

**AIRGRAM**

**DEPARTMENT OF STATE**

UNCLASSIFIED  
CLASSIFICATION

For each address check one ACTION | INFO  
 X

4980198 (6)  
PD-AAD-937-A1

DATE REC'D.

DISTRIBUTION  
ACTION  
  
INFO.

TO - AID/W

ATTACHMENT TO TOAID A 729

DATE SENT

FROM - BANGKOK

SUBJECT - BIOTROP Noncapital Project Paper (PROP) 5/p.

REFERENCE -

NONCAPITAL PROJECT PAPER (PROP)

East Asia Regional

Project No. 498-11-690

Submission date: March 31, 1970

Original X Revision No.       

Project Title: Regional Education Development  
SEAMEC Regional Center for Tropical Biology  
(BIOTROP)

U.S. Obligation Span: FY-68 through FY-74

Physical Implementation Span: FY-71 through FY-72

Gross life-of-project financial requirements:

U.S. dollars	\$ 715,000
U.S.-owned local currency	1,760,000
Cooperating Country ( <del>Indonesia</del> ) cash contribution (in \$ equivalent, current exch. rate)	
Other donor	
	<u>2,300,000</u>
Totals	<u>\$4,775,000</u>

PAGE 1 OF PAGES 50

DRAFTED BY RVanDuyn:fc	OFFICE 214 RED	PHONE NO. 314	DATE 3-31-70	APPROVED BY: MCrawford
---------------------------	-------------------	------------------	-----------------	---------------------------

AID AND OTHER CLEARANCES RHalligan JBlumgart PBeidler		UNCLASSIFIED CLASSIFICATION	DIST: AMB, DCM, EXEC, ECON, SA MC, POL, USOM-12, RED-3
--	--	--------------------------------	--

**I. SUMMARY DESCRIPTION:**

A. PURPOSE: The purpose of this PROP is to transmit and discuss the proposal by the Southeast Asian Ministers of Education Council (SEAMEC) for a Regional Center for Tropical Biology (BIOTROP) and to present conclusions and recommendations by the Regional Development Office (RED), Bangkok, regarding that proposal, giving special emphasis to the proposed participation by the United States Government (USG).

**B. BACKGROUND:**

1. The BIOTROP center has been functioning for more than a year on the site of the National Biological Institute (Lembaga Bilogi National, LBN) and sharing the LBN facilities. During this time, it has been receiving visiting scientists, conducting training and research functions.

2. The proposal for assistance for the BIOTROP 5-year program proposal has been approved by the BIOTROP Advisory Council, SEAMEC and the Government of Indonesia (GOI).

**C. DISCUSSION: THE BIOTROP PROGRAM****1. JUSTIFICATION:**

a. SE Asia is extremely rich in plant and animal resources but very little is known about these resources and about how to maintain a sustained yield.

b. The world's scientific community as well as SE Asians are becoming increasingly concerned about the implications for future economic and political developments of the numerous changes to which SE Asian biota are being subjected.

c. Regional management of regional resources requires basic information that can only be gathered and studied in SE Asia--temperate biology has little relevance.

d. The region has also felt the shortage of scientists and teachers versed in tropical biology; this shortage is now considered critical.

e. In the absence of regional research and regional biology training, extensive interest has developed for a regional center for tropical biology.

## 2. PROGRAM DESCRIPTION

a. Objectives: The program aims are as follows:

- (1) To establish a permanent regional tropical biology center;
- (2) To develop regional tropical biology research activities geared to priority economic needs of the region;
- (3) To train tropical biologists for both regional educational employment as well as for applied regional research purposes;
- (4) To consistently provide to the scientific and educational community practical tropical biology data and instructional material; and
- (5) To function as an information exchange/clearing house, primarily for the application of tropical biology data and interests.

b. Location: The location will continue to be in facilities of the LBN of the Indonesian Institute of Sciences (Lembaga Ilmu Pengatahuan Indonesia, LIPI) at Bogor, Indonesia. Available to both will be the unique LBN facilities which include the Botanical Gardens, the Herbarium, the Museum Zoologicum Bogoriense, the Treub Laboratory and the Library at Bogor; the mountain garden at Tjibodas, the dry climate garden at Purwodadi and the Marine Research Laboratories at Djakarta.

c. Duration: The BIOTROP proposal is a 5-year program scheduled to begin July 1, 1970, and designed to establish the center with an on-going program supported by the Government of Indonesia and other donors; once fully established, the center should be self-sustaining indefinitely.

d. Implementation:

(1) Under the administration already established, project staffs to manage research and training activities are being selected. These staffs will be regularly assisted by numerous Asian and a few non-Asian scientist/consultants. To accommodate these persons, as well as the trainees, temporary facilities will be rented and/or renovated and construction of permanent facilities built.

(2) During training and research, junior scientists will be assigned to teams which will include senior scientist/consultants. Systematic instruction through formalized courses will be offered along with practical laboratory and field work. Research and training programs will be conducted in four priority areas: tropical forests characteristics; tropical pests behaviour; tropical fresh water conditions; and, tropical marine biological benefits and conditions. BIOTROP has no intention of developing a degree program, but it is expected that most of the training and research done by advanced students will be credited by the universities where their degrees will be awarded.

e. Results:

(1) The four priority research topics will receive in-depth study and applied research. The information derived from these attentions will be made available for wide-ranging practical applications;

(a) Tropical Forest Biology: BIOTROP investigations will focus on ecological considerations, rather than exploitation, emphasizing economically sustained and perpetual yield of products;

(b) Tropical Pests: BIOTROP investigations will focus on disease vectors, pest ecology in agricultural environments as well as other pest-related topics that have been neglected in favor of medical and chemical interests;

(c) Tropical Fresh Water Studies:

BIOTROP investigations will focus on disadvantageous effects of man-made lakes, reservoirs, and eventually other fresh water bodies with a view to enabling SE Asian development to avoid these effects and at the same time maximize and manage positive ones;

(d) Marine Studies: BIOTROP investigations will focus on the little known areas of shallow water coral life with its associated potential for protein resources;

(2) An estimated 1,316 participants will be trained;

(3) An estimated 103.5 man-years of research inputs by Asian scientists and 30 man-years by non-Asian scientists will have been provided;

(4) Biological teaching materials appropriate for the tropical region of SE Asia will be provided; and

(5) A regional tropical biology center will be established.

3. FINANCING:

a. The budget summary of expenditures and breakdown of the 5-year funding plan by year and sources are shown in the following tables:

PROJECTED EXPENDITURES 1970/71 - 1974/75  
(Program Year, July 1 - June 30)

	(FY-70) 1970/71 (\$)	(FY-71) 71/72 (\$)	(FY-72) 72/73 (\$)	(FY-73) 73/74 (\$)	(FY-74) 74/75 (\$)	TOTAL (\$)
Special Funds	89,000	179,500	252,000	342,500	406,750	1,269,750
Physical Facilities	786,765	350,594	-	-	-	1,137,319
<u>Recurring Costs</u>						
Salaries	60,006	81,499	106,879	123,137	129,144	500,665
Visiting Scientist	80,000	100,000	110,000	150,000	160,000	600,000
Seconded Personnel	19,050	32,400	49,600	60,700	65,650	226,800
Operating Expenses	50,500	67,600	92,000	117,200	122,700	450,000
Equipment and Publication	122,000	85,000	84,000	53,000	50,000	394,000
<u>Sub-total Recurring Costs</u>	<u>331,556</u>	<u>366,499</u>	<u>442,479</u>	<u>504,037</u>	<u>526,894</u>	<u>2,171,465</u>
GRAND TOTAL	1,207,321	896,553	694,479	846,537	933,644	4,578,534

N.B. In the BIOTROP Proposal a lower and a higher salary scale (A & B respectively) are used. At the time the document was completed the lower scale had been approved by the GUI with the expectation the higher scale (B) would be adapted some time later. Only salary scale B has been used in these tables since it now (March 1, '70) seems certain this scale will be adopted within the first year of the program, but in any case no later than the second year.

UNCLASSIFIED

UNCLASSIFIED

BANGKOK TODAY A 729

b. The estimated USG, GOI, and GOI and/or other Donor funding contributions for the 5-year period extending from July 1, 1970, through June 30, 1975, by year are as follows:

	(FY 70) 1970/71 (\$)	(FY-71) 71/72 (\$)	(FY-72) 72/73 (\$)	(FY-73) 73/74 (\$)	(FY-74) 74/75 (\$)	TOTAL (\$)
<u>USG</u>						
Special Funds	44,500	89,750	126,000	171,250	203,375	634,875
Physical Facilities	636,765	200,554	-	-	-	837,319
Recurring Costs	202,506	174,340	183,129	148,437	108,661	817,073
Total	883,771	464,644	309,129	319,687	312,036	2,289,267
<u>GOI</u>						
Physical Facilities	150,000	150,000	-	-	-	300,000
Recurring Costs	40,000	50,000	84,000	83,900	141,183	399,083
Total	190,000	200,000	84,000	83,900	141,183	699,083
<u>GOI and/or other Donors</u>						
Special Funds	44,500	89,750	126,000	171,250	203,375	634,875
Recurring Costs	89,050	142,159	212,239	263,811	248,050	955,309
Total	133,550	231,909	338,239	435,061	451,425	1,590,184

To summarize the funding requirements for the 5-year period for the USG, GOI and GOI and/or other donors:

	USG	GOI	GOI and/or Other Donors	TOTAL
Special Funds	634,875		634,875	1,269,750
Physical Facilities	837,319	300,000		1,137,319
Recurring Costs	817,073	399,083	338,239	2,171,465
	2,289,267	699,083	1,590,184	4,578,534

c. The actual funding scheme will follow the same pattern as each of the other SEAMEC projects; namely, during the 5-year program period the host-government, in this case the GOI, and SEAMES will underwrite 50 percent of the total cost of the project with the projected matching funds from the USG making up the other 50 percent.

d. At present, non-USG donors that seem most certain to contribute are the UK, Netherlands, Switzerland, West Germany, Australia, UNESCO, WHO, two major foundations and numerous scientific organizations throughout the world. Reasonably firm commitments for the major item, visiting scientists/consultants, have already been made for most of the requirements through the second and third years of the program.

e. After 5 years the GOI expects to assume responsibility for continuing the BIOTROP regional center.

