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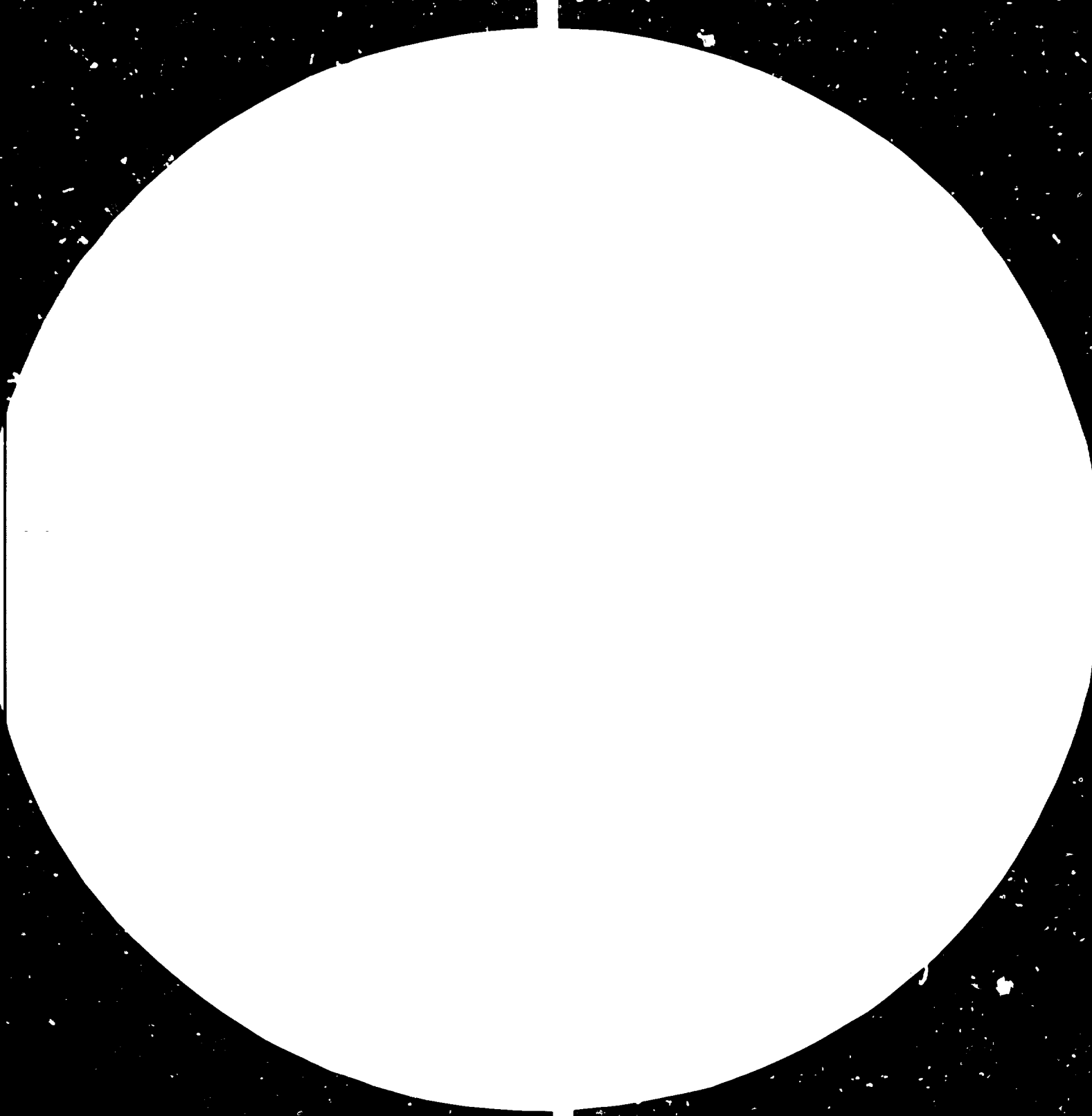

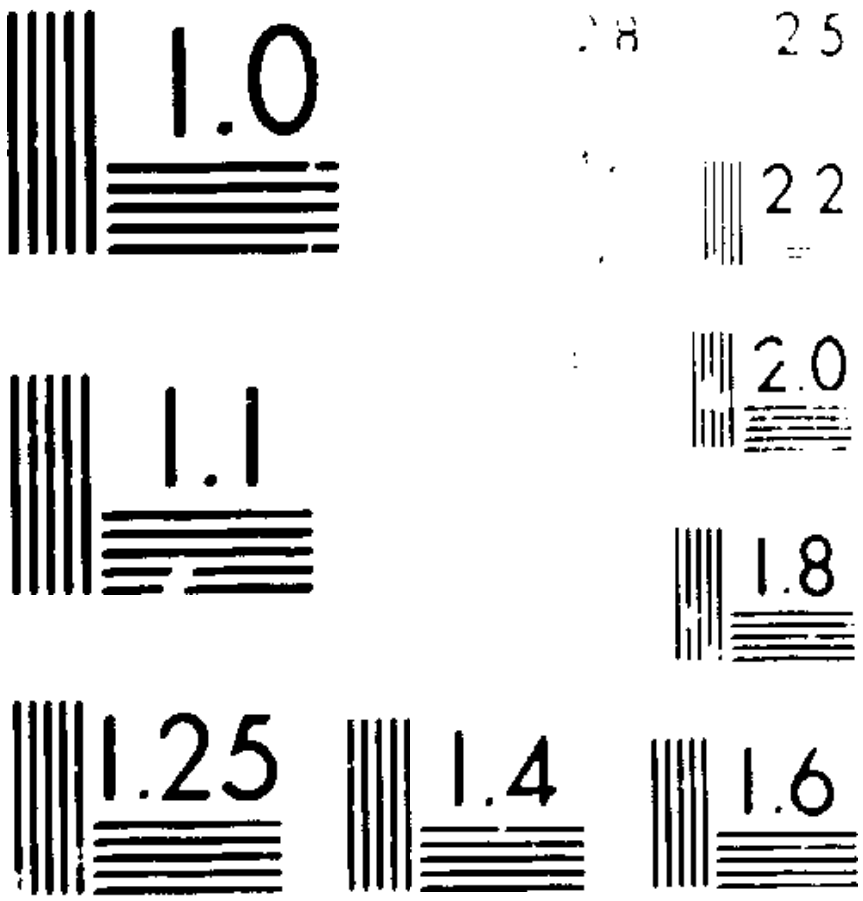
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UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Regional Network for the Production,
Marketing and Control of Pesticides
in Asia and the Far East

First Technical Advisory Committee Meeting

Manila, Philippines, 8-12 November 1982

REPORT* (Meeting on pesticides, Asia and Far East).

DP/RAS/82/006

Prepared by

William Magee

Pesticide Consultant

for the Participating Governments of

Afghanistan, Bangladesh, India, Indonesia, Korea, Pakistan,

Philippines, Sri Lanka and Thailand

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INTRODUCTION

1. The Technical Advisory Committee (TAC) of the Regional Network for the Production, Marketing and Control of Pesticides in Asia and the Far-East (RNPAF) met in Manila, Philippines, from 8-12 November, 1982 at the Manila Garden Hotel.

