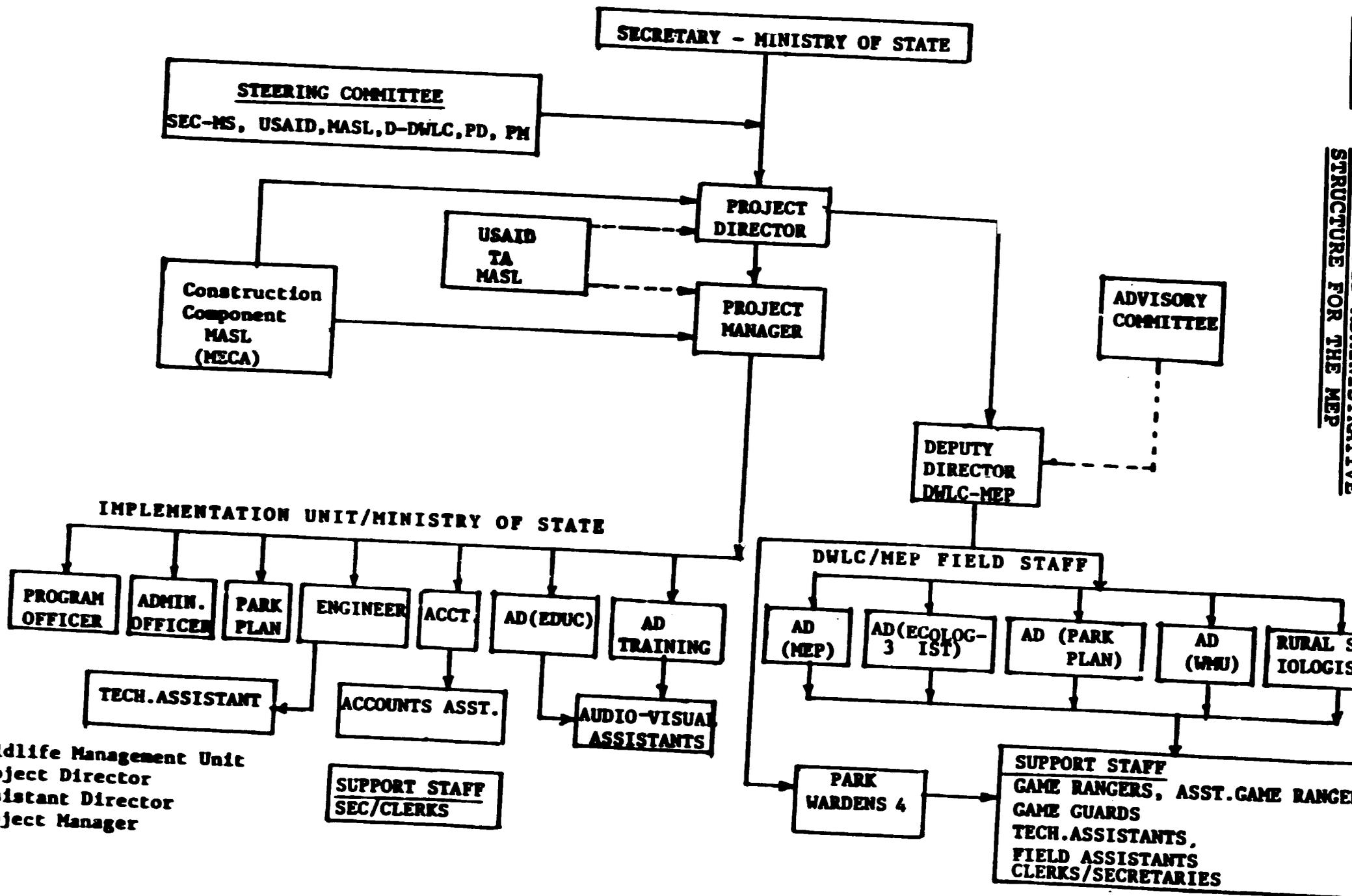
WEEK THREE:

December 2 10:00 a.m.--Briefing at USAID

December 2-5 --Revision, editing

December 5 10:00 a.m.--Briefing at Ministry  
of State (GSL agencies,  
USAID)