D. RED CONCLUSIONS:

1. The proposed program activities are within the capabilities of the BIOTROP center;
2. The establishment of the center and the initial scheduled activities are consistent with priority needs within SE Asia and with USG regional objectives;
3. The projected budget calculations are based on an accurate assessment of costs and correctly reflect anticipated conditions;
4. The projected funding sources and amounts appear achievable;
5. The projected GOI participation reflects a realistic assessment of both GOI willingness to support BIOTROP as well as the GOI capabilities to supply the funds and personnel required.

**E. RED RECOMMENDATIONS:**

1. That the USG continue the present pattern of consistent and patient support for BIOTROP as a SEAMES project;
2. That the USG agree to provide matching funds up to 50 percent of the total costs as projected in the BIOTROP program;
3. That the USG act during FY 70 to permit program implementation as scheduled.

**II. SETTING AND NEED****A. ECONOMIC SETTING**

1. SE Asia is one of the heavily populated areas of the world, and its population is increasing at a rapid rate. At the same time, its GNP is among the lowest in the world. To cope with this situation the SE Asian nations have embarked on comprehensive economic development programs. Of foremost importance in these development efforts are specific programs to devise and apply modern scientific methods of exploiting the biological resources in the area. There are, therefore, many examples of intensified uses of SE Asia's biological resources.
2. By enlarging the forest concessions as well as by employing modern mechanized methods of logging forest yields are now being increased many fold.
3. To increase food and other agricultural products more and more agro-chemicals are being used. The new rice varieties, for example, are demanding heavy doses of fertilizers. They also need more careful protection against certain pests. Fertilizers are also introduced in fish ponds to increase fish yields. Modern methods have been introduced in agriculture, such as spraying of insecticides with airplanes.

4. To satisfy the need for power, and also for purposes of irrigation and flood control, SE Asian countries are building a large number of dams. The most well-known scheme is, of course, the Mekong project. However, in other SE Asian countries, large and small dams are underway; some are finished, others are under construction.

B. ANTICIPATED COMPLICATIONS:

1. The list of development projects, large and small, can be extended ad infinitum. These programs will put heavy pressure on the natural resources. However, little is actually known about proper methods of exploiting these resources, e.g., logging, fishing, etc., under tropical conditions. Even progressive pro-conservation companies are unintentionally causing irreparable damage to natural resources. For example, large areas of the Philippine forests have suffered heavy damage from the exploitation methods used. A deep concern is being expressed over the fate of the Indonesian and other forests in SE Asia because they are being subjected to the same destructive practices. These concerns are well documented in the recent Asian Development Bank survey of the forestry industry in fifteen Asian nations.

2. Apart from the concern for sustained productivity of natural resources, which is essential for supporting the very existence of the nations of SE Asia on a long-term basis, a crescendo of voices has called attention to the ecological impact of large scale economic development programs.

3. Erosion and floods are prime resultants of denuding forests. This is a lesson for which the U.S. has paid dearly. The danger is even greater in SE Asia where a high rate of annual rainfall is not uncommon in many places, i.e., 200 inches. The fertilizers applied in the rice fields, vegetable farms and fish ponds are bound to enrich the waters of rivers and lakes causing eutrophication and an imbalance in their ecosystems. This problem will be magnified by population expansion which will increase the volume

of sewage, causing further imbalance in ecosystems if traditional methods of disposal continue to be used.

4. The insecticides--many times applied so indiscriminately--are finding their ways in the exceedingly complex ecological niches of the humid tropics. Whereas in the temperate regions some things are known and much still has to be learned about the ways of distribution of insecticides, practically nothing is known about the behavior of insecticides in the tropics.

5. Dams, although of immense economic value, are creating problems. Egypt's sardine industry has been affected very adversely by the Aswan Dam. The Kariba Dam in Africa has caused difficult social problems to the people of Zambia. The occurrence of schistosomiasis has increased in Egypt as well as in Rhodesia as a result of improved irrigation schemes. Other man-made lakes have caused toxicity problems to cattle and fowl. There are problems already with the vegetation in the Malaysian and NE Thailand man-made lakes.

### C. REACTION:

1. It was to be expected, therefore, that biology came under review when the tropical medicine and health and the tropical agriculture programs as well as education and manpower problems and needs in the region were explored by SEAMEC with a view toward developing programs which would meet these needs. Consequently, consideration was given to the desirability of establishing a regional center for tropical biology to focus on the training, research, and service needs of the region.

2. It was within this setting and environment, that Indonesia submitted a proposal for the establishment of a "Regional Center for Research, Training and Post-Graduate Study in Tropical Biology" as one of the project proposals for regional cooperation in education considered by the SE Asian Ministers of Education at the Second SEAMES Conference, held in Manila on November 25-28, 1968.

3. This document is concerned with the proposal to formulate a research, training, and service center in tropical

biology. The idea of such a center to meet and serve the needs of SE Asia has been the recurring subject of discussion since the end of World War II. The central impelling issue, deemed basic to optimal human survival over the long-run future, has been the need to equip SE Asia with the means for coping with its living environment so as to gain the greatest possible benefits for mankind on a sustained basis. Discussions have involved United Nations organizations, Pacific Science Congress committees, line agencies of various international governments (including the U.S.), private foundations, and groups of interested, informed individual scientists.

4. Two specific attributes of the general problem have been consistently identified as having particular importance and are now recognized as critical to the further development of SE Asia:

a. SE Asia has the most complex flora and fauna in the world, and the existing fund of knowledge necessary to adjust to this living environment and use it for sustained human benefit is--correspondingly--the least adequate;

b. The rapidly developing countries of SE Asia are at present unsuitably dependent upon Western science and expertise for both the application of existing knowledge and (more important in the long run) the systems for acquisition of new knowledge to reduce the lack of knowledge mentioned above.

D. CONCLUSIONS:

1. The countries of SE Asia desperately need to develop independent, self-maintaining and self-propagating knowledge--acquisition systems on a par with those of the West rather than remain dependent upon them. Here the thought is not of applied fields such as agriculture, medicine, education, etc., where already-discovered knowledge is applied directly to human needs. It is, rather, of basic science and

the art of discovering new knowledge which may be turned to human benefit by way of these applied fields. This is basic research, and the art of successfully accomplishing it for very practical reasons.\*

2. Inherent in this need is the shortage of biologists. Not only are there relatively few biologists in SE Asia, there are very limited numbers of biologists well trained for work in SE Asia. In some fields, they are almost non-existent. The situation is made worse by the type of training most biologists in SE Asia have had. It has been a rote memory type of learning. They do not understand and have no skills in the scientific approach to problem-solving. Actually, few teachers of biology at any level have even had any field or laboratory experience, which means the inservice education task must begin in most instances with these fundamentals.

### III. HISTORICAL SUMMARY\*\*

#### A. INITIAL PERIOD:

1. Because of the interest of SEAMEC and the importance it attached to the Indonesian proposal, a Feasibility Team was organized to explore the possibilities as outlined in the proposal. The team studied the Indonesian proposal during the period from September 25 to October 20, 1967, and submitted a report to the SEAMES Director on October 20, 1967, which was accepted.

- 
- \* It is important that there be no semantic confusion between the unfortunate term "pure science" and the term "basic science" as used here. If "pure" means unrelated to ~~the~~ practical reality, for the sake of intellectual curiosity alone, then this has no place in BIOTROP programming. The term "basic" as used here means "necessary," "essential," "fundamental" to getting on with the practical job at hand.
- \*\* The setting and environment, strategics, goals, and plans of action relating to SEAMEC are outlined in an overall PROP covering regional education. See Bangkok TOAID A-2155, dated November 21, 1969.

2. Subsequently, a Task Force was formed by SEAMES to consider in detail the Feasibility Team's report and to draw up a project proposal for consideration by the Third SEAMEC Conference. The Task Force convened in Bogor from November 16-18, 1967. In its report the Task Force recommended the establishment of the proposed regional center at The Lembaga Biologic Nasional (the National Biological Institute, commonly called LBN) of the Lembaga Ilmu Pengetahuan Indonesia (the Indonesian Institute of Sciences, commonly called LIPI) and formulated a concrete project-proposal (Document IPTF/6).