2. This session to prepare the work plan for network activities was attended by 9 delegates representing their respective government and institutions, 5 representatives of 4 international organizations and 3 observers. The list of participants at the TAC meeting is attached in Appendix 1 of the Report.

3. The proceedings of the Meeting are summarized below.

I. OPENING OF THE MEETING

4. As Coordinator of RNPAF and representative of the host country, the meeting was opened by Mrs. Cecilia P. Gaston, Deputy Administrator, Fertilizer and Pesticide Authority of the Philippines (FPA), who introduced the participants.

5. Mr. Miguel M. Zosa, FPA Administrator, was then introduced to welcome the participants on behalf of the hosting country. He charged them with the task of forming a work plan for the network that would ensure its successful establishment as a viable and useful contributor to the pesticide industrial development of its member countries and the region to which they belong.

6. Dr. K. Szabo, UNIDO, briefed the TAC delegates on the difficult work which they were to accomplish and stressed that they would be serving as a sole model for a new approach, with new, untested methods to utilize regional resources and talents in a vital sector of their industrial development efforts.

7. Brief statements were also made by Mr. W. D. E. Staring, ARSAP/Agro-Pesticides, (Program of ESCAP) who presented ARSAP's position with regard to Network Activities which may assume responsibility for the collection of regional pesticide supply and consumption data when ARSAP/Agro-Pesticide terminates on 1 August, 1983; Dr. A. Adam, FAO; Dr. Y. H. Bang, WHO; and Mr. I. Pluhar, UNDP-Manila representing the UNDP Resident Representative.

II. ELECTION OF OFFICERS

8. Dr. R. Hamsagar (India) was elected Chairman and Mr. S. A. Khan (Bangladesh) Rapporteur of the Meeting.

III. ADOPTION OF THE AGENDA

9. The Meeting adopted its agenda (Appendix 2).

IV. PRESENTATION OF COUNTRY PAPERS

10. All delegates from the 9 participating countries provided papers on the status of the pesticide industry in their respective countries. For their oral presentation they were requested to give a brief digest of the most significant points and prepare summaries for attachment (Appendix 3) to the report of the meeting. They were also asked to complete a tabular form itemizing their needs according to priority and facilities they could provide for project operations so that preparation of the network's plan of work and a revised project budget for these activities could be accelerated.

V. DESIGNATION OF HIGH PRIORITY AREAS FOR REGIONAL COOPERATION

11. Production, Formulation and Marketing of Pesticide;
12. Standardization of Quality Control and Analytical methods;
13. Harmonization of Registration Requirements;
14. Toxicology;
15. Trade and Tariff Agreements;
16. Data Collection; and
17. Documentation and Information Service.

The results of the Committee's deliberations of items 11-17 are reflected in the Manning Table (Appendix 4)

VI. ESTABLISHMENT OF SUB-NETWORK ACCORDING TO PRIORITIES

18. Based on the priorities given to items 11-17 above, and the rationale that some inter-relationship were so intimate that divisions on subject matter lines might produce coordination hardship, the Committee designated 5 sub-networks to be administered as follows:

19. Production, Formulation and Marketing Sub-network under the leadership of National Coordination Unit of India;

20. Harmonization of Registration Requirements and Standardization of Quality Control and Analytical Methods Sub-network will be jointly coordinated by the Regional Coordination Unit because of the close inter-relationship between the two activities.

21. The Toxicology sub-network shall be coordinated by Pakistan.

22. Trade and Tariff Agreement Sub-network to be administered by the National Coordination Unit of India.

23. Data Collection and Documentation and Information Services were not given sub-network status because they were considered to be an integral part of the Regional Coordination Unit's responsibilities who will direct these activities.

24. The ARSAP/Agro-Pesticides programme, which is a precursor-project for pesticide production and consumption data collection activities upon which the Regional Network Project Document places high priority, will terminate on 1 August 1983, but its reduced staff will continue to collect these data until this service can be taken over by RNPAF, consequently, ARSAP's position is as follows:

    1. ARSAP/Agro-Pesticides will definitely be terminated on 1 August 1983. No follow-up support of the project within ESCAP is being sought.

    2. ARSAP will stimulate and encourage the set up of a data collection function within the new UNIDO Pesticide Network. ARSAP will render full co-operation in the transfer of this function to UNIDO, provided that its Network will have activated its data collecting function to the extent that neither the flow of data on agro-pesticides nor the lines of communication will be interrupted when the activity will be taken over.

    3. If further delays are expected in the establishment of a data reporting system within the UNIDO network, several arrangements might be considered in deliberations between UNIDO and ESCAP. One such arrangement would possibly be that ESCAP fulfills the data collection function as a kind of subcontractor on behalf of UNIDO, until the UNIDO Network has been put on full stream. Under such an arrangement ESCAP would give full access to facilities such as the Information and Documentation Unit, secretariat services, etc. Staffing would have to be provided by UNIDO/UNDP. ARSAP hopes, however, that no further delays of the UNIDO Network will arise, so that no special arrangements will be necessary to fill a gap in the pursued continuous flow of data.

25. The ARSAP representative will consult during the course of the meeting, with the representative of the participating countries to try to come up with a kind of broad categories of data which should be selected according to the wishes of the countries;

26. There should be communications between ESCAP and UNIDO regarding the maintenance of working level contacts on a regular basis between the officer in charge of the ARSAP project and the Network counterpart in order to prepare an orderly transfer of material in due time. ARSAP/Agro-Pesticides requested during this session that a Network counterpart be named as soon as possible.

27. When this is done communications between the two sections could be established to exchange communication channels to sources of information that the Network will be seeking.

28. ARSAP supported the convening of a joint ARSAP/RNPAF workshop after details are worked out by official correspondence with good prospect that ARSAP could share the expense.

29. The view of UNIDO is that the National Coordinating Units should be responsible for data collection and submission to the Regional Coordinating Center for the Pesticide Network. It was apparent that each National Coordinating Unit keep the Regional Coordinating Unit's documentation and information services informed of what material was available and that all communications between these centers be direct. Furthermore, the National Units were urged to find ways to overcome restriction that their governments might impose on the access to and flow of pesticide supply and consumption information.

VII. WORK PROGRAMME FOR THE DURATION OF THE PROJECT

30. Data were provided by delegates on facilities available in their countries and their needs on technical assistance requirements available for project activities. Based on this the work programme has been so designed to incorporate the utmost priority items leaving other subjects for future considerations and implementation beyond the present life time of the project.

The manning table (Appendix 4) and budget sheet (Appendix 5) were derived from these deliberations and reflect the requirements of the participating countries with respect to consultancy services, fellowship training and group activities.

VIII. PROPOSALS FOR A TENTATIVE WORK PLAN FOR SUBSEQUENT YEARS

31. Without exception, the subject matter areas in which the project will engage are very long term activities and require future support. One, Data Collection and its associated activity,

Documentation and Information Service, can be considered continuous. Other than recognizing this circumstance, the Committee did not undertake to project a longer term manning table because the composition of the Network's membership is likely to change as are the priorities of the participating governments. The delegates strongly felt that the Network's objectives are of long term nature and of vital significance to the social and economic status of the region, which houses half of the world's population. It was therefore unanimously recommended that all possibilities for its long term continuation (at least five years) and continued financial support from all sources should be explored by UNIDO.