December 6 --Submit final report



RECOMMENDED ADMINISTRATIVE  
 STRUCTURE FOR THE MEP

WNU Wildlife Management Unit  
 PD Project Director  
 AD Assistant Director  
 PM Project Manager

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ACTUAL EXPENDITURE AS OF DECEMBER 4, 1985 US\$

	1983		1984		1985		TOTAL	
	AID	GSL	AID	GSL	AID	GSL	AID	GSL
Park Development	-	-	-	35,032	18,337	-	18,337	35,032
Buildings/Road/Bridge	-	12,043	-	9,998	-	61,103	-	83,144
Commodities	-	2,502	132,854	-	55,948	535	188,802	3,037
Technical Assistance	-	-	13,088	-	4,736	-	17,824	-
Training	10,944	1,605	44,563	-	35,139	-	90,646	1,650
Recurrent Costs	7,299*	-	80,029*	-	70,247*	-	157,575*	-
							473,184	122,863

ANNEX 5. FINANCIAL STATUS OF THE MEP

\* To be reimbursed by AID to GSL

**BUILDINGS PROGRESS CHART**

	<u>PP</u>	<u>Subsequent DWIC Schedule</u>	<u>Actual</u>
(A) Buildings Design completed	2/83	12/84	12/84
(B) Construction Bid documents completed	3/83	1/85	1/85
(C) " " " approved	4/83	2/85	
(D) Request for construction proposals	4/83	3/85	
(E) Contractors selected	6/83	5/85	
(F) Construction begins	7/83	-	
(G) 1983 Construction program completed	12/83	-	
(H) 1984 " " "	12/84	-	
(I) 1985 " " "	12/85	-	
(J) Regional Headquarters completed	12/85	-	
(K) All construction completed	6/86	10/87	

**Expenditure Schedule (Project Paper) \$**

<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>Total</u>
142,000	290,000	641,000	254,000	-	1,327,000

**ROADS PROGRESS CHART**

	<u>PP</u>	<u>Actual</u>
(A) Road Repair Design Completed	2/83	
(B) Bid Documents completed	3/83	
(C) Bid Documents approved	4/83	
(D) Request for construction proposals	4/83	
(E) Contractor selected for Roads	6/83	
(F) Construction begins	7/83	
(G) 50 miles of Road Improved	12/83	
(H) 50 miles of Road "	12/84	
(I) 85.5 miles of road improved	12/85	
(J) 36 miles of road completed		
(K) Remaining construction completed	16/86	

**Annual Expenditure Schedule (Project Paper) \$**

<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>Total</u>
32,000	36,000	418,000	481,000	-	967,000

	PP —	Subsequent DNLC Schedule	Actual _____
Prequalification advertised			2/84
Submitted to USAID			8/84
Approved by USAID			12/84
Bid Documents			
Submitted to USAID			10/84
Approved by USAID			2/85
Issue bid documents		4/85	
Contract executed		6/85	
Construction starts		7/85	
Piers completed		2/86	
Construction ends		10/86	

Original planned expenditure - Rs. 5 million  
 Design consultants estimate - Rs.6.7 million  
 Actual cost of bids received - Rs.10-12 million

## ANNEX 7. RECOMMENDED 1986 IMPLEMENTATION SCHEDULE

1985

December

GLS and USAID review MEP Mid-term Evaluation

1986

January

USAID and GSL review and agree on project management structure and implementation plan (5.2.1, 6.1.1, 6.1.4, 7.1.1, 7.1.2, 7.1.3, 7.1.4, 7.3.1, 9.1.2, 9.1.4).

GSL implements the revised MEP management structure and schedule by appointing MEP senior staff (7.2.1).

DWLC transfers construction package for MEP to MASL (2.3.1, 2.3.2, 2.3.3).

Contract TA: Park Systems Planner (3.1.2, 5.2.1).

February

Appoint Assistant Director, Ecologist, Veterinarian, Game Ranger, and other staff for the Wildlife Management Unit-MEP (4.1.1, 4.4.1).

DWLC appoints five additional new senior positions for the MEP: Rural Sociologist, Training Officer, Legal Officer, 2 Ecologists (5.1.1).

Send Key Personnel to India and Malaysia to review electric fence and other barrier technology for inclusion in Parks System Plan (4.1.2).