3. At its Third Meeting, held in Singapore on February 6-8, 1968, SEAMEC approved in principle the plan for the establishment of the regional center as recommended by the Task Force, and directed SEAMES to take the necessary steps in organizing an Advisory Council for the program in order that the activities outlined for it could be implemented as soon as possible. (Document SEAMEC/TMC 7 and IPTF/6).

4. The First Advisory Council Meeting, held in Puntjak, Bogor, on June 10-12, 1968, concurred in the nomination of Prof. Dr. Otto Soemarwoto, Director of the National Biological Institute, as the Interim Director of the Center for Tropical Biology and agreed that the effective date for the beginning of the interim period should be April 1, 1968. It was agreed that every effort should be made to launch initial activities on July 1, 1969, using national meetings in the member countries and a regional workshop as information-gathering mechanisms to formulate detailed plans for the center. Following this recommendation, a series of national meetings were organized in:

Indonesia, Jogjakarta on July 23-24, 1968;  
Malaysia, Kuala Lumpur on August 5-6, 1968;  
Philippines, Manila on August 9-10, 1968;  
Thailand, Bangkok on August 14-15, 1968;

and visits were made to Vientiane (August 16-17), Singapore (August 19-20), and Saigon (September 10-12), to obtain an adequate base of information relating to the problems and needs of member countries. (Document SEAMES/P11/NM-1).

5. Results of the national meeting were analyzed during a regional workshop, held in Bandung, Indonesia on September 23-25, 1968. This was done to determine their commonalities and priorities in terms of their relevance and regional economic development needs and to develop from them a rationale for a BIOTROP Program. (Document SEAMES/P11/RW-1).

6. The findings of the regional workshop were then submitted to the Second Advisory Council Meeting, held in Bandung, Indonesia, on September 30 - October 2, 1968, which accepted the workshop's report with minor amendments. However, the Council recognized the complexities of the biology of SE Asia and particularly of an ecological approach to the problems of this region. It was therefore aware that more time was required, not only to establish the regional center on a firm basis but also to conduct certain preliminary studies and pre-project surveys. The Advisory Council resolved that the interim period be extended to June 30, 1970. Further, to assist in evaluating the biological research facilities of the LBN and its potentialities for use by the center, in terms of the type of program being considered, the Council also resolved that a second Task Force be established to do this study. (Document SEAMEC/P11/ACM-2).

7. Following the recommendation of the Advisory Council a Task Force was re-established, and three meetings were successively organized in:

- a. Bogor, on December 16-18, 1968;
- b. Bogor, on January 15-16, 1969;
- c. Singapore, on February 3-6, 1969.

For more detailed studies, including the need for facilities/housing development and particularly for detailed program formulations, many small study-group meetings were also held (Document BIOTROP/TF-1).

**B. BIOTROP ESTABLISHED:**

1. At SEAMES' Fourth Meeting in Djakarta on January 7-10, 1969, the formal name-change from "Regional Center for Research, Training and Post-Graduate Study in Tropical Biology" to "SEAMEC Regional Center for Tropical Biology," was approved in principle and it was agreed that the project would be commonly known as "BIOTROP." To permit further development of the BIOTROP Program, SEAMEC also approved the extension of the interim period to June 30, 1970, and supported the recommendation from the BIOTROP Advisory Council that a grant be sought from the USG and other possible sources to meet the expenditures for the interim period.

2. At the Third Meeting of the Regional Advisory Council for BIOTROP, held in Chiangmai on May 26-28, 1969, a Preliminary Development Plan was presented and the concept of BIOTROP as set forth in the plan was adopted in principle. It also adopted, in principle, the following environmental "directions" as being of prime importance and equal merit:

- a. Tropical Forest Biology
- b. Tropical Pests
- c. Fresh-water Studies
- d. Marine Studies

The close inter-relationships between the above were recognized and it was agreed that priority determinations would only be possible after completion of the planned pre-project surveys.

3. At the same meeting, the Council adopted a phasing concept for the BIOTROP Program in which it would start small and carefully, assuring a sound foundation for its projected growth.

4. The Council expressed the opinion that an International Scientific Advisory Board should be created

for BIOTROP and, until such a body came into existence, the Council suggested an ad hoc group made up of scientific consultants present at that meeting, plus additional members to be appointed.

5. The Council agreed that pre-project and project leaders should preferably be scientists from SEAMEC countries and that, should such scientists not be available, qualified scientists from outside the region should be associated with regional scientists who would be expected to assume responsibility for the projects as soon as feasible.

6. In late December 1969, BIOTROP employed a full-time consultant for a period of two and one-half months to assist in collating all the various recommendations and advise received and to assist in preparing, in draft form, the final proposal for BIOTROP operations for the period July 1970 - June 1975. During the same period, repeated consultations and reviews were held with officials of the GOI, RED/Bangkok, and USAID/Djakarta. Continued communications were maintained with scientists in the region. A special work seminar on Forest Biology was called to assist in delineating certain aspects of the plans for the forest component of the program.

7. The proposal was completed and presented to the Advisory Council at a special meeting, January 8-9, 1970. It was unanimously approved, subject to amendments and recommendations which were incorporated in final revision of the proposal for submission to the Fifth SEAMEC Conference at Kuala Lumpur, January 19-23, 1970. The proposal was unanimously approved by SEAMEC Conference including the resolution that the permanent phase of BIOTROP be effective from July 1, 1970.

C. RED COMMENTS: The full account of the elements of strategy pieced together in this section of the PROP will be found in the publications listed below. It is important to note that the strategy was planned and implemented

by the Asians interested in this particular SEAMEC project, and that outside consultants were used at the initiative of the Asians. The result has been a critically important pragmatic learning process on the part of the Asians.

D. PUBLICATIONS ABOUT BIOTROP: This sequence of project development activities is described in further detail in the following SEAMES and BIOTROP publications:

1. IPTF/6 - Report of the Task Force Meeting to Consider the Feasibility Study Team's Report on the Indonesia Project Proposals, November 16-18, 1967.
2. SEAMES/P11/BAC-I - First Advisory Council Meeting, June 10-12, 1968.
3. SEAMES/P11/NM-I - Report of National Meetings, July - August 1968.
4. SEAMES/P11/RW-1 - First Regional Workshop, September 24-27, 1968.
5. SEAMEC/P11/ACM-2 - Second Advisory Council Meeting, September 30 - October 20, 1968.
6. SEAMEC/P11/PSR-2 - Project Status Report, November 3-7, 1969.
7. BIOTROP/TF-1 - Viewpoints and Recommendations Concerning Cardinal Questions on BIOTROP Development Plan, Bogor, 1969.
8. (Unnumbered) - Background Information, Bogor (no date).
9. F-11/BIOTROP/CP/-1 - Preliminary Development Plan, Submitted to the Third Advisory Council Meeting Chiangmai, Thailand, May 26-28, 1969.

10. SEAMEC/P11/ACM Spec. - Special Advisory Council Meeting, January 8-9, 1970.

11. SEAMEC/P11/PP/I-II - Program Proposal, Vols. I and II, Kuala Lumpur, January 19-23, 1970.

12. SEAMEC/P11/P11/~~11~~ - Legal Papers, (undated) document to accompany item 11 above.

#### IV. STRATEGY

##### A. OBJECTIVES AND FUNCTIONAL GOALS

1. The General Objective of BIOTROP, as approved by the Advisory Council and SEAMEC, is "to find solutions to biological problems of the Southeast Asian region, and through biology to contribute as effectively as possible to the economic development of the Region."

2. Specific Functional Goals listed in the BIOTROP Constitution are:

a. To provide opportunities for senior scientists to do original research on economically important biological problems in the region;

b. To teach junior regional scientists, through direct personal involvement in on-going research, the art of basic scientific discovery in biological work and the practical ways of applying this to the needs of their countries.

c. To build, through BIOTROP as a permanent institution and a cadre of well-trained Asian personnel, a base for the scientific independence of the region and its full participation in the world's scientific community.

d. To disseminate scientific information among the potential users and to facilitate its practical application.

e. To foster international cooperation and understanding through participation of scientists from the region in BIOTROP.

B. METHODS OF ACHIEVING THE OBJECTIVES: The procedures and mechanisms for accomplishing the objectives of BIOTROP are embodied in four major project activities:

1. Tropical Forest Biology: BIOTROP will conduct comprehensive surveys and do studies of selected, representative types of SE Asian forest ecosystems. These surveys and studies will provide essential information about what organisms these ecosystems include, how they relate to one another in energy webs and other inter-dependent relationships, and how to manipulate the ecosystems toward human ends on economically sustained bases. The lowland dipterocarp forest, which is the most attractive economic resources type and covers the largest total area of the several types of SE Asian forest, will receive priority attention.

2. Tropical Pests: Research will be designed to reduce (or eliminate) the adverse effects of certain pests on the people, domesticated animals, and renewable natural resources of the SEAMES region. To accomplish this, it is necessary to develop a more precise working knowledge of the life histories, behavior, ecology, and disease relationships of selected pests, e.g., ectoparasites such as ticks, flees, mites, also mosquitoes and weeds (alang grass).