32. The Technical Advisory Committee recognizes that Sub-Network can be established and their activities modified by TAC as dictated by the needs of the participating countries from time to time.

IX. METHODS OF PROJECT IMPLEMENTATION

33. Appendix 6 has been drafted by concensus of the Committee membership to establish administrative guidelines for the execution complex regional programme. Within these guidelines, the TAC recommended that procedures should be used in as flexible a manner as possible for the most expedient execution of Network affairs.

X. ADOPTION OF THE REPORT

34. The Committee discussed and amended the draft report and adopted the report in its present form.

SUMMARY

The Technical Advisory Committee (TAC) of the Regional Network for the Production, Marketing and Control of Pesticides in Asia and the Far-East (RNPAF) met in Manila, Philippines, from 8-12 November, 1982 at the Manila Garden Hotel.

TAC recognized the following as high priority areas for regional cooperation and designated them as sub-networks:

a. Production, Formulation and Marketing of Pesticides;
b. Standardization of Quality Control and Analytical methods;
c. Harmonization of Registration;
d. Toxicology; and
e. Trade and Tariff Agreements.

Two high priority activities, Data Collection and Documentation and Information Services, were considered to be an integral part of the Regional Coordination Unit's responsibilities.

The ARSAP-Agro-Pesticides (Programme of ESCAP) will terminate on 1 August 1983 and its data collection function will be assumed by the Network provided it is operational at that time.

A work plan, budget and procedures for implementing network activities for 1983-84 were drawn up taking into consideration the requirements of the participating countries and the budgetary limits fixed by the project document.

The delegates strongly felt that the Network's objectives are of long term nature and of vital significance to the region. It was unanimously recommended that all possibilities to maintain the programme for at least 5 years with continued financial assistance from all sources be explored by UNIDO.

Appendix 1

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9. Mr. Loreto Ibe
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11. Miss Bella Fe Dimaculangan

Appendix 2

TECHNICAL ADVISORY COMMITTEE MEETING
For The
Regional Network for the Production,
Marketing and Control of Pesticides in
Asia and the Far-East

Organized by
United Nations Industrial Development Organization
to be held in Manila/Philippines from 8-12 November, 1982

AGENDA

1. Opening of the meeting
2. Election of Chairman, Vice Chairman and Rapporteur
3. Adoption of the Agenda
4. Presentation of country papers
5. Designation of high priority areas for regional cooperation
    a. Production and formulation of pesticides
    b. Standardization of quality control and analytical methods
    c. Harmonization of registration
    d. Trade and Tariff agreements
    e. Data Collection
    f. Documentation and Information Service
6. Establishment of sub-networks according to priorities
7. Assignment of regional coordination of Sub-networks and Budgetary Needs
8. Requirements in the field of training and assignment of fellowships and National Budgetary Needs.

9. Requirements for consultancy services in regional cooperation and related national programmes.
10. Group activities
11. Establishment of a work programme for the first year operation of the project.
12. Proposals for a tentative work plan for subsequent years
13. Methods of project implementation
14. Other business
15. Adoption of conclusions and recommendations.
16. Closing of the meeting.

Appendix 3 SUMMARIES OF COUNTRY PAPER

SUMMARY OF COUNTRY PAPER

AFGHANISTAN

It is estimated that a minimum of 20 per cent of grain crops are lost annually to pests and diseases. Control of these pests and disease is vital to crop production in Afghanistan as is the case of other developing countries. The most effective protection against harmful pests can be achieved by pesticide use.

A serious consideration for our country is that essentially all pesticides are being imported through AFASCO from other countries and a large amount of foreign currency is required for importation of agro-pesticides every year.

Our country needs assistance from concerned U.N. Organizations to study the possibility of utilization of raw material in Afghanistan to produce some needed agro-pesticides to meet, in the first place, the domestic need. As it is obvious from the previous sales and supply tables in this report, the importation and use of pesticides have increased in Afghanistan each year and of course with a noticeable rate. Likewise, the prices being paid annually show a much higher rate for imported agro-pesticides. These prices of agro-pesticides are constantly on the rise and these are controlled by suppliers from industrial countries.

In regards to Supply, Importation, Distribution, and Marketing of agro-pesticides, Afghanistan and Afghan Fertilizer and Agricultural Services Co. as the responsible organization has had some difficulties which have already been reflected in Mr. William Magee's Report after his visit to AFASCO, Kabul, on UNIDO assignment. We hope to solve our problems especially in the fields of;

1. Technical Assistance
2. Training Programmes
3. Documentation and Information

as well as our other problems with assistance from United Nations Organizations such as UNDP, FAO, ESCAP, and UNIDO. Our immediate needs are:

1. Selection of proper pesticide formulations from first hand manufacturers with fair prices, good qualities and environmental safety.

2. Testing and control facilities (laboratories) to determine and compare the % active ingredient of imported pesticides to monitor and control their quality.

3. Reduce the losses caused by the deterioration of agro-pesticides due to poor formulation, packing and storage. Our present warehouses lack facilities to prevent or reduce losses resulting from prolonged storage at extreme seasonal temperatures' fluctuations.

4. Need for bulk importation of pesticides and a re-packing and rebottling project within our country which shall result in the ultimate lower prices of imported agro-pesticides.

5. AFASCO needs a formulating plant to import agro-pesticides as technical grade to reduce the freight prices we presently pay for finished products.

UNDP/UNIDO REGIONAL PESTICIDE NETWORK
1ST TECHNICAL ADVISORY COMMITTEE MEETING

Manila Garden Hotel
November 8-12,1982

SUMMARY OF COUNTRY PAPER

BANGLADESH

Current activities and Future needs for production, marketing and control of pesticides in Bangladesh.

Abstracts

The use of pesticides in Bangladesh was introduced in 1956 with only three tons of pesticides. The consumption has gradually risen and the current years target is about 6,000 MT. This figure is likely to go up to 22.5 thousand tons by the end of 1985.

There is only one plant in the country for manufacture of DDT with rated capacity of 1,500 tons. This plant is now operating partially to meet the requirements of Public Health. Most of the agricultural pesticides are imported as finished products. There are three formulation plants -- one belonging to M/S Ciba Geigy, one to M/S ICI, and other to M/S Insecticides Enterprise. Government has approved the establishment of a Pesticide Industry to manufacture technical materials of diazinon, DDVP, fenitrothion and malathion.

Pesticide trade has been handed over to the private sector since November 1979. The government allocates necessary funds for procurement of pesticides. The local Pesticide Association handles the procurement, distribution and sale of 97 registered products. These pesticides are sold to farmers through about 20,000 dealers.

The plant Protection Division of the Department of Agricultural Extension provides Plant Protection Services to the farmers in addition to advising the government on the subject. The following are the main other responsibilities of this Division.

1. Implementation of Pesticides Act and Rules thereunder
2. Registration and Licensing
3. Quality Control
4. Residue Monitoring
5. Standardization of Packing and Labeling
6. Dealers Training
7. Toxicological Studies
8. Survey and Monitoring of Pesticide Supply and Demand.