March

Park Systems Planner arrives in Sri Lanka and initiates the System Planning Process (3.1.1).

DWLC-MEP contracts park boundary and buffer zone analysis to be completed within 60 days (4.1.4).

USNPS workshop on Staff Development and Inservice Training produces a draft training plan for the life of the MEP and the work plan for the Wildlife Training Center (5.5.1, 6.3.1).

USNPS workshop on Conservation Education and Park Interpretation held and Public Awareness and Education Plan completed and initiated (6.4.1).

April

Park System planning process proceeds as top MEP priority

May

DWLC and other GSL departments hold workshop on buffer zones and buffer zone management (2.2.1, 6.3.1).

Comprehensive workshop for the Park System Plan 2.2.1, 2.2.2, 2.3.3, 3.1.3, 4.3.1, 6.3.1).

June

MEP Park System Plan finalized.

July

Final site plan for all construction approved in accord with the MEP Parks System Plan; construction initiated according to construction plan (2.3.2, 2.3.3).

Contract University to do feasibility study on the private sector participation in elephant capture and conservation (60 days to completion) (4.4.2).

August

USNPS Academic Seminar on Environmental Enhancement through Community Development and Buffer Zone Management (6.3.1).

September

Workshops held for each national parks in MEP and final drafts of national park management plans completed in accord with MEP Parks System Plan (2.1.1, 3.1.4, 3.2.1, 3.2.2, 3.2.3, 6.3.1).

October

MEP ecologists initiate monitoring program for threatened and endangered species within the AMP areas and associated national parks (4.2.1, 4.2.2, 4.3.2).

DWLC Rural Sociologist submits draft work plan (6.1.3, 6.2.1, 6.4.1).

November

Finalize the drafts of the inservice-training plan for life of the MEP and the establishment of the Wildlife Training Center (5.5.1).

December

MEP implementation review by external evaluator(s).

Decision Point: extension of MEP (9.1.1, 9.1.3).

## ANNEX 8. TECHNICAL COMMENTS ON THE MADURU OYA DRAFT MANAGEMENT PLAN

The draft Maduru Oya Management Plan is an excellent first effort by the DMIC planning team. As part of the MEP evaluation, the draft management plan was reviewed. The following are the main comments:

- The objectives of Maduru Oya were considered separate from the overall protected area system in the Mahaweli basin, so it is impossible to determine their appropriateness.
- The role of chena cultivation and the impact of Vadda people was oversimplified. The populations of elephants, deer, and other large mammals are highest in areas of abandoned chenas, indicating that shifting cultivation is an important part of the current high densities of large mammals in the project area. Totally halting such human influences may well reduce the carrying capacity of Maduru Oya for large mammals, thereby driving "surplus" animals outside of the park and increasing conflicts with local farmers. It is worth considering the possibility that the best strategy for maintaining high densities of large mammals in Maduru Oya and reducing conflicts with surrounding lands would be to maintain carefully controlled numbers of Vadda chena agriculturalists within the protected area. This might require a reconsideration of the status of the area.
- The plan gives insufficient attention to surrounding lands and the importance of explicit policies for dealing with local people (e.g., giving local people preference when hiring casual labor, including specific elements on surrounding lands in all training programs).
- The proposals on elephant management need to be discussed with experts in this field; staff requirements and financial implications of the elephant management program need to be specified.
- Habitat enrichment and control of exotics (including terrestrial weeds such as Eupatorium as well as aquatic weeds such as Salvinia) need to be expanded.

Certain factual errors need to be corrected (e.g., pangolins are mammals, not reptiles; cormorants are not large wading birds), in order to ensure that the plan is considered authoritative.

- The planning team, while doing a competent job, did not involve all available expertise. The Assistant Director MEP was called off for duties outside the project area during the planning workshop. Experts from the Mahaweli Ministry, elephant ecology experts from local universities, and interested FVOs were not involved. This is in marked contrast to a similar exercise which took place in August 1985 in Sinharaja Forest Reserve, where over 30 persons from all sectors were involved in the management planning workshop.

## ANNEX 9. WILDLIFE MANAGEMENT UNIT

Major reduction in crop losses by wildlife will require that the DWLC implement an active wildlife control program. It is recommended DWLC establish a Wildlife Management Unit to function within the AMP area.