3. Fresh-water Studies: Basic information will be collected for determining the best economic biological utilization of the man-made lakes to be created in the region during the next several years. Training will be given to research scholars, technicians, university students, and school teachers in hydrobiological techniques, and in the ecology of inland fresh waters.

4. Marine Studies: Long-term research projects will be carried out in selected shallow water coral atolls of the most suitable (SEAMEC) locations (probably off the coast of Java). Basic knowledge and understanding will be

collected that is necessary to manage effectively selected components of an atoll ecosystem. Specifically, a comprehensive floral, faunistic and ecological survey of a coral reef group including lagoons will be conducted in order to obtain presently non-existent information on utilization of solar energy and nutrients by reef plants and the transformation of plant material into animal tissue.

In addition to its work on the four major projects, BIOTROP will be engaged in other specific activities. It will provide training both through long and short-term courses, participation of trainees and junior scientists in research with senior scientists as well as in field work and data collecting on the major research projects.

BIOTROP will serve as a regional clearing house, especially for the four major fields of activity concentrating initially on preparing species identification sheets to be used throughout the region. It will supply basic data and general biological information to public and private agencies and organizations concerned about the rational management of the renewable natural resources on economically sustained bases.

C. BIOTROP WILL PROMOTE ACHIEVEMENT OF US REGIONAL OBJECTIVES: It will increase significantly the number and quality of SE Asian biologists thereby enabling them to help themselves become more self-sufficient in biological sciences. Furthermore, the establishment of BIOTROP as a permanent SE Asian regional institution can produce cooperation, coordination and understanding among public and private agencies and among the people of the region. At the same time, habits and attitudes conducive to regionalism can be ingendered by the nature and processes of the BIOTROP operations. BIOTROP will also serve U.S. interests by improving the quality of the cooperating countries' resources and performance both in terms of the science of biology and institutional development.

D. ALTERNATIVE APPROACHES: In the formation of the BIOTROP proposal each SEAMEO member nation took part in planning and decision-making regarding all vital aspects of the program. In this process groups examined various alternatives before agreeing on the program as it is now formulated. The alternatives considered are as follows:

1. Building Emphasis: The first tentatively proposed program was essentially a large building project calling for about \$14 million in new construction. This proposal was examined and rejected as far too costly and as having inadequate substance and relevance to common biological problems of the region. Nor did it involve sufficient regional participation in work on their solutions.

2. Proliferation Approach: From outside (SE Asia) interests, both scientific and potential donors, came an alternative approach, i.e., using in aggregate the numerous special interests of these scientists and potential donors as the bases of formulating the BIOTROP program. This too would have required resources in funds and personnel beyond the means of Indonesia as the host-country and even the region. This alternative was tempting, however, in that there was no doubt of the interest and availability from outside the region of the manpower and possibility of the financial resources required. But, such a program would have not been truly regional, capable of functioning within the limitations of the region's financial, human and managerial resources. After careful consideration, this alternative was abandoned.

3. Decentralization Vs. Centralization: Because of the genuine interest in BIOTROP throughout the region, the importance to every participating nation of each of the four project activities and the presence in most countries of some type of physical resources available to BIOTROP for the implementation of the proposed program, careful consideration was given to having a decentralized operation rather than have the focus be clearly and almost exclusively on the center at Bogor. The decision was made

in favor of centralization. The Advisory Council felt that in this way stronger regional links will be forged, logistic and managerial problems will be kept within the resource availabilities, and there will be higher quality, more useable and used end products.

4. Attach BIOTROP to a University: In many ways, the logic of this alternative was obvious and persuasive. But, no university in SE Asia has a biology department with the international status and reputation of NBI. And none can approach the resources LBN offers, e.g., the world-famous gardens and herbarium. Furthermore, it was contemplated that BIOTROP grafted onto LBN would be the easiest and best way to assure the cooperation and support from the greatest number and variety of sources and in the largest amounts.

5. The Choice: Thus, the decision to establish BIOTROP at Bogor emphasized selectivity, direct relevance to high priority common needs most likely to have an economic benefit and high quality. The Advisory Council decided in favor of a modest beginning, based on the strengths that exist and the resources available, and to build a solid foundation for a permanent regional institution grafted on to LBN.

E. SEAMES AND INDONESIAN SUPPORT: SEAMEC's support was unanimous in its January 1970 annual meeting when approval was given to the proposed BIOTROP program, constitution and letter of agreement between the GOI and SEAMEC. By its willingness to underwrite BIOTROP, the GOI has indicated its support in the following ways:

1. In agreeing to the Constitution for BIOTROP, Indonesia has approved the program objectives and functions, in particular that ~~of~~ the National Biological Institute (LBN) of the Indonesian Institute of Sciences (LIPI) will be the institution onto which BIOTROP will be grafted.

2. It has approved the agreement with SEAMEC for the BIOTROP program.

3. The GOI is prepared to underwrite the non-USG half of construction and operating costs and to give fullest support and direct help to SEAMES in raising the required scholarship and research fellowship monies for which SEAMES is responsible and will administer.

One of the most effective ways for Indonesia to support BIOTROP is by strengthening LBN. This is a two-way street, however, and the prospect of USG matching funds to help develop on the LBN base a regional biological institute has been a powerful incentive to the Indonesians and other donors. Largely because of this incentive, the GOI has fully financed a new Herbarium building valued at more than \$500,000. The building, which is finished and will be dedicated in April 1970, will house the Tropical Forest Biology Project, the major research and training component of the program. With non-USG donor help, a new library with new equipment costing about \$225,000 is fully financed and under construction. BIOTROP is to have full access to the library and its resources, probably the finest tropical biology collection in the world.

Although these contributions as well as all LBN resources are being made available to BIOTROP, BIOTROP is not asking that they be used at this time for matching purposes. However, since these resources are essential for the program, if the program goes well and expansion is appropriate, BIOTROP may wish to ask that consideration be given to using these GOI and other donor contributions for matching purposes to enlarge the program.

#### F. RELATIONSHIP TO OTHER PROJECTS:

##### 1. Inter-relationships with Other SEAMES Projects:

An overall objective of SEAMEC is to stimulate regional cooperation in education and science, and hence to enhance regional development through the establishment of centers of excellence in specific fields determined to be most important to the expanding educational needs of the region.

a. There are now six regional centers in various stages of development. Coordination among these

centers has been accomplished to date by periodic meetings of "Project Directors and High Officials." A number of areas of mutual interest have been clarified and specific instances identified where one center could draw support in forms of qualified experts, facilities, and background data from other centers.

b. BIOTROP has already established direct contact with most of the regional centers and has plans to continue this effort as its own project activities are implemented.

c. Because of the inherent relationship between biology teaching and biology research, BIOTROP and RECSAM must work together. A close working relationship has already been established and representatives of each center have exchanged visits. Some joint planning has already been done. For example, from a recent BIOTROP program review in which both the Chairman of the RECSAM Steering Committee and the Project Coordinator were present, it was agreed to develop jointly a prototype regional textbook for teaching biology in elementary and secondary schools. BIOTROP will assist in formulating the content and supply the relevant data on regional flora and fauna.

## 2. Relationships with other Programs in Indonesia and the Region:

a. During the interim period, the BIOTROP staff and the Advisory Council have examined the possibility of working relationships with a wide variety of other programs in the region, and in Indonesia particularly. In certain cases, special care was taken to search for possible areas of duplication which should be avoided.

b. Particular attention is called to the large, new Indonesian Higher Agricultural Education and the Agriculture Research Programs as areas where special attention will be given to assuring mutually beneficial coordination of efforts. The BIOTROP staff has been involved in the Higher Agricultural Education Program from the time of the initial survey for this program. BIOTROP made known its

Chief that an organized, systematic means of communication and coordination should be worked out with the USAID/Djakarta, the Agricultural Research Project and the Higher Agricultural Education Program staff. To this end, BIOTROP wrote to the USAID suggesting a meeting be held of those responsible for these programs and explained its view of relationships (which it found thoroughly productive and non-duplicative). Several meetings have been held. As a consequence, Indonesian authorities from the appropriate agencies of the GOI and institutions of higher learning have agreed to organize a committee for regular and systematic review of the BIOTROP, Higher Agriculture Education, Agriculture Research, and any other related programs in Indonesia to assure coordination and avoidance of unnecessary duplications. Their review processes will cover planning and implementation of the project activities which may be of common concern.

This committee is the first formal step taken to form a linkage among these projects which, by their purposes, nature and location, must be closely integrated and coordinated. It is hoped this linkage will be institutionalized as is the Bogor library coordinating committee, which passes on all requests for new acquisitions. A similar arrangement is in process among BIOTROP, the Indonesian bi-lateral projects discussed above, the USAID/Djakarta and RED to cover respective implementation responsibilities (including coordination), the uses and procurement of commodities, particularly laboratory equipment, annual reviews and a special focus on building of BIOTROP as a permanent institution.

The Higher Agriculture Education project is entering a one-year intensive planning period, followed by its annual evaluation. BIOTROP officers will join in this planning exercise and the resulting coordination will be made a special matter of the project's evaluation criteria.

#### G. CONCLUSIONS:

1. RED believes the BIOTROP goals are realistic and largely attainable. They seem to focus on SEA priority

needs to which biological research training and service can contribute. They are designed to fit well with objectives of other regional and bi-lateral programs.