The priorities of future needs on pesticides are given hereunder:

1. DDT factory requires to be run to its full capacity. The excess quantity after use in Public Health is to be exported to the member countries were needed.
2. Regional cooperation in the field of local formulation of pesticide.
3. Exploration of indigeneous raw materials for manufactures and formulation of pesticides.
4. Registration harmonization among the member countries.
5. Strengthening the Pesticide Quality Control Laboratory and harmonization of methods for formulation analysis work and residue analysis.
6. Exchange of technical programs among the member countries
7. To build up skilled personnel through training in the field of manufacturing and formulation technology, residue analysis, pesticide management, toxicology and legislation.

Mr. William J. Magee's recommendation as shown in the UNIDO Terminal Report satisfy our projected needs. We cannot render any assistance during the first year of operation.

Bangladesh reiterates to lend strong support to the establishment of the proposed regional network for the production, marketing, and control of pesticides in Asia and Far East.

UNDP/UNIDO REGIONAL PESTICIDE NETWORK
1st TECHNICAL ADVISORY COMMITTEE MEETING

Manila Garden Hotel
November 8-12,1982

SUMMARY OF COUNTRY PAPER

INDIA

SUGGESTED SCHEME FOR FINALISING REGIONAL WORK PLAN FOR PESTICIDES DEVELOPMENT AS PRESENTED IN INDIA'S COUNTRY PAPER.

For an effective regional cooperation, following activities are suggested for incorporation in the regional work plan:

1. Regional study group: Constituting a study group of regional experts to consolidate and recommend cooperation measures in the following areas:

   i) Consolidate the experiences gained in the use of pesticides in agriculture and public health.

   ii) Work out a practical scheme for harmonisation of registration procedures for rapid growth of pesticides consumption in the region.

   iii) Identify areas of cooperation in the field of technology transfer in basic and formulated pesticides from within the region.

2. Training Programmes: Consolidate the planned training programmes on pesticides development in the region and coordinate for maximum regional participation.

3. Transfer of information on availability of pesticides applications equipments and application techniques:

   On the lines of the ARSAP, work out a scheme of regional transfer of pesticides application equipments and techniques in order to develop indigenous capability in their fields by the respective countries.

SUMMARY OF COUNTRY PAPER

PESTICIDE INDUSTRY IN INDONESIA

Pesticide industry in Indonesia started with the formulation stage. The first formulation unit was set up in 1972, and several units were established in the following years. In 1982 total registered pesticide formulators are 16 companies, with a total rated capacity 91,030 ton (kl) year. All of the active ingredients needed by the existing industries are imported.

In 1982 it is expected one Government company will produce active ingredients with 4,000 ton/year rated capacity consisting:

- Diazinone : 2,000 ton/year
- Panthoate : 650 ton/year
- BPMC : 900 ton/year
- MIPC : 450 ton/year

From the Ad Hoc Interdepartmental Team, Feb. 1982, it was learned that:

- For 1982 requirements of pesticide active ingredients for BIMAS/INMAS programme is about 2,400 ton. This figure represents ± 75% of the total requirements of pesticides.
- It is estimated that growth rate of pesticide demand is about 20% per year.

Based upon those data and by considering that active ingredient is 50% of pesticide, demand for pesticide until 1989 can be met by domestic production, except for those products not being manufactured locally.

Since pesticide are dangerous if not used properly, several Government Regulations have been issued. Some are:

- Government Regulation No. 7/1973 about Control of Circulation, Storage and Utilization of Pesticide.
- Minister of Agriculture Decree No. 200/kpts/UM/6/1973 about Procedure of Pesticide Registration and Permission
- Minister of Agriculture Decree No. 429/kpts/UM/9/1973 about Packaging and Labeling Condition of Pesticide.

At present time most of Research and Development activities in pesticide formulation are carried out by the industry. Since active ingredients will be developed in the coming years, R & D facilities must be prepared. For that reason, the Institute for R & D of Chemical Industry (IRDCI) will play an important role. For the first stage R & D can be carried out to answer the possibility of using local raw materials for carrier, solvent adjuvant, etc. It will be done by IRDCI in 1983/1984. In order to maximize the result of this R & D, effort, expert technical assistance will be needed.

SUMMARY OF COUNTRY PAPER

K O R E A

THE PRESENT STATUS OF PESTICIDE IN KOREA

Manufacturers concerned with the pesticide industry in Korea total 53 companies made up of 11 formulators, 14 technical and formulation manufacturers, and 28 technical importers. Expressed as active ingredient, 16,132 M/T of Pesticides were used throughout the nation in 1980. Of the pesticides, insecticides were the most largely sprayed as 38% of total and followed by fungicides 34% and herbicides 21%. About 56% of pesticides produced was consumed for Paddy rice in 1980.

Pesticides produced by manufactures are provided to farmers through two main marketing channels. One of them is the route via agricultural co-operatives, the other is the marketing channel built up by manufacturers like a common commodity distribution system.

At the present time, a total of 237 pesticide items are available, which comprise 73 fungicides, 110 insecticides, and 54 herbicides, plant growth regulators and others. Korea imported $109 Million worth of technical materials and exported $5 Million of 17 species of technical product.

Use applications for newly developed pesticide items are submitted by manufacturers under the present pesticide management law, to the office of Rural Development through Agricultural Chemicals Industrial Association. Then these applications examined and processed by the office of Rural Development, Agricultural Chemicals Research Institute and Pesticide Management Committee. Experiments with candidate items to be tested, are entrusted to reliable institutes and the results are used to register the product. Candidate items which pass this examination are approved by the pesticide management committee and sub-committee and registered as a new product whose production is permitted.

Quality control of pesticides are mainly monitored by National Agricultural Material Inspection Office. This agency re-examines carefully the quality of pesticides which is also monitored by manufacturers. In addition, periodical quality survey are performed for available pesticides collected from factories and markets at random.

Pesticides used for crop protection from diseases and insect pests also have more or less toxicity to mammals, from this view point, establishment of safe use standards is indispensable to reduce the undesirable side effects caused by these chemicals, such as human intoxication and environmental contamination. Safe use standards of pesticides have been established on various crops to minimize the pesticide contamination of food stuffs. At present this has been done for 90 items of 237 pesticides being used.

Portions of pesticide sprayed remain for fairly long period not only in harvested crops but also cultivated soil and water. Very small amount of these residues may be the cause of environmental contamination. Therefore pesticides are classified in sub groups with respect to their toxicity and are subjected to special legal regulation in handling and application.

To reduce the loss of the agricultural products by disease and insect pest outbreaks, physio-ecological properties of the pest or disease should be well understood so that the suitable pesticide may be timely applied. International information exchanges for efficient pesticide utilization are necessary to solve the many problems created when pesticides are applied for the control of diseases and insect pests.

We need some short term training for personnel and consultations in the fields of toxicology, formulation and pesticide residue analysis at the newly established Pesticide Research Institute.

UNDP/UNIDO REGIONAL PESTICIDE NETWORK
1st TECHNICAL ADVISORY COMMITTEE MEETING

Manila Garden Hotel
November 8-12,1982

SUMMARY OF COUNTRY PAPER

Pakistan

According to estimates the crop losses in Pakistan due to insects, diseases and weeds account to 50% of the agricultural produce which is estimated at about five billion dollars, Pakistan embarked upon pesticides use in agriculture in 1954 when 256 tons of formulated material was imported for the first time. According to estimates 1038 metric tons of active ingredient of pesticides worth rupees about 28 million were used in 1981 summer.