The establishment of the Wildlife Management Unit with the primary area of operation outside the established wildlife reserve system is an expansion of the scope of activity of the DWLC. It is a primary EOPS of the MEP.

The Unit is the primary active management tool for reducing crop losses caused by wildlife within the AMP area. While the management and control of elephants is a major task for the Unit, the Unit will also be responsible for the management and control of other problem wildlife in the agricultural production areas.

The activities of the Unit would include:

Monitoring wildlife activities and documenting the patterns and extent of crop loss by wildlife in the AMP area.

Monitoring the movement of wildlife, particularly elephants, in the boundary areas of the wildlife reserves and in areas under agricultural production.

Develop the technical capacity and guidelines to capture and transport problem wildlife species and to drive problem wildlife from agricultural production areas when that is the most economical control option. The Unit would serve as the liaison to the private sector efforts to capture elephants when that program is initiated.

Conduct research on and establish the most effective and economically viable means of establishing barriers between wildlife reserves, forest plantation areas, and agricultural production areas.

Provide wildlife extension services to farmers to improve their abilities to control crop losses caused by wildlife.

The Wildlife Management Unit should be composed of:

- An Senior DWLC employee with considerable experience in the management and control of problem animals, especially elephants, in areas outside the established wildlife reserve system in Sri Lanka. This person will serve as the leader of the Unit and hold the rank of Assistant Director under the Deputy Director DWLC-MEP.

## ANNEX 9

- **Ecologist:** will be responsible for the monitoring and research activities of the Unit.
- **Veterinarian:** will assist the Unit Leader in moving and, where necessary, the capture and transport of problem animals.
- **Administrative Assistant:** coordinates and supervises administrative support for the Unit.
- **Game Ranger:** supervises the guards and casual laborers. The Ranger will work directly under the supervision of the Unit Leader.
- **2 Range Assistants:** One Range Assistant will work directly under the ecologist in the the research and monitoring activities of the Unit; the second Range Assistant will work under the Game Ranger.
- **Administrative Support Staff (2):** One typist and one clerk to work under the supervision of the Administrative Assistant.
- **Guards (6):** to assist in Unit operations and also provide extension services to farmers to reduce crop damage caused by wildlife.
- **Casual Laborers:** will be hired by the Unit as needed.

The Unit must have its own transport; 2 4-wheel drive vehicles are required. When major activities of the Unit are to be undertaken, it will have the support and assistance of other personnel as needed from the MEP-national parks.

In the last two or three years, great emphasis in the DWLC has been placed on the use of capture guns and immobilizing drugs to capture and move elephants. It is recommended that the Wildlife Management Unit take advantage of the traditional methods of capturing elephants by employing Pannickers and using their traditional technology in the Unit's operations. The successful operation of the Unit will require a careful blending of technologies — traditional and new — if it is to develop the capability to carry out its very important mission.

The need for the Wildlife Management Unit to function as outlined above was recognized in the PP logical framework and was listed as a major output of the MEP. However, the terms of reference, structure, training level, and budget for this Unit were not fully developed within the PP or the implementation plan for the project. Strengthening the DWLC's ability to manage wildlife outside protected areas should be a major expected output of the MEP.

## ANNEX 10. SCOPE OF WORK FOR PARK BOUNDARY AND BUFFER ZONE ANALYSIS

**Problem:** Land-use activities at the boundaries of a wildlife reserve influence ecological patterns and processes in that reserve. There are obvious influences such as uncontrolled resource extraction activities by local residents in reserves that can result in significant habitat changes at boundaries. A second example is the transfer of diseases from livestock to wild ungulates at this interface. Local agricultural areas provide an abundant food source and the reserve can serve as a refuge to which an overabundant wildlife population retires during the day. In the long-term, problems develop when wildlife cannot disperse across land-use barriers and effective population sizes are reduced below thresholds that prevents the occurrence of deleterious inbreeding effects. From an economic and sociologic point of view, the effectiveness of boundaries strongly influence if the wildlife reserve can survive in the regional land-use matrix over the long haul. The key phrase is "effective boundaries promote good neighbors".