2. The methods of achieving the goals appear mutually reinforcing and have a positive multiplying effect.

3. The alternative chosen for establishing the BIOTROP program seems to be a prudent one and one that will contribute greatly to the success of the program.

4. Cooperation and coordination have been given much attention both in the process of formulating the program and in the plans for its operations. RED has already made known its belief in the necessity of these elements being an integral part of BIOTROP institutionalization, particularly with respect to SEAMES programs and Indonesian bi-lateral projects.

5. A key to the institutionalization of BIOTROP may be its ultimate relationships with LBN. These relationships are of course not yet as specific as will be necessary to make successful the grafting of BIOTROP to LBN. While these relationships will of necessity be evolutionary (and, therefore, a matter of annual review), they will also be addressed in the Letter of Agreement.

V. PLANNED TARGETS, RESULTS, AND OUTPUTS:

A. CONCEPT OF THE COMPLETED PROJECT:

1. A Permanent Institution: A fundamental tenet of the SEAMEC regional tropical biology program is that BIOTROP be so well developed and established--so well institutionalized--it will continue to serve SE Asia for an indefinite period. BIOTROP is to be built as a permanent SE Asian regional institution devoted through research, training, and service to the solution of biological problems of the region. This will be the end product.

a. Known for its High Qualities, Resources and Performance: The rest of the world has used LBN resources extensively and often taken much away without leaving very much behind in the way of skills, understanding, or new knowledge. SE Asia has profited least from LBN. BIOTROP will be grafted onto LBN and be a regional institution. In the process, LBN and BIOTROP will become amalgamated. The target is for the quality of cooperation, resources, and performance both in terms of improved research, training, and service for the host country but for the region in particular to be improved.

b. Having a Functional Evaluation System to Assure High Quality Outputs: All aspects of the BIOTROP Program activities will have a built in system of continuous evaluation, including an annual review and a feed back procedure, to improve the outputs. Senior scientists who are on the staff as well as outside scientists and consultants will make evaluations. There will also be a follow-up of the trainees.

c. With a Top Flight Staff: The concept of BIOTROP as a permanent institution does not include a full permanent Indonesian staff. BIOTROP expects to have at least 40% of its staff from other SEAMEC countries. Thus to have high quality staff standing on their own feet, doing the type and level of work projected requires development of a cadre of biologists in the region capable of meeting these high standards. This is one of the major projected outcomes of the 5-year program.

d. Assured Funding: BIOTROP must be securely funded from the GOI and non-USG donors as well as have the beginnings of its own "income sources," if it is to be a long-lasting institution.

e. Significant Outputs: Respect, acceptance, and utilization, particularly in the region as accompanying aspects of performance, are projected as achievable from project accomplishments within the 5-year span of the project. The research and training will concern the highest priority needs having economic benefits with heavy emphasis placed on application of results.

## 2. Implementation Timing:

a. Building Facilities: LBN will give BIOTROP a strong foundation on which to build in terms of research and teaching resources, reputation, and prestige and a number of outstanding scientists around which to begin the program, etc. However, LBN has been operating for several years, as have most of the Indonesian institutions, on extremely limited funds. For BIOTROP to become a full functioning permanent institution a new laboratory building and living accommodations as well as renovation of certain existing structures must be done. The renovations will be completed in a few months. The new facilities should be completed by the end of the second year of the 5-year operational program.

### b. Future Funding:

(1) GOI and SEAMES: Support for BIOTROP is being built into the GOI annual budget so as to have it securely established as an accepted line item well before the end of the 5-year period. SEAMES accepts the responsibility for Special Funds. These two sources provide assurance of substantial funds.

(2) Contract/Grants Research: Given the favorable history of research support LBN has had, it seems reasonable to expect that some successes in the BIOTROP Program will attract a reasonably large amount of funds by the end of the 5-year period.

(3) Endowments: The UK is seriously considering selling all their fixed assets (houses and laboratories) at the Malacca (Malaysia) Fresh-Water Fishing Station and placing the returns in a trust fund for BIOTROP. It is expected this will be accomplished by June 30, 1971. Other endowment funds are also being sought.

(4) Scholarships and Fellowships: Support from the home institutions sending the scholars is a long-range possibility worthy of note. (In BIOTROP's first

training course almost half the participants received much of their support from their home institution.)

(5) Other: BIOTROP is working toward other funding sources, e.g., royalties, a major forestry concession, etc. Another possibility being considered is the construction of a hostelry. This is worthy of consideration since living accommodations for visitors and scholars are not only a major problem for the BIOTROP program, which will be taken care of on a minimum basis by new living facilities, but is an equally important problem for the many educational institutions located in Bogor. There is one hotel in Bogor and it is totally unacceptable. Thus income from a hostelry would seem dependable.

B. PROJECTED RESULTS AND BENEFITS:

1. General: There is no way to measure in advance the quality of the output from the research, training, and service provided in any program such as BIOTROP. Quality of output is generally recognized, however, as a factor of the quality of input. Measured in this way the quality of the BIOTROP output should be outstanding.

a. In the formulation of the proposed program, no less than a dozen of the more renowned biologists from all over the world have contributed.

b. BIOTROP is being grafted onto the world famous LBN thereby giving to BIOTROP something of its fame which comes from having some of the most extensive and finest tropical biological resources in the world. These BIOTROP will have full benefit of.

c. Renowned scientists from everywhere in the world are expected to do research and teach in the program. Scientists, teachers, and students from the region will be well-exposed to them through being in their classes, going on field trips, doing research with them as apprentices and also by close association through living together. For an initial list of these scientists see page 47.

## 2. Training Targets:

	<u>1970</u> <u>1971</u>	<u>1971</u> <u>1972</u>	<u>1972</u> <u>1973</u>	<u>1973</u> <u>1974</u>	<u>1974</u> <u>1975</u>	<u>Total</u> <u>Number</u>
<b><u>TRAINEES</u></b>						
Tropical Forest	50	80	60	80	60	330
Tropical Pests		20	40	40	60	160
Man-made Lakes		20	20	40	60	140
Marine Studies			40	40	60	140
Sub-Total	50	120	160	200	240	770
<b><u>RESEARCH FELLOWS</u></b>						
Tropical Forest	5	10	15	20	20	70
Tropical Pests	5	10	10	15	15	55
Man-made Lakes	2	2	5	10	10	29
Marine Studies			2	5	10	17
Sub-Total	12	22	32	50	55	171
<b><u>PARTICIPANTS</u></b>						
Seminars and Con- ferences	75	75	75	75	75	375
GRAND TOTAL	137	217	267	325	370	1316

3. Inputs from SE Asian Scientists (in Man-Years):

<u>PROJECT</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>Total</u>
	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>Man-Years</u>
Tropical Forest	4	7	6.5	6	7	30.5
Tropical Pests	3	5	5	6	6	25
Marine Studies			3	5.5	6	14.5
Man-made Lakes			3	5.5	6	14.5
Clearing House	1	3	5	5	5	19
<b>TOTAL</b>	<b>8</b>	<b>15</b>	<b>22.5</b>	<b>28.0</b>	<b>30</b>	<b>103.5</b>

4. Inputs of Non-SE Asian Scientists' Efforts:

<u>PROJECT</u>						
Tropical Forest	1	2	2.5	3	3	11.5
Tropical Pests	1	1	1	1.5	2	6.5
Marine Studies	.5	.5	.5	1	1	3.5
Man-made Lakes	.5	.5	.5	1	1	3.5
General Consulting Services	1	1	1	1	1	5.0
<b>TOTAL</b>	<b>4</b>	<b>5</b>	<b>5.5</b>	<b>7.5</b>	<b>8</b>	<b>30.0</b>

5. Production of indigenous (to SE Asia) biological teaching materials for all grade levels.

6. Specific benefits and results expected from the four project areas (obviously several of these are similar for all the projects and have not therefore been repeated):

a. Tropical Forest Biology:

(1) Increased knowledge of taxonomy, distribution, ecology, and physiology of the tropical forest biota; improved practical grasp of the tropical forest ecosystem;

(2) Training of 330 SE Asian technicians, university students, and school teachers in practical field biology, with ability to collect and curate specimens, make field identifications, and interpret ecological relationships;

(3) The high-level training of 70 research scholars in the principles and "art" of successful research--how to pose questions, design programs for obtaining answers and interpret results in arriving at valid conclusions. Policy makers regarding forestry in the SEAMEC nations will be given short courses and other types of inservice education;

(4) Improvement of forest exploitation methods to ensure sustained economic crop yields;

(5) Provision of a better general understanding of improved conservation practices and purposes among the peoples of SE Asia;

(6) Discovery of new, economically valuable forest products;

(7) Inculcation of a better understanding of the interrelationship between man and his living environment, and the inter-dependencies therein.

b. Tropical Pests:

(1) Compilation of a bibliography and collection of data on the most important pests of human beings, domesticated animals, cultivated plants and the renewable natural resources of the SEAMEC countries;

(2) Acquiring of knowledge of life cycles of selected species of pests including the developmental stages and biology of each. This will provide the basis for new or improved approaches to the control of pests in the region;

(3) Training of 160 students and 55 research scholars.

c. Fresh-Water Studies:

(1) Significant advancement of the knowledge required for the most efficient biological use of man-made lakes in the region;

(2) About 140 technicians, university students and teachers at various levels will be given training;

(3) Training of 29 research scholars who will be the experts the region will depend heavily upon for the solution of problems which are certain to arise in managing the man-made lakes in SE Asia.

d. Marine Studies:

(1) Increased knowledge of the taxonomy, ecology, and physiology of the SE Asian (shallow water) marine biota.