At present there exists an installed capacity for production of about 4,700 metric tons of BHC and DDT; apart from this formulation facilities for 26,000 metric tons of granules, 23,000 MT of dusts and wettable powders and 2.5 million gallons of emulsifiable concentrates are available. The two DDT and BHC manufacturing plants are in the public sector. All these production and formulation plants are not being fully utilized. The imports, marketing and use of pesticides, till recently, was the responsibility of agricultural departments in the provinces for ground spraying and of the department of plant protection of the Government of Pakistan for aerial spraying.

The spraying for most of time, was done free of cost. This in addition to heavy financial burden on government exchequer prevented the progress of pesticide industry and transfer of knowhow to private sector and the farming community.

Since the Government was importing, marketing and using pesticides the promulgation of Agricultural Pesticides Ordinance was delayed to 1971 and the rules to 1973. Under these rules necessary provisions exist for registration, marketing and safe use of various pesticides. The Ministry of Food, Agriculture and Cooperative Government of Pakistan through Pakistan Agricultural Research Council and Department of Plant Protection is responsible to implement the Ordinance and Rules. The Pesticides Registration applications, along with samples and analysis procedures, are passed on to PARC and to provincial governments for analysis and field testing against the major agricultural pests. The results of test are discussed in the "Agricultural Pesticides Technical Advisory Committee (APTAC) consisting of members drawn from the various provincial and federal agencies relevant to the subject. If the performance of this product is considered satisfactory registration is granted. The testing procedures and the process of registration needs considerable thought and improvement.

The PARC is planning to strengthen facilities, through international assistance particularly UN agencies, for the development, bio-assays and safe use of pesticides. In a series of consultancies, hosted by PARC, it has been recommended that Pakistan Government may create an Agricultural Pesticides Development and Regulatory Agency in the Ministry of Food and Agriculture independent of provincial and federal influences with infrastructure and delegated powers to implement the Agricultural Pesticides Ordinance; and Development and Use of Pesticides.

The Pakistan proposal with regards to technical assistance needs etc. are appended.

SUMMARY OF COUNTRY PAPER

PHILIPPINES

The Fertilizer and Pesticide Authority is the sole agency charged with the function of regulating all aspects of the pesticide industry. It is also responsible for the collection of data on supply and use of pesticides in the country. Since the implementation of certain facets of such functions requires a high level of technical expertise, FPA has formed an inter-agency Pesticide Technical Advisory Committee (PTAC) composed of experts in the various fields of pesticide management. These experts are seconded to FPA by their mother agencies in government. It is through these experts that all areas of pesticide registration, research and control are coordinated under the FPA.

The Pesticide Industry in the Philippines is entirely in the hands of the private sector. Except for 2,4-D which is locally produced, all other technical materials are imported and blended into finished products by 27 formulation plants. All surfactants, emulsifiers and solvents are imported, while clay, sand and other fillers are locally available. Packaging materials are also produced locally.

Pesticide supply depends heavily on imports of technical materials, and to a certain extent, on imports of finished products. For 1981, 47% of total imports represented finished products while 53% technical materials, 50-60% of technical materials imported are used for insecticide formulations while all fungicides, except for chlorothalonil are imported as finished products.

Distribution from formulation plant or mother company down to retail level remains in the hands of the private sector.

The only data available for indication of consumption are the sales statistics from APIP, which represent 95% of total market sales. Insecticides have captured 54% of the market's,followed by fungicides at 18%,then herbicides at 16%. The market has shown a steady growth rate of 15% for the past 3 years. Insecticides and herbicides are used mainly in rice, while fungicides on bananas.

The Philippines as regional coordinator accepts its responsibilities and solicits support of all national coordinators for the success of the Network.

UNDP/UNIDO REGIONAL PESTICIDE NETWORK
1st TECHNICAL ADVISORY COMMITTEE MEETING

Manila Garden Hotel
November 8-12,1982

SUMMARY OF COUNTRY PAPER

SRI LANKA

The import of Agrochemicals were permitted freely until 1962. From then on all pesticides imports had to be approved by an Agrochemical Formulary Committee. Subsequently local formulation was encouraged by the Government and local representatives of several major pesticides producers such as Bayer, Shell, Ciba Geigy, FMC, ICI, and shall establish formulating plants.

A breakdown in this system of control occurred with the liberalized import policy of the present government. Agrochemicals outside the approved list found their way in under Open General License. The Bill on Pesticides which had been gestating from 1964 was revived, enacted and gazetted in 1980, but development of the infrastructure and personnel to police and enforce the act has been delayed. As an interim measure, all approved chemicals (110 in number at present) are gazetted.

A state corporation and 4 other firms are equipped to formulate products, starting from imported concentrates or Technical material of 28 pesticides. Generally, except in the case of dusts and granules, all solvents and adjuvants are imported. At present the formulation capacity in the country is under utilized and could be increased 2-3 x should the demand arise.

Current Activities

(1) Biological testing for efficacy
(2) Regulating Pesticides

Organizational aspects for the implementation of the Act would be initiated before end of this year.

(3) Quality standards - set by the Bureau of Ceylon Standards.
(4) Quality Control - The Department of Agriculture has an analytical Laboratory set-up. Output is limited to formulations of about 25 pesticides due to limitations of trained staff and supplies.
(5) Residue Analysis - Limitations due to lack of knowhow of techniques to be adopted for extraction and follow-up methods for several OP or carbamates.

Contribution to the network - transfer of formulation technology of products whose patents have expired. MCPA, 34DPA, Parathion.

NEEDS (1) Assistance in Pesticide Regulation requirements
(2) Standard methods for residue monitoring of OP and carbamates.

SUMMARY OF COUNTRY PAPER

Thailand Country Paper
for the
1st Technical Advisory Committee Meeting
Manila, 8-12 November 1982

In 1981 Thailand imported pesticides for the agricultural production and public health sectors for about 62 Million U.S. Dollars or 5,200 tons of active ingredient. Sixty percent of this value were insecticides, twenty-five percent were herbicide and ten percent were fungicides. It was estimated that in the next five years, the importation of pesticides will be 60% higher.

The Thai government has a strong policy to encourage the investment in basic manufacturing of active ingredient since the discovery of the natural gas and petroleum. At present, there are two manufacturing plants of paraquat. One of them is in operation but another is expecting to operate in the near future.

In Thailand, the Poisonous Article Act has been in effect since 1967. There are 123 formulations of insecticides, fungicides, herbicides and others listed in the government gazette which need to be registered before marketing. The government agencies concerned with the research, development and control of pesticide are mostly under the Department of Agriculture, Ministry of Agriculture and Cooperatives. They are Entomology and Zoology Division, Plant Pathology and Microbiology Division, Botany and Weed Science Division, Agricultural Toxic Substance Division and Agricultural Regulatory Division. Pesticide registration is done through committees. The top one is the Committee on Toxic Substance Control. This Committee works through the following sub-committees:

1. Subcommittee on the Consideration of Toxic Substances
2. Subcommittee on the Consideration of Agricultural Toxic Substance Registration
3. Subcommittee on the Consideration of Public Health Toxic
4. Subcommittee on the Consideration of Means of Transportation, Storage, Production, Utilization and Disposal of Toxic Substance Containers.
5. Subcommittee on the Amendment of Poisonous Article Act of 1967.