What conditions result in effective boundaries for wildlife reserves? Aside from some initial obvious answers such as not planting rice or corn on boundaries or that wide bodies of water can deter the movements of wildlife from reserves, the conditions resulting in effective boundaries are not immediately obvious and should be subject of analysis.

**Scope of work:** The analysis should be conducted in two parts. Government agents and other officials and the records of the the DWEC should be questioned and examined to identify where the primary trouble spots are along the existing boundaries of all older established wildlife reserves in Sri Lanka. The survey should produce a map that accurately reflects the conditions along wildlife reserve boundaries in Sri Lanka.

A sample of these sites, should be visited by the survey team to view and characterize conditions at each of these locations. Fifty such sites is suggested as an initial sample. An equal or greater number of sample sites should be visited along boundaries where no problems are reported.

There are several multi-variate statistical procedures that could be useful in this analysis. The possibility of applying these formal techniques should be explored but, the survey and analysis should be thought of as a pilot study where an effective methodology needs to be developed. It is suggested in this survey and analysis that careful attention be given to habitat, land-form, land-use, and the location of the boundaries in relations to seasonal availability of resources for the wildlife populations in the reserve. The attitudes of local people towards wildlife at the sample sites must be assessed. Where there are problems, it is important to identify when and why problems began. If there were problems in the past and are no longer problems, identify why not.

The status of conditions along the boundaries of the wildlife reserve system in Sri Lanka should be produced from the efforts of the review. The survey of problem and satisfactory boundaries will produce a profile of conditions that can result in reduced conflicts between wildlife reserve and their neighbors.

Duration: The survey and analysis should be completed within 60 days after the project is initiated. A final report with supporting documentation would be produced.

Qualifications: The survey and analysis should be conducted by a team that includes a wildlife ecologist and rural sociologist. They must have considerable experience in wildlife and national park management in Sri Lanka. The team leader must have a Ph.D. The team will be independent of the DWLC and receive the full support of the Department.

ANNEX 11. STATUS AND DISTRIBUTION OF THREATENED AND ENDANGERED SPECIES IN THE AMP AREA AND ASSOCIATED WILDLIFE RESERVES

A major purpose of the MEP is to assure that none of the nine threatened and endangered species present in the AMP area and surrounding protected areas become eliminated. These species include elephant, leopard, purple-faced langur, toque macaque, swamp crocodile, estuarine crocodile, Bengal monitor, python, and Red-faced Malkoha.

According to the 1980 AMP Environmental Assessment (TAMS: Environmental Assessment of the AMP, 1980, E-15), the Bengal monitor had an extensive distribution and was found more or less continuously throughout the project area. The DWLC field staff said this species was still well distributed throughout the AMP area and in the newly established wildlife reserves.

For reasons unknown, the distribution of the Red-faced Malkoha was restricted to the riverine forest between Wasgomuwa National Park and the northern sector of System C (TAMS: Environmental Assessment of the AMP, 1980, E-15). MEP field staff have reported a recent observation of this bird in the newly established Maduru Oya National Park.

The crocodiles, of course, are restricted by their need for an aquatic environment. The swamp crocodile has been reported in the new canal system in the AMP area but this was not considered an alarming or dangerous situation by the DWLC field staff or the MA Environmental Officer. If any capture or control activity is required, it would be the responsibility of the Wildlife Management Unit. The Director of DWLC indicated his approval of this activity during our interview.

The status of the estuarine crocodile is not known to the DWLC at this time because its habitat is the estuaries at the mouth of the Mahaweli and security risks have placed this area off-limits for DWLC activities for the present.

The Evaluation Team had the good fortune of observing a large group of elephants (30+) in the Wasgomuwa National Park and their sign was observed in Flood Plains and Maduru Oya national parks and in many locations within the AMP area.

The Evaluation Team observed signs of leopards in the Maduru Oya National Park. DWLC field staff reported that leopards could be found in all the national parks and, indeed, the newly established wildlife reserve system as well as much of the AMP area appears to be good leopard habitat.

## ANNEX 11

The toque macaque and the purple-faced langur are abundant only along the riverine forests of the Mahaweli and near tanks such as Kantalai, Kaudulla, and Parakrama Sumudra according to the TAMS report (TAMS: Environmental Assessment of the AMP, 1984, E-15). Habitats suitable for these species have been included in Flood Plains and Wasgomuwa national parks. With the establishment of the Maduru Oya National Park and the year-round provision of water in the newly established tanks, we would expect that habitat suitability for these monkeys to have increased in these areas.