(2) Synoptic reference collections of the marine biota, deposited in SE Asian and foreign institutions.

(3) Training of approximately 140 SE Asian technicians, university students, and school teachers;

(4) The intensive instruction-by-doing of 17 research scholars in the principles and "art" of

successful, original marine research in local terms, with the local biota, and for local benefit.....the building of "self-starter," practical scientists in Asia;

(5) Improved, sustained harvest of reef and lagoon organisms of economic importance. The eventual culture of some for artificially increased yields;

(6) Progress along certain very specific lines may be mentioned in particular:

(a) Feeding habits of coral reef fishes (such information is important for their intensive management);

(b) Optimal cropping rates through fishing;

(c) Reproductive and general physiology of reef organisms for eventual domestication;

(d) Ascertaining varieties and nature of industrially usable phycocolloids among the algae present on the reef.

C. CONCLUSIONS: The targets, results and outputs should be achievable as projected. Furthermore, they have been reduced in size to a phased implementation scheme which is achievable. Scientists from both SEAMEC nations and outside consider/in terms of resource availabilities and viability. RED has been impressed with the thoroughness with which the planners of BIOTROP have pragmatically planned for the proper balance of inputs and outputs, given the constraints that were established as guidelines, e.g., that BIOTROP must be a Bogor centered program, not heavily dependent on non-Asian scientists and within the limits of Asian monetary and manpower resources.

VI. COURSE OF ACTIONA. INTERIM PROJECTIONS:

1. Two-year Budgets: BIOTROP is already essentially an ongoing program. By June 30, 1970, it will have been operating on an interim basis for about two years. The budgets for these two years are shown in the following table:

BIOTROP INTERIM BUDGETS  
(April 1, 1968 - June 30, 1970)

	1968/69	1969/70	
	USG	USG	NON-USG
Administrative Staff	\$32,750	\$18,420	\$10,180
Consultants	-	13,200	40,000
Seminars & Training Activities	21,500	6,000	16,000
Research Activities	-	29,455	14,000
Operating Expenses	16,400	19,900	-
Interim Physical Facilities	5,000	5,000	-
Contingency Fund	4,350	5,000	-
	\$80,000	\$104,125	\$80,180

a. First Year: The first of the two interim years was devoted largely to initial stages of program planning with only limited project implementation. The budget for the first interim year did not have an input from non-USG sources.

b. Second Year: The second interim year, as may be seen from the table above, projected a total expenditure of \$184,305, with \$104,125 of this coming from the USG and \$80,080 from non-USG sources. According to calculations as of March 1, 1970, the latter contributions will exceed the projection. During the second interim year, while the planning and development activities were carried forward through completion of the program proposal, a modest level of regional activities have been undertaken concurrently. They have consistently increased in momentum preparatory to the program

being operational July 1, 1970. Accomplishments and progress described below are the result of activities carried out during 1968/69, and more particularly during the current year 1969/70.

## 2. Two-year Activities:

a. A series of meetings and expeditions have been carried out that have significant value in and of themselves without reference to future activities but in addition lay the groundwork and provide the details for the next steps to be taken in implementation of the program activities for the first full year of operation. The first of these included a survey of possible sites for the marine studies project. A group of coral islands off Djakarta Bay have been surveyed. Some of these, particularly Pari Island, were found suitable. Aerial photographs were made, a search for data pertaining to this area was completed. A report of the survey has been written and is considered by scientists as having made a significant contribution, even if there were to be no future use made of the area in the BIOTROP Program.

b. A highly successful training course in Ecological and Economic Plant Taxonomy was held August 12 - September 19, 1969, with 18 participants from All SE Asian countries except Laos and Malaysia. It augurs well for the future of BIOTROP in that (1) the course was heavily over-subscribed; (2) its non-USG financial support exceeded expectations with one participating nation sending nine students and paying almost all their expenses; and (3) more than five universities in the area have requested a similar course be given no less than once per year for at least the next five years. It might be added that even though most of the students had already had professional biological training and many were university professors, it was without exception their first experience in biological field and laboratory work and in a problem-solving learning experience. Many were so facinated by this experience they requested to continue their work at their own expense.

c. A Forestry Seminar with 25 participants was held in October 1969. The participants, who came from SE Asia, UK and the US, were forestry experts. They first

reviewed the status of tropical forestry research and ecology. They then concentrated on an examination and revision of the proposed Forestry Project as the major initial component of the BIOTROP Program. They also made detailed plans for the first year of the project activities. As an initial follow-up of the seminar, plans have been made for a major expedition to Kutai Natural Reserve in East Kalimantan (East Borneo) as the site chosen by the group for major field work in the Tropical Forest Project. Senior scientists from the region have already fully subscribed all places that can be allowed in the expedition. The survey will be made in May 1970, by a group consisting of:

Dr. Chew Wee-Lek, Acting Director, Botanical Gardens,  
Singapore

Dr. Phungtrungan, Senior Lecturer in Biology, Uni-  
versity of Saigon

Dr. Soegeng Reksodikardjo, Acting Assistant Director,  
BIOTROP

others will be selected from the many applicants.

d. Following the same pattern as the Forestry Seminar there will be a Biology of Pests working meeting in late March 1970, to determine priorities of pests as the bases of starting research activities. An evaluation will also be made of the numerous research activities proposed for the initial stages of the project. Plans will be laid for about the first two years of the training activities with emphasis on the first year.

e. In April, Dr. Jerry Prouse, Director of the Malacca (Malaysia) Tropical Fish Culture Station, will direct a survey for the Fresh-water Project. The work will be carried out, with the assistance of other scientists, at the Indonesian dam site at Karang Kates, East Java (near Malan). Although the project will have only limited activities until considerably later as part of the phased program implementation plan, this survey and collection of base data are required in April 1970, before the dam construction program begins.

UNCLASSIFIED

f. Each of the activities described above is without exception pragmatic support of all evidence accumulated from the various surveys made during the course of developing the proposed program that there would be a large demand for the types of training and research activities planned. The response to these activities is also evidence that SE Asians will accept opportunities for further participation in BIOTROP. The program activities were of course built on these premises. It should be noted that there is growing evidence, as was anticipated, that BIOTROP will not be able to meet the demands for the various types of training and research opportunities and services provided.

g. Evaluations and further surveys will, nevertheless, be made regularly and systematically to improve the program and keep it in front of the priority needs and demands of the region. To get a running start on this aspect of the program Dr. R.E. Schultez, Economic Biologist, Harvard University has been requested to spend three months with BIOTROP to build into the actual operations of the program an evaluation system of all research and training components. It is expected his work will begin in May or not later than June of 1970 so as to have the system a functioning part of the fully operational program.

B. FIVE-YEAR PROGRAM:

1. Developments to Date: The following agreements and actions have been completed and/or are underway and targeted as stated.

a. Both the BIOTROP Advisory Council and the Ministers of Education in their respective January 1970, meetings approved the proposed 5-year program funding plan and resolution that the full operational program begin July 1, 1970.

b. The budget summary of expenditures and breakdown of the 5-year funding plan with projections by year and source are shown in the following tables:

PROJECTED EXPENDITURES 1970/71 - 1974/75  
(Program Year, July 1 - June 30)

	(FY-70) 1970/71 (\$)	(FY-71) 71/72 (\$)	(FY-72) 72/73 (\$)	(FY-73) 73/74 (\$)	(FY-74) 74/75 (\$)	TOTAL (\$)
Special Funds	89,000	179,500	252,000	342,500	406,750	1,264,750
Physical Facilities	786,765	<del>334,384</del>	-	-	-	1,137,319
<u>Recurring Costs</u>						
Salaries	60,066	81,499	106,879	123,137	129,144	500,665
Visiting Scientist	80,000	100,000	110,000	150,000	160,000	600,000
Seconded Personnel	19,050	32,400	49,600	60,700	65,050	226,800
Operating Expenses	50,500	67,600	92,000	117,200	122,700	450,000
Equipment and Publication	122,000	85,000	84,000	53,000	50,000	394,000
<u>Sub-total Recurring Costs</u>	<u>331,556</u>	<u>366,499</u>	<u>442,479</u>	<u>504,037</u>	<u>526,894</u>	<u>2,171,465</u>
GRAND TOTAL	1,207,321	896,553	694,479	846,537	933,644	4,578,534

N.B. In the BIOTROP Proposal a lower and a higher salary scale (A & B respectfully) are used. At the time the document was completed the lower scale had been approved by the GOI with the expectation the higher scale (B) would be adapted some time later. Only salary scale B has been used in these tables since it now (March 1, '70) seems certain this scale will be adopted within the first year of the program, but in any case no later than the second year.

c. The estimated USG, GOI, and GOI and/or other Donor funding, contributions for the 5-year period extending from July 1, 1970, through June 30, 1975, by year are as follows:

	(FY 70) 1970/71 (\$)	(FY-71) 71/72 (\$)	(FY-72) 72/73 (\$)	(FY-73) 73/74 (\$)	(FY-74) 74/75 (\$)	TOTAL (\$)
<b>USG</b>						
Special Funds	44,500	89,750	126,000	171,250	203,375	634,875
Physical Facilities	636,765	200,554	-	-	-	837,319
Recurring Costs	202,506	174,340	183,129	148,437	108,661	817,073
<b>Total</b>	<b>883,771</b>	<b>464,644</b>	<b>309,129</b>	<b>319,687</b>	<b>312,036</b>	<b>2,289,267</b>

<b>GOI</b>						
Physical Facilities	150,000	150,000	-	-	-	300,000
Recurring Costs	40,000	50,000	84,000	83,900	141,183	399,083
<b>Total</b>	<b>190,000</b>	<b>200,000</b>	<b>84,000</b>	<b>83,900</b>	<b>141,183</b>	<b>699,083</b>

<b>GOI and/or other Donors</b>						
Special Funds	44,500	89,750	126,000	171,250	203,375	634,875
Recurring Costs	89,050	142,159	212,239	263,811	248,050	955,309
<b>Total</b>	<b>133,550</b>	<b>231,909</b>	<b>338,239</b>	<b>435,061</b>	<b>451,425</b>	<b>1,590,184</b>

To summarize the funding requirements for the 5-year period for the USG, GOI and GOI and/or other donors:

	USG	GOI	GOI and/or other Donors	TOTAL
Special Funds	634,875			1,269,750
Physical Facilities	837,319			1,137,319
Recurring Costs	817,073	399,083	955,309	2,171,465
<b>Total</b>	<b>2,289,267</b>	<b>699,083</b>	<b>1,590,184</b>	<b>4,578,534</b>

d. In summary, the type and number of man-years of staff time planned for the program is shown below:

POSITION

Project Staff

Tropical Forest Project	4.0	7.0	6.5	6.0	7.0	30.5
Tropical Pests	3.0	5.0	5.0	6.0	6.0	25.0
Freshwater Studies			3.0	5.5	6.0	14.5
Marine Studies			3.0	5.5	6.0	14.5
Clearing House	1.0	3.0	5.0	5.0	5.0	19.0
Sub-Total*	8.0	15.0	22.5	28.0	30.0	103.5
Administrative, support- ing and Service	21.0	24.0	26.0	27.0	27.0	125.0
TOTAL*	29.0	39.0	48.5	55.0	57.0	228.5

\* 40% of the total man-years will be non-Indonesian but come from within the region.

Visiting Scientists and/or  
Consultants

General Consulting Ser- vices	1.0	1.0	1.0	1.0	1.0	5.0
Tropical Forest Project	1.0	2.0	2.5	3.0	3.0	11.5
Tropical Pests Project	1.0	1.0	1.0	1.5	2.0	6.5
Freshwater Studies	0.5	0.5	0.5	1.0	1.0	3.5
Marine Studies	0.5	0.5	0.5	1.0	1.0	3.5
TOTAL	4.0	5.0	5.5	7.5	8.0	30.0

e. The Advisory Council and the GOI have approved the Constitution and Agreement and have submitted them to SEAMEC for approval.

2. Pending Actions:

a. The GOI and the Indonesians giving leadership to BIOTROP fully support the regional concepts embodied in SEAMEO and have made known their resolution to move their own required actions ahead in whatever way necessary to insure their support of the program and its full operation, beginning July 1, 1970. To this end:

(1) BIOTROP has been giving status by the GOI as an international organization with all rights and privileges, including tax and duty-free exemptions;

(2) Required staff will be made available by Indonesia as dictated by the program;

(3) Relationships between the Ministry of Education and LIPI will be a matter of written agreement, which is in process and will be finalized soon, but not later than May 1, 1970;

(4) The grafting of BIOTROP onto LEN is an Indonesian proposal and accepted as the way in which BIOTROP will function. Details of this relationship will be included in the appropriate documents of agreement between the GOI, SEAMEC, and USG.

(5) The GOI is prepared to underwrite the funding of the non-USG half of the construction and operating costs during the first five years and provide all operating costs thereafter. The expectation is that half the Special Funds will be provided by the USG and the other half will be raised by SEAMEC from non-USG sources. However, the GOI will assist in every way possible in assuring the non-USG half of these funds.

(6) As now projected, the input of the GOI the first year for recurring costs is low but increases significantly each year. By the end of the 5-year period

the contribution will be in the 80-90% range. It should therefore be possible for a complete takeover the following year. As evidence of GOI support, their cash contributions for the first two years as presented in this document exceeds by \$48,000 the amount shown in the proposal when it was finalized in early January 1970. (The actual amount will probably be further increased for both these years.)

(7) Arrangements will have been completed by May 1, 1970, for the temporary living facilities and laboratory work space for all staff and scientific personnel and students to be accommodated as required from that date until renovations and new facilities are ready for use.

(8) GOI funds for the first year of operations as projected in the 5-year funding plan have been approved and will be ready for expenditure on May 1, 1970. Funds for the second year have been included in the GOI budget for the next year and approved in principle.

(9) To move forward expeditiously, the GOI has agreed to pay as part of its contribution, all A&E costs. On March 16, 1970, an Indonesian A&E firm was selected on competitive basis. The necessary drawings will be ready not later than May 15. With the availability of GOI funds May 1, 1970, it is planned that renovations will be started on or about that date. It is projected that USG funds will be used for the new living facilities and the new laboratory building. Some GOI funds will be used for procurement of local furniture for these structures, particularly the living quarters.

b. The Letter of Agreement between the GOI, SEAMEC, and the USG consummating all the above understandings is being prepared and will be submitted to AID/W on or before May 1, 1970.

### C. RED CONCLUSIONS:

1. BIOTROP and GOI leadership concerned with BIOTROP look with pride on BIOTROP as their member of the regional family of SEAMEO projects, have indicated their staunch support for the BIOTROP program and, RED believes, will continue to translate this support into concrete action.

2. GOI will continue to increase its share of the total BIOTROP budget, particularly in the recurring costs category. If the GOI continues to add to its annual inputs at the same rate as the first two years, the sharp increase projected for their contributions in the proposal for the third and fourth years could be eliminated; and by the last year RED believes the GOI may be able to pay all recurring costs.

3. The prospect of GOI and SEAMES funding the non-USG portion of the Special Funds in the Indonesian business and industrial community seems particularly promising.

4. The proposed plan for the GOI contribution and takeover is realistic and achievable. RED had hoped that the GOI would pay all recurring costs from the beginning of the 5-year program, but now recognizes that the GOI economic and budget conditions do not permit this.

5. The GOI cannot provide all the GOI/other donor portion of \$1,024,509 (excluding Special Funds) although they will guarantee it on the assumption that projected non-USG and non-GOI donor contributions will be adequate. RED believes that this GOI assumption is valid; there is little doubt that all of the GOI/other donor portion will be provided by non-USG and non-GOI sources, about half through visiting scientists/consultants. The preliminary list below shows the degree to which most of these personnel are expected and leaves little question about that funding aspect; the small percentage represented by the uncertain persons should be obtainable without difficulty. Furthermore, negotiations to date indicate that many bring funds for equipment and associated purposes with them.

VISITING SCIENTISTS AND/OR CONSULTANTS  
(NON-USG FINANCED)

	<u>NAME</u>	<u>COUNTRY</u>	<u>PERIOD</u>	<u>FIELD</u>	<u>% OF EXPECTATION</u>
1.	Hans Warner	Swiss	3-6/70	Forest Ecology	100
2.	George Anastos	USA	3/70	Pest Biology	100
3.	G. A. Prouse	UK	4/70	Freshwater Biology	100
4.	J. Hofstra	Holland	5-10/70	Plant Physiology	90
5.	P. Tixier	Cambodia	7-8/70	Epiphyte Ecology	50
6.	A. J. Bruce	UK	7/70-75	Marine Biology	75
7.	E. J. H. Corner	UK	*	Forest Ecology	90
8.	R. Serene	France	**	Marine Biology	100
9.	V. G. Springer	USA	***	Marine Biology	100
10.	John Dransfield	UK	9/70-72	Forest Ecology	90
11.	Gordon W. Groves	USA	9/70-7/71	Marine Ecology	80
12.	G. N. Dority	USA	9/70-71	Phytochemistry	60
13.	Dr. Holly	UK	9-10/70	Weed Biology	90
14.	G. A. Prouse	UK	1/71-73	Marine Biology	90
15.	Lord Medway	UK	1/71-73	Zoology (Ecology)	?
16.	J. A. Anderson	UK	1/71-73	Forest Ecology	?
17.	Robert Morris	UK	2-4/71	Modern Biology	90
18.	J. Ruinen	Holland	9/71-72	Plant Ecology	90
19.	Francisco Nemenzo	PI	?	Marine Biology	?

N.B. Almost without exception where the percentage of expectation is 90, only the formalities of the agreement are unfinished. Both Bruce and Groves seem much more between 90 and 100% than the percent shown. Where there is a question mark (?) nothing is known.