APPENDIX 4

MANNING TABLE

CONSULTANCY

COUNTRY	NEED SUBJECT	DURATION	PROPOSED DATE	PRIORITY	Possible Regional Countries that can Provide
Afghanistan	Formulation Packing & Handling	2 m/m	Oct. 1983	1	India, Korea
Bangladesh	R & D Formulation	1 m/m	June 1983	2	India, Pakistan, Korea, Sri Lanka
	Regulation	1 m/m	June 1983	1	Pakistan, Korea, India, Philippines
Indonesia	Formulation	1 m/m	Aug. 1983	2	India, Pakistan, Korea
	R & D Manufacturing	1 m/m	July 1983	1	Pakistan, Korea, India
Korea	R & D Formulation	1 m/m	April 1983	1	India, Philippines
	Toxicology	2 m/m	Jan. 1984	2	Pakistan, India
Philippines	Toxicology	1 m/m	March 1984	1	Pakistan, India
	Analytical Instrument Maintenance	1 m/m	Feb. 1984	1	India, Korea
Pakistan	R & D in Manufacture	1 m/m	Sept. 1983	1	India, Korea
	Quality Control	1 m/m	Nov. 1983	2	Philippines
	Analytical Instrument Maintenance	1 m/m	March 1984	2	India, Korea
Sri Lanka	Regulation	1 m/m	May 1983	1	Philippines, India Pakistan, India
Thailand	R & D Feasibility in Manufacture	1 m/m	May 1983	1	India
GROUP ACTIVITIES	Registration: Harmonization	2 m/m	March 1983		
	Trade and Tariff	1 m/m	Feb. 1984		
	Toxicology	1 m/m	April 1984		
	Quality Control	1 m/m	July 1983		
		22 m/m			

TRAINING

GROUP ACTIVITIES NO. OF PARTICIPANTS		SUBJECT	TYPE OF T. ASSISTANCE
1.	15	Harmonization of registration	Expert consultation of N.N. Coordinators
2.	10	2nd TAC Meeting	-------
3.	10	Formulation	Workshop
4.	20	Quality Control and Residues	Workshop
5.	15	Trade, Tariff & relevant data	Expert consultation of N.N. Coordinators
6.	10	3rd TAC Meeting	-------
7.	10	Toxicology	Workshop
8.	10	Survey & Data Collection	Expert Meeting
	INDIVIDUAL		
9.	Afghanistan	Packing, Handling & Quality Control	Training Study Tour
10	Bangladesh	Formulation	Training
		Toxicology	Training
		Quality Control	Study Tour
11.	India	Pesticide Manufacturing	Study Tour
		Trade & Tariff	Study Tour
		Quality Control	Study Tour

PROPOSED DATE	PERIOD & DURATION	PROPOSED VENUE	PRIORITY
Sept.'83	1 week	Indonesia	1
May '83	1 week	Korea	1
Nov. '83	1 week	India	2
July '83	2 weeks	Philippines	1
Feb. '83	1 week	Sri Lanka	2
Aug. '84	1 week	Bangladesh, Austria	1
April '84	2 weeks	Pakistan	1
Feb. '83	1 week	Thailand	1
May '84	2 m/m	GFR, USSR, Hungary	1
June '83	1 m/m		
Feb. '83	1 m/m	India, Japan, Korea	2
March '84	1 m/m	Korea, Japan	
April '83	1 m/m	Philippines, Pakistan India, Korea	1
June '84	1 m/m	Regional Countries	1
Dec. '83	1 m/m	Regional Countries	
June '83	1 m/m	Regional Countries	1

	INDIVIDUAL	SUBJECT	TYPE OF T. ASSISTANCE
12.	Indonesia	R & D Manufacture	Study Tour
		Formulation	Training
		Quality Control	Study Tour
13.	Philippines	Formulation	Study Tour
		Toxicology	Training
		Documentation & Information Service	
14.	Korea	R & D Manufacturing	Study Tour
		Formulation	Training
		Toxicology	Training
15.	Pakistan	R & D Manufacturing	Study Tour
		Formulation	Training
		Toxicology	Study Tour
16.	Sri Lanka	Residue Methodology	Training
17.	Thailand	Toxicology	Training
		Quality Control	Study Tour

PROPOSED DATE	PERIOD & DURATION	PROPOSED VENUE	PRIORITY
Nov. '84	1 m/m	Canada, USA, Europe, India	2
Feb. '83	1 m/m	India, Korea	1
Apr. '83	1 m/m	India, Philippines Pakistan, Korea	
Nov. '84	1 m/m	India, Pakistan, Korea	1
March '84	1 m/m	Canada, USA, Europe Pakistan, India	2
Jan. '83	1 m/m	Thailand	1
Nov. '84	1 m/m	Canada, USA, Europe, India	1
Feb. '83	1 m/m	India, Philippines, Europe	2
March '84	1 m/m	Canada, USA, Europe, Pakistan, India	1
Nov. '84	1m/m	USA, Europe, India, Japan	2
Feb. '83	1 m/m	India, Korea	1
June '83	1 m/m	Canada, Europe, USA, India	1
Nov. '83	2 m/m	Pakistan, India, Philippines	1
March '84	1 m/m	Canada, USA, Europe, Pakistan & India	
April '83	1 m/m	India, Pakistan, Philippines, Korea	

APPENDIX 5

PROJECT BUDGET COVERING UNDP CONTRIBUTION
(In US Dollars)

Country : ASIA AND THE PACIFIC

Title : Regional Network for the Production Marketing and Control of pesticides in Asia and the Far-East

Component		TOTAL		1982		1983		1984	
		m/m	$	m/m	$	m/m	$	m/m	$
10	Experts								
11-50	Consultants	22	110,000			15	75,000	7	35,000
13-00	Support personnel		34,000		3,000		15,5000		15,500
16-00	Missions (UN Agencies)		42,500		7,500		20,000		15,000
19-00	Component Total	22	186,500		10,500	15	110,500	7	65,500
30-00	Training								
31-00	Individual	25	51,250			14	28,700	11	22,550
32-00	Group Training (Ad Hoc Techn. Committees Workshops, Advisory Committee Meetings) Consultations		214,250		26,000		116,250		72,000
39-00	Component Total	25	265,500		26,000	12	114,950	20	94,550
40-00	Equipment		40,000		40,000				
50-00	Miscellaneous		8,000				4,000		4,000
99-00	GRAND TOTAL		500,000		76,500		259,450		164,050

Appendix 6

IMPLEMENTATION PROCEDURES OF THE PROJECT ACTIVITIES IDENTIFIED IN THE WORK PLAN

(Excluding Project Support Mechanisms and Actions)

Steps	Nature of Activity
	I. INTERCOUNTRY GROUP-TRAINING, WORKSHOPS, ETC.
	(Assuming, as per work plan of activities, that subject matter, host country and target dates are known)
1.	Regional Coordinator asks NCU in the proposed host country to provide as detailed as possible an outline of the course/ workshop design within the limits set in the project document's work plan and budget. Also a profile of the participants who should attend the activity as designed and a paper on practical information for participants.
2.	Regional Coordinator consults UNIDO on No. 1 above, using services of local UNDP Office, if necessary.
3.	Regional Coordinator consults NCU in the host country on modifications suggested, if any and obtains confirmation of dates. (Goes back to UNIDO if necessary).
4.	Regional Coordinator drafts an aide-memoire together with instructions for the preparation of the report of the group training/workshop (as the case may be) at the completion of the activity. Regional Coordinator sends the two drafts to UNIDO through the local UNDP, if necessary.
5.	UNIDO reviews No. 4 above and sends: i) aide-memoire to various UNDP Representatives in participating countries who expressed interest, with copy of Regional Coordinator. ii) instructions for activity report back to Regional Coordinator (such instructions may be an outline of the report contents or a questionnaire).
6.	Regional Coordinator sends instructions to NCU in host country with copy to UNDP local office.
6.1	UNDP RRs. send nomination forms and aide-memoire to respective Governments with a copy to local NCU.