Information of the present distribution and status of the python in the AMP area or the established reserve system is not available.

## SRI LANKAN TRIP REPORT

The five week "Introduction to U.S. National Park Management" for the six Sri Lankan Nationals was conducted from May 25 through June 29, 1985. The participants were:

1. Shirley Perera, Assistant Director, (Resource Manager)
2. (Dissa) P. R. D. Dissanayake, Ecologist
3. (Lal) U. K. G. K. Padmalal, Planner
4. K. C. Samson, Park Warden (Wilpattu National Park)
5. (Sheik) S. Wazeer, Assistant Director (Mahaweli Environment Project)
6. Ms. Eeasha Nanayakara, Interpreter—Trainer

The professional instructors and host for the 5-weeks were Michael Watson, Instructor at Stephen T. Mather Training Center, Harpers Ferry, West Virginia, and Tom Thomas, International Park Affairs, Washington, D.C.

The basic objectives of the program were to:

1. Present onsite, a general overview of Park policy, philosophy, administration, regulation, and daily operations as a guide and reference for developing Sri Lanka parks;
2. Create written documentation of basic aspects of park planning, management, and operations to serve as a reference and checklist for use in Sri Lanka;
3. Design individual and group assignments for participation in park interpretive and management programs. These assignments were designed to observe and work with park employees and visitors. Written evaluations required to show relationship to Sri Lankan parks;
4. Participate in training programs for seasonal and permanent park employees to identify methods, processes, and training skills to be used in Sri Lanka; and
5. Identify and work with park and training center staff on basic training needs. To identify and list realistically those items and equipment needed for training, planning and operations, interpretation, research and resource management operations. Prepare a checklist for setting training priorities.

These objectives were met by a planned travel itinerary to selected parks which had exemplar programs on the many subjects including interested professional staff available to work with the trainees. The sites and topics for lecture and discussion were:

## 1. Washington, D.C.

Orientation to program  
 NPS philosophy  
 Travel logistics  
 Museum and monument visits  
 Program evaluation at closing

## 2. Great Falls, Maryland and Virginia and Shenandoah National Parks

Canals, their use historic and interpretive values  
 Nature trails with guide books  
 Visitor center slide and movie programs  
 Visitor contact  
 Both fee collection and information desk operation

## 3. Harpers Ferry Design Center

Interpretive Programming  
 Brochures  
 Audio/Visual,  
 Sign (Interpretive and Informational) Equipment—Methods and  
 Processes.

## 4. Stephen T. Mather Training Center

Training methods  
 Package training program  
 Learning skills and processes  
 Facility design

## 5. Yellowstone and Grand Teton National Parks

Wildlife management  
 Interpretive programs including signs, talks, and trails  
 Public relations skills  
 Working with NGOs  
 Special event considerations  
 Cooperation and relations with other government agencies

## 6. Denver Service Center

Planning skills and processes  
 Design of trails  
 Location and building design  
 Road layout  
 Park management or masterplan

**7. Rocky Mountain National Park**

Resource management skills  
 Research values and methods  
 Backcountry or wilderness use and management  
 Campground planning and management  
 Employee housing and social activities

**8. Grand Canyon National Park and Horace M. Albright Training Center**

Concession operations and contracting  
 Transportation such as shuttle bus systems  
 Museum collections (their care and storage)  
 Training facilities and housing  
 Resource management and training equipment  
 Designing and planning a training course

**9. Biscayne and Everglades National Parks and Big Cypress Preserve**

Results on-site of Denver Service Center planning exercises  
 Wetland study and research  
 Another park transportation system-Tram  
 Marine and coastal management concerns  
 Conservation of underwater plants, animals, and historic structures

Each of the parks visited assigned specific staff members to work with and instruct on the subjects listed.

Each trainee was asked to keep a daily log of activities giving evaluations and critiques of programs and activities. Contacts and materials valuable to Sri Lankan programs were also identified. These logs should serve as excellent reference in the future.