- \* Available anytime as a part-time consultant. In about one year, Dr. Corner is expected to be available full-time for 2 to 3 years, perhaps for 5 years.
- \*\* Available as requested. (Dr. Serene is stationed in Singapore).
- \*\*\* Available anytime for any length of time--requires only transportation and some living allowance.

UNCLASSIFIED

6. The decision to limit the program and to phase it as planned in the proposal has not reduced the interest of donors. In fact, it seems to have stimulated new interests and crystalized support from several major donors:

a. The UK has demonstrated its intentions to support BIOTROP by paying all costs for Dr. Soemarwoto, the Acting Director of BIOTROP, to go to London in March 1970. He will negotiate the UK contributions which appear to be at least \$750,000 (original value) in good used equipment; scholarships for Asians to be trained in the BIOTROP Program; for Asians, particularly the BIOTROP staff, to take advanced work in the UK; and for at least five and perhaps ten man-years of consulting and/or visiting scientists' time. In addition, the UK is agreeable that Dr. Soemarwoto, while on this trip, accept invitations to stop in Switzerland, the Netherlands, Germany and Poland to negotiate contributions.

b. Personnel are assured from the Netherlands-- the first scientist is expected to arrive in May 1970.

c. Swiss scientists will participate in the program. The first will arrive in March 1970.

d. Australia sent official observers at various times while the proposal was being formulated, and has offered to pay all expenses for Dr. Soemarwoto to go to Australia.

e. UNESCO has suggested the precise proposal for BIOTROP to make so that a grant can be made, i.e., for the Clearing House Project.

f. A WHO grant should be finalized by July 1, 1970.

g. A small initial grant from the Rockefeller Foundation seems certain.

h. Ford Foundation, Bangkok, requested a proposal, covering certain major ecological aspects of the program, which has been prepared by BIOTROP and given to Ford Foundation.

7. RED believes the projected ratio of 30 man-years of non-Asian to 228.5 man-years of Asian time is about right (see page 43 ), and that the projected number of non-Asian scientists will be required to give the program status and the expertise lacking among the SE Asians.

8. BIOTROP is aware of the danger of starting too large and expanding too fast, and despite the abundance of manpower (non-Asian) and probability of funds (non-Asian) to be drawn upon, has proceeded prudently.

9. Some LBN facilities must be renovated and others added. Adequate facilities for visiting scientists and students have been lacking for LBN and thus non-existent for BIOTROP. Living accommodations, especially for students are in such short supply as to be practically non-existent. Interim arrangements for the program as phased have been worked out until remodeled and new facilities are available. Interim room and board arrangements have been made by leasing space at an agriculture training school five miles outside Bogor. Two buses ~~have been purchased~~ <sup>will be used</sup> to shuttle students and a pro-rated lease charge of approximately \$350 per year has been absorbed in the operating costs. Remodeling will be done within a few months. The new facilities will not, however, be available until the end of the second year.

10. The proposed new living accommodations are essential, modest and functional. However, even with crowded use, they may be inadequate by the end of the 5-year program.

11. The Indonesian staff of BIOTROP tend to be limited in their administrative experience and should have assistance in the institution building aspects of the program. BIOTROP has requested such assistance from the Ford Foundation. RED believes that the Ford Foundation services will substantially help assure optimum conditions for institution building.

#### D. RED RECOMMENDATIONS:

1. That USG participate in the BIOTROP program with matching funds equal to 50% of the total fundings.

2. That USG participation in the 5-year program be initiated prior to the close of FY-70. This will enable the full operational program to begin July 1, 1970, in accordance with the BIOTROP Advisory Council-SEAMEC resolutions.

3. That the provision through renovations and new construction of adequate work and living accommodations for BIOTROP be given high priority attention and support.

4. That the use of outside scientists/consultants continue to be restricted to the level now projected in the program.

5. As may be required, RED should complement and/or supplement the Ford Foundation consultative assistance to the building of BIOTROP as a permanent regional institution.

UNGER

Proj: 4980/98.5  
Pw-

PROJECT AUTHORIZATION

1. PROJECT NUMBER 498-11-690-198, 5		3. COUNTRY East Asia Regional		4. A 0071	
2. PROJECT TITLE Regional Education Development Subproject - SEAMEC Regional Center for Tropical Biology (BIOTROP)				5. AUTHORIZATION DATE 7/14/70	
7. LIFE OF PROJECT				6. PROP DATED March 31, 1970 TOAID A 729	
a. Number of Years of Funding: <u>8</u> Starting FY 19 <u>68</u> ; Terminal FY 19 <u>75</u>			b. Estimated Duration of Physical Work After Last Year of Funding (in Months): <u>12</u>		

FUNDING BY FISCAL YEAR (in U.S. \$ or \$ equivalent)	DOLLARS		P.L. 480 CCC + FREIGHT	LOCAL CURRENCY Exchange Rate: \$1 =			
	GRANT	LOAN		U.S. OWNED		HOST COUNTRY	
				GRANT	LOAN	JOINTLY PROGRAMMED	OTHER
Prior through Actual FY 69	185733						
Operational FY 70	291506						
Budget FY 71	883771						
B + 1 FY 72	464644						
B + 2 FY 73	309129						
B + 3 FY 74	319687						
All Subsequent FY's (75)	312036						
<b>TOTAL</b>	<b>2,766,506</b>						

9. DESCRIBE SPECIAL FUNDING CONDITIONS OR RECOMMENDATIONS FOR IMPLEMENTATION, AND LIST KINDS AND QUANTITIES OF ANY P.L. 480 COMMODITIES

Subsequent to PROP submission agreement was reached to continue one more interim/transitional year (6/70-7/71, U.S. cost \$291,506) prior to the 5 year operational program to begin July 1971. This will result in some revisions at a later date in 5 year cost estimates which may be further adjusted as detailed building plans and construction costs are developed. Requests for U.S. FY 71-75 funding will be reviewed prior to approval.

10. CONDITIONS OF APPROVAL OF PROJECT

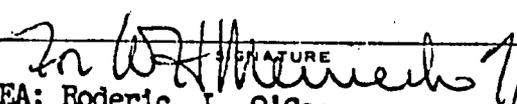
Subject to annual review for OYB purposes, and for consistence with overall SEAMEC project for matching of funds as agreed or planned, and for continued consistency with testimony given to the Congress.

(Use continuation sheet if necessary)

11. Approved in substance for the life of the project as described in the PROP, subject to the conditions cited in Block 10 above, and the availability of funds. Detailed planning with cooperating country and drafting of implementation documents is authorized.

This authorization is contingent upon timely completion of the self-help and other conditions listed in the PROP or attached thereto.

This authorization will be reviewed at such time as the objectives, scope and nature of the project and/or the magnitudes and scheduling of any inputs or outputs deviate so significantly from the project as originally authorized as to warrant submission of a new or revised PROP.

A.I.D. APPROVAL	CLEARANCES	DATE
 AA/EA: Roderic L. O'Connor TITLE: _____ DATE: 7/14/70	EA/I: AShakow (Draft)	6/24/70
	EA/TECH: JShafer (Draft)	6/24/70
	EA/RD: LMDurso (Draft)	6/24/70
	A/CONT	

**AIRGRAM**

**DEPARTMENT OF STATE**

UNCLASSIFIED  
CLASSIFICATION

For each address check one ACTION | INFO  
 X

Proj. 403-103  
BIOTROP

DATE REC'D.

80W

3 50

DATE SENT

4-1-70

2  
DISTRIBUTION  
ACTION

EAB  
INFO.

OA

TAB

ITAD

IS

AAC

TO - AID/W TOAID A TEC

FROM - BANGKOK

SUBJECT - RED: SEAME Proposal for a Regional Center for Tropical Biology (BIOTROP)

REFERENCE - 498-11-690-198.05

1. Transmitted herewith through the attached PROP is the Southeast Asian Ministers of Education Council's (SEAMEC) proposal\* for a Regional Center for Tropical Biology (BIOTROP). A draft letter of agreement between SEAMEC, the Government of Indonesia and RED is in process and should be ready for AID/W EA/RD review by about May 1. Also in process is a working document concerning understandings between RED and USAID/Indonesia, and as appropriate the Government of Indonesia and BIOTROP, as to respective responsibilities for implementation of BIOTROP. The latter document should be completed by the end of May 1970.

2. It will be noted that there are some differences between budget figures used in the PROP and those used in the SEAMEC proposal, particularly for the first year. Those differences, which are due to refinements made since the SEAMEC proposal was prepared are explained in the PROP.

3. The two-volume proposal is being edited by the BIOTROP staff to correct errors and reproduce the proposal in more attractive form for distribution.

State  
AGR  
HEW

\*Without final editing. Note last paragraph above.

**ATTACHMENTS:**

PROP  
Program Proposal (SEAMEC/P11/PP/1) - 4 copies

UNGER

PAGE 1 OF 1 PAGES

DRAFTED BY RED:RVanDuy:n:fc	OFFICE RED	PHONE NO. 314	DATE 3-31-70	APPROVED BY: MCrawford
--------------------------------	---------------	------------------	-----------------	---------------------------

AID AND OTHER CLEARANCES  
RED:PBaidler DD AD/P LA AD/PH M/CR DIST: AMB, DCM, EXEC, ECON, SA MC, POL, USOM-12, RED-3, FILES

UNCLASSIFIED  
CLASSIFICATION