Steps	Nature of Activity
7.	The NCU shall recommend to Government for nomination at least 2 candidates (if possible) per position available to each of them which shall then be officially submitted by the government to UNDP RRs.
8.	UNDP sends No. 7 above to UNIDO, with copy to Regional Coordinator.
9.	UNIDO selects participants and informs UNDP RRs.
9.1	concerned, with copy to Regional Coordinator travel authorization to UNDP RRs.
10.	UNDP in host country asks latter to ensure visa issuance.
10. 1	UNDP RRs inform Gov'ts and provide tickets.
11.	Govts in consultation with NCU make travel arrangements (this may require cables to UNDP in host country re visas), with assistance of local UNDP Office if required.
12.	UNDP RRs inform UNDP office in host country of ETA, with copy to UNIDO and Regional Coordinator.
13.	Activity implemented by NCU in host country with participants.
14.	At appropriate time, participants elect rapporteur who, with a small group, will draft group report.
15.	NCU in host country ensures it is done and sends it to R.C.
15.1	Participants depart after arrangements for return journey made by NCU in host country with help of local UNDP Office if any problems arises.
16.	UNIDO reviews and sends with comments, if any, NCU in host country through UNDP local office or through R. C. via UNDP Manila, as appropriate. In any case it sends a copy to UNDP RR in the Philippines (as PPR for UNDP).

Steps	Nature of Activity
	II. FELLOWSHIPS (assuming who/when/where is known)
1.	R. C. asks NCU in host country to design training programme as per produc's work plan and budget. Also a paper of practical information.
2.	R. C. consults UNIDO HQ on No. 1.
3.	R. C. consults NCU in host country on modifications, if any, and obtains confirmation of dates - (Goes back to UNIDO if necessary - and finalizes it.
4.	R. C. asks NCU in requesting country to fill UNIDO nomination forms based on No. 3. Gives practical information paper.
5.	Govts. send them, via UNDP, to UNIDO cc: R. C.
6.	UNIDO evaluates nominations and informs UNDP Office(s) concerned with copy to R. C. and Govt. in host country ++ It also sends travel authorization(s) to UNDP Office(s).
7.	Govts/UNDP make travel arrangements and cable ETA (Expected Time Arrival) to host.
8.	Implementation of training by fellow(s) in host country.
9.	Fellow(s) return(s) and submit(s) to UNIDO, cc: R. C. his/her report.
10.	R. C. sends report to UNDP Office in the Philippines (as PPR).

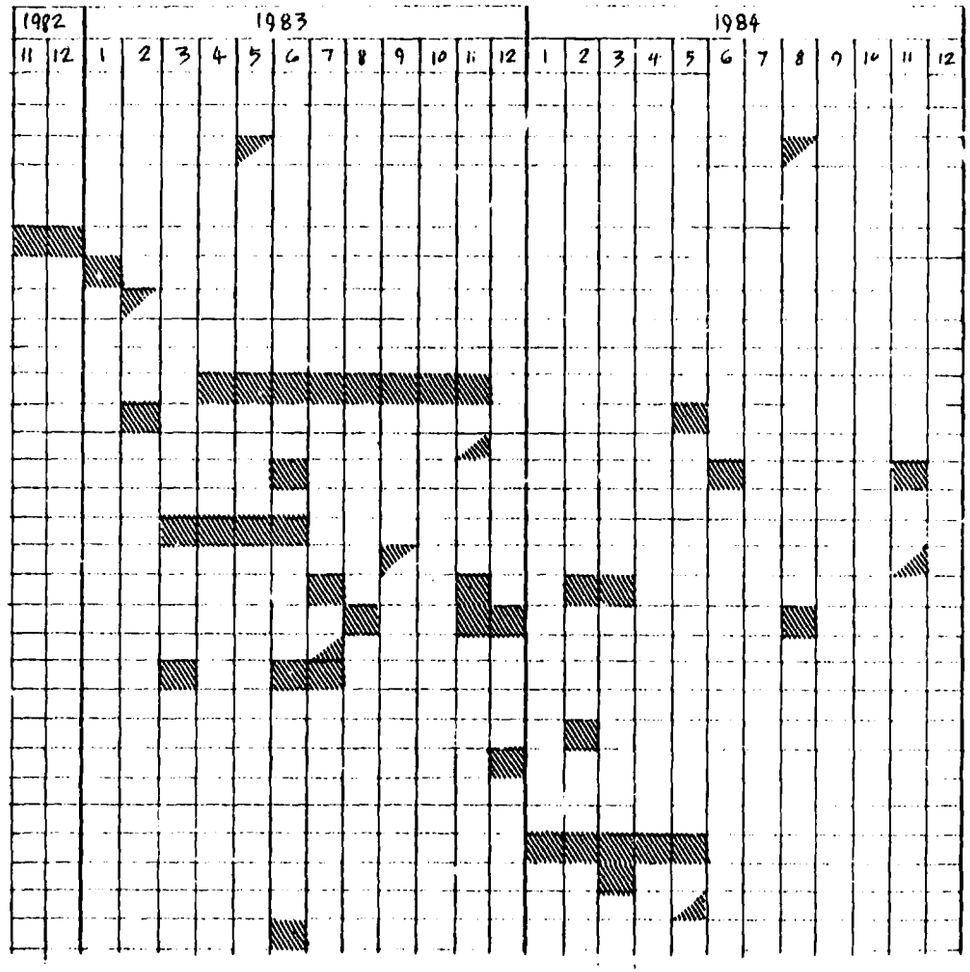
++ NCU host country to ensure that visa is issued.

Steps	Nature of Activity
	III. CONSULTANCY SERVICES
	(Advisory or research consultants)
1.	R.C. asks the NCU in requesting country
1.1	to prepare and send as detailed as possible a description of the services required with all necessary background information to the offering country, cc R.C. It asks NCU both countries to agree (by direct exchanges cc R.C.) on "all" aspects of the consultancy: substantive, financial, etc. within the limits of the prodoc's work plan and budget.
2.	Bilateral contacts of NCU take place. (cc R.C. which ensures that no undue delays occur in this exercise).
3.	Agreement reached bilaterally between NCUS on terms of reference (TOR) incl. qualifications of consultants, work programme and schedule and conditions.
3.1	Both countries send No. 3 to R.C. (Secretariat reverts to NCUS, if points remain to be clarified).
4.	R.C. sends No. 3 or 3.1 to UNIDO.
5.	UNIDO, if satisfied, offers the consultancy contract to the expert from the offering country as per UN and Govt. legal procedures and pays a portion of the fee (flatrate of $2,000 per m/m) plus travel and DSA (Daily subsistance allowance).
6.	The NCU recipient country ensures timely visa issuance.
7.	The expert reports to UNIDO, cc to NCU of the recipient country and the R.C. on the mission.
8.	UNIDO elicits the views of the recipient country and the R.C.
8.1	It decides whether to accept the report and, in the affirmative, pays the balance due to the expert and so informs the R.C.
9.	R.C. sends report with comments, if any, to UNDP RR in the Philippines, as UNDP PRR.