The program met all of the stated objectives and progressed smoothly. The trainees were most cooperative and participated actively in every aspect and returned to Sri Lanka with:

1. Daily logs of activities and contacts;
2. Publications and reference materials for subjects covered;
3. Additional materials for library and field reference work; and,
4. An understanding of national park management and philosophy and their own selective analysis of program application and value for Sri Lanka.

## ANNEX 13. SCOPE OF WORK FOR PARK SYSTEMS PLANNER

### Job Description

This individual will be responsible for working with the DWLC Park Planner, land-use experts from the Mahaweli Ministry, the Ministry of Lands and Land Development, and the Ministry of Agriculture, and scientists from local universities to prepare a protected area systems plan for the entire Mahaweli Basin.

The Mahaweli Protected Area Systems Plan would evaluate existing and proposed protected areas and assess their overall suitability for inclusion in the different categories of protected areas. On the basis of this appraisal, proposals would be made as to which areas should be developed as protected areas and in what priority. Broad objectives would be assigned to each of the protected areas, providing the basis for subsequent area-specific management plans.

The Mahaweli Protected Area Systems Plan would identify where elephant problems are likely to occur, locate appropriate boundaries, and suggest where buffer zones can be established and what activities would be appropriate for each buffer zone. The systems plan would contribute to the overall land-use plan for the Mahaweli Basin.

The systems plan would be a multi-disciplinary effort, involving DWLC staff, technical experts from various parts of the Mahaweli Ministry, Ministry of Agriculture, Fisheries Department, and Peradeniya University. Technical assistance is required to provide overall guidance and coordination, and to ensure that the right questions are being asked of the expertise available in-country.

At the end of the third month of the assignment of the Systems Planner, hold a workshop to review the draft systems plan. This workshop should include all institutions involved in the preparation of the plan, and be held under the auspices of the Ministry of State or the Mahaweli Ministry. The output from the workshop will be an agreed protected area systems plan for the Mahaweli basin.

### Qualifications

- Ph.D. or equivalent experience in a wildlife-related field.
- At least 5 years of experience in developing countries, including at least 2 years in Asia.
- Intimate familiarity with elephants, especially captive elephants; and with large crop-raiding mammals.
- Proven commitment to protected areas as an important part of social and economic development.

### Length of consultancy

The Park Systems Planner would be assigned for an initial period of 4 months, with the possibility of extending to two years if he is deemed suitable for the post of Technical Advisor to the MEP.

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**ANNEX 14. INDIVIDUALS INTERVIEWED BY THE EVALUATION TEAM**

Dr. W. Abeygunawardana  
M. B. Adikaram  
Dr. S. Atapattu  
W. Birns  
F. Correl  
Ms. A. Damarell  
F. R. D. Dissanayake  
V. Fernando  
K. H. S. Gunatilake  
L. K. B. Godamunne  
B. I. Gunatunga  
G. Haycock  
Dr. N. Ishwaran  
M. Jansen  
J. Jayawardene  
P. H. Karunatilake  
R. I. C. Kuruppu  
  
E. Lokan  
  
Ms. E. Nanayakkara  
U. K. G. Padmalal  
A. S. A. Paksar  
  
Dr. R. Rudran  
  
Ms. C. Schoux  
W. Schoux  
R. St. John  
  
K. B. Varnasooriya  
  
T. Thomas  
S. Wazeer

ARD, USAID, Colombo  
Nation Builders Association, Kandy  
Director, DWLC, Colombo  
FDSP, USAID, Colombo  
Director, USAID, Colombo  
PROG, USAID, Colombo  
AD-Parks Ecologist, DWLC-MEP  
Former USAID Project Manager-MEP, Geneva  
Director General, MASL, Colombo  
Secretary General, MASL, Colombo  
Secretary, Ministry of State, Colombo  
MWD, USAID, Colombo  
Ecologist, University of Peradeniya  
Environmental Officer, MEA, Colombo  
General Manager, MEA, Colombo  
Managing Director, MEA, Colombo  
Senior Assistant Secretary/Project  
Coordinator-MEP, Ministry of State,  
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MWD, Project Manager-MEP, USAID,  
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Park Planner, Ministry of State-MEP,  
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Program Officer, Ministry of State-MEP,  
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Director, Special Projects, MASL,  
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AD-Administration, DWLC-MEP