Appendix 7

SEQUENCES OF TECHNICAL OPERATIONS
According to Manning Table 4 (Appendix 4)

Network/Sub-network Activity(SN)	Budget Component
2nd TAC	Group Training(GT)
3rd TAC	GT
Documentation and Information(incl. Data Collection)	Equipment Fellowship-Individual Training (I) Workshop - GT
Manufacturing and Formulation SN	Consultant Fellowship - I Workshop - GT Study Tour- I
Registration Harmonization SN	Consultant Workshop - GT Consultant Fellowship- I Workshop - GT Study Tour- I
Trade & Tariff Agreement SN	Consultant Workshop - GT Study Tour- I
Toxicology SN	Consultant Fellowship- I Workshop - GT Study Tour- I



Appendix 8

REGIONAL REGISTRY OF CONSULTANTS

I. Reference:

TAC Final Report, IX METHODS OF PROJECT implementation paragraph 33 and Appendix 6.

II. Objective:

To set-up and maintain a regional registry of the consultancy talent pool from the participating countries that can be tapped to carry out assignments specified in the work plan or recommended for assignments not covered by network activities.

III. Implementation:

Each national coordinator, alone or in consultation with his/her colleagues, should as soon as possible but no later than 31 December, compile and submit to the Regional Coordinator's Office, Manila, a list of the names and specializations (accompanied by each individuals bio data) of specialists in his/her country available for assignment on network activities.

Additions to or deletions from the registry are expected from time to time as circumstances dictate. Consequently, each NCU should be responsible for keeping the registry of it's talent resources current.

Appendix 9

GENERAL GUIDELINES FOR DATA COLLECTION AND OTHER INPUTS FOR REGIONAL DOCUMENTATION SERVICES

I. Reference:

TAC Final Report, VI ESTABLISHMENT OF SUBNETWORKS paragraph 23-29

II. Objectives:

A. To collect, organize and distribute pesticide production, procurement and consumption data (requisite to industrial planning).

B. To provide information related to the production, marketing and control of pesticide from national sources to the Regional Documentation and Information Services Centre (RDIS) for redistribution.

III. Implementation:

A. Documentation and Information Service

1. Each National Coordinator should as soon as possible preferably not later than 30 days after TAC meeting, assign a National Correspondent responsible for collecting data for RDIS and provide the Regional Coordinator's Office with the National Correspondent's name and address for direct communication.

2. RDIS will design a format for a Quarterly Information Bulletin and circulate it to National Coordinating Units for their comments.

B. Pesticide Surveys and Data Collection

1. The information required for national pesticide development should be collected on a routine, regular, and continuous basis by the National Coordinating Unit of each participating country. These data should be organized and analyzed according to the format agreed upon at the Survey and Data Collection Expert Meeting tentatively scheduled in February 1983 at Bangkok, Thailand and forwarded to RDIS for incorporation into regional documents for distribution back to the participating countries.

2. A person should be assigned this responsibility from the counterpart in kind contribution to network operation's and is expected to attend the February 1983 meeting referred to above.

IV. Categories of Information which RDIS should receive for processing for its data bank that can be redistributed to interested parties are:

Category 1 - Nationally available printed information in the form of bulletins, journals, yearbooks, proceedings of meetings, conferences and symposiums, etc. These should be sent to RDIS by the NCU directly or through the local UNDP/UNIDO office.

Category 2 - Unpublished public but undistributed information that is in the government's correspondence archives or data bank and is consequently, inaccessible to non-users of these facilities. Interdepartmental circulars on changes in pesticide registration procedures or requirements can be cited as an example of the type of information that can get wider distribution through RDIS.

Category 3 - General or global pesticide industrial intelligence which RDIS can seek, digest, and circulate on behalf of the participating countries. The capacity of RDIS to fill this function maybe limited at first but should expand as the unit gains experience and develops its resources. Participating governments who obtain this type of information independently are invited to share it through RDIS facilities.

Category 4 - The continuous survey or collection of data related to the commerce of pesticides on a single product basis that is essential to orderly industrial planning and investment which includes but is not limited to raw material availability, production of active ingredient and finished goods, imports, consumption by crop or sector (public health, municipality and urban pest control, industrial disinfectants, etc.). The expert Meeting on Survey and Data Collection scheduled for February 1983 (referred to above) will be responsible for developing the mechanism to obtain these data and reporting them to RDIS for processing and distribution.

V. Sources of Pesticide, Procurement, Production and Supply Data

These will have to be searched, identified and developed within each NCU and will require constant monitoring and refinement. Each NCU representative at the February 1983 Expert meeting should bring with him/her an up-to-date list of these resources that he/she has compiled for comparison with those

of the other participants so that each may take back a refined working model for exploitation.

Sources for these data by individual chemical product and use should include but are not limited to:

1. Statistics compiled by National Pesticide Producers Associations.
2. Customs Manifests.
3. Pesticide Tenders.
4. Pesticide Distribution Statistics in National Programmes, through Agricultural Cooperatives, etc.
5. Pesticide Procurement and Consumption figures in:

    a. National Pest Control Programmes in Agriculture;
    b. National Pest Control Programmes in Public Health;
    c. Municipal or Urban Pest Control Programmes;
    d. Defense Department/Ministry Pest Control Programmes; and
    e. Other.

6. National Data Banks - these information storage and retrieval systems have been established in a number of countries especially those who have been recepients of bilateral assistance programmes. They should be tapped as a potential primary source of these data.

7. Current and projected data on pesticide supply and demand as assessed by commercial pesticide firms.

Appendix 10

WHO PROPOSALS

The letter from Dr. J. F. Coppleston (Chief, Pesticide Development and Safe Use Division, WHO) which arrived shortly before the session adjourned, was discussed. The above-mentioned letter contained WHO proposals for the establishment of Regional Centres for Pesticide Analysis and Education on Safe Use of Pesticides.

Dr. Copplestone stressed the need for regional pesticide laboratories in the light of problems related to storage of pesticides which directly affect the efficacy, application and toxicity of formulations.

Among other things he cited that the regional pesticide laboratory should be able to carry out:

a) chemical analysis,
b) measurement of physical properties of formulations, and
c) simple rat-based oral and dermal toxicity tests or have access to another laboratory performing these tests.

Further, Dr. Copplestone informed the TAC of the existence of WHO's multilevel course which can be adapted to national needs with the aim of providing relevant education at all levels of contact with pesticides. Participating countries wishing to pursue this should discuss it with their health administration so that arrangement can be made through WHO Regional Offices.

The TAC meeting recommended the following:

1. that the Subnetwork on Quality Control investigate which countries are interested in participating in the project on Regional Pesticide Laboratory and submit such for discussion in the next TAC Meeting.

2. that the Regional Network (RNPAF) will support WHO in its project on safe use of pesticides.