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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

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REGIONAL NETWORK ON SAFE PESTICIDES PRODUCTION AND INFORMATION FOR ASIA AND THE PACIFIC (RENPAP)

DP/RAS/88/031 AND DP/RAS/93/061

Technical report: Tripartite Review Meeting and Project Management Committee Meeting, New Delhi, India from 6-8 October 1993*

Prepared for the Government of the Member States of the Regional Network (Afghanistan, Bangladesh, People's Republic of China, India, Indonesia Islamic Republic of Iran, Myanmar, Malaysia, Nepal, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand and Viet Nam) by the United Nations Industrial Development Organization, acting as Executing Agency for the United Nations Development Programme

Based on the work of Vinay Kohli, Chairman, M.H.J.P. Fernando, Rapporteur and S. Muhammad, Secretary and adopted by the Project Management Committee on the 8th of October 1993

Backstopping Officer: B. Sugavanam, Chemical Industries Branch

United Nations Industrial Development Organization
Vienna

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1. INTRODUCTION

1.1 The first meeting of the Project Management Committee of the Regional Network on Pesticides Production and Information for Asia and the Pacific (RENPAP) RAS/93/061 and the Tripartite Review Meeting of the last phase of RAS/88/031 was held in New Delhi on the 6th, 7th and 8th of October 1993.

1.2 The meeting was convened to review progress of the approved programme through a Tripartite Review Meeting for the last phase of the project (RAS/88/031) with the main aim of improving regional cooperation among the member countries in the field of pesticide production and usage. The PMC of the current phase(RAS/93/061) was aimed at finalising the workplan implementation arrangements and for ensuring integration of activities with the six sub-programmes of the Farmer-Centered Agricultural Resource Management (FARM) programme of which RENPAP is one of the sub-programmes.

1.3 The representatives each from Afghanistan, Bangladesh, People's Republic of China, Indonesia, India, Malaysia, Myanmar, Nepal, Republic of Korea, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam and representatives of the United Nations Organizations including United Nations Development

Organization (UNDP), United Nations Industrial Development Organisation (UNIDO) World Health Organisation (WHO), Food and Agriculture Organization of the United Nation (FAO), Economic and Social Commission for Asia and the Pacific (ESCAP), and Centre de cooperation internationale en recherche agronomic pour le development (CIRAD) took part in the meeting. The list of participants is attached at Annexure I of the report.

1.4 The proceedings of the meetings are summarised below:

2.0 INAUGURAL SESSION AND TRIPARTITE REVIEW MEETING

2.1 The Tripartite Review Meeting was chaired by Mr. K.K. Mathur, Secretary, Ministry of Chemicals and Fertilizers, Government of India.

2.2 Welcoming the delegates, UNIDO staff member traced the development of RENPAP. He said that in 1982, supported by UNDP a project on an experimental basis was conceived to bring together countries of the Asia Region having similar agricultural systems, same or similar crops, problems in protecting crops from devastation by pests and lack of industrial infrastructural for development of pesticide industry. The idea was to have consultations and discussions in order to plan to improve conditions and harmonize various requirements for pesticide use.

It started with nine member countries and mainly due to lack of facilities in the region at that time the network conducted only group meetings and discussions to exchange ideas and experience.

2.2.1 During the second phase i.e. 1985-1988, he stated, that consolidation of various activities and establishment of links with different institutions and the network became more and more a technical oriented network. He said that during the '80s, enormous changes were witnessed in pesticide technology, imposition, of stricter rules and regulations for registration and re-registration of pesticides and awareness to safety problems at the production, distribution and user ends. During the same period, he said, two major accidents one at Bhopal and another one at Basle in Switzerland were witnessed and both directly or indirectly were connected to pesticides. In addition, he said, people became aware of the fact that thousands were getting exposed each year to toxic chemicals both at the production and user ends and to the unacceptable loading of the environment with man-made chemicals, many of them persistent and damaging to fauna and flora.

2.2.2 He stated that the Regional Network also evolved during this, time taking into account the various

changes taking place. The network activities have moved towards emphasizing quality, operational, occupational and environmental safety, bio-botanical pesticides, application technology, eco-toxicology and above all information collection and dissemination within the region. Group trainings and in-depth individual training both within and outside the region were given the prime importance and still will be given in the extended phase. Based on the benefits accrued from the project, the membership of RENPAP grew from strength to strength to 15 member countries and in that, he extended welcome to Nepal as the 15th member. He highlighted that the network covers almost a fifth of earth's surface and about half of the world's population which depends on agriculture for its livelihood.

2.2.3 He said that the PMC meeting is unique in the sense that apart from discussing the activities already carried out, it will discuss the modalities of working within the framework of UNDP's programme approach and also as one of the sub-programmes of the UNDP's newly launched programme Farmer Centered Agricultural Resource Management called FARM. He said that it will be a major challenge for all the participants of the programme in maintaining strong links with six other subprogrammes of the FARM

programme. He felt that with the excellent support from the member countries, especially from the technical coordinator units, it would be possible to implement the activities to achieve the objectives of the FARM programme for the benefit of resource poor farmers of the Asia region. In this connection he stated that RENPAP is well ahead in regional networking with links well-established with Technical Coordinator units in eight countries. He thanked the UNDP, Governments of Denmark and France for financially supporting 4 Technical Coordinator Units and said that using the facilities of these Technical Coordinator Units, many activities are carried out within the region on the basis of Technical Cooperation among Developing Countries(TCDC).

2.2.4 During the last 18 months, he stated, that UNIDO and other Agencies are coordinating various chapters of Agenda 21 as agreed in Riode Jenero meeting and that UNIDO is very much committed to Ecologically Sustainable Industrial Development in the developing countries. In this, UNIDO along with other agencies is putting emphasis on the sound management of toxic chemicals and hazardous wastes. As an out reach of RENPAP project supported by Finland, he informed that UNIDO has developed Integrated International Safety Guidelines for Pesticide Formulation in Developing

Countries and linking this with FAO Code of Conduct on Distribution and Use of Pesticides would cover the whole spectrum of safety on a global basis in pesticide development.

2.3.0 The FAO staff member mentioned that FAO's Plant Protection Policy gives highest priority to Integrated Pest Management (IPM) implementation. He mentioned that concerning others such as application equipment and techniques, toxic waste management, safe packaging and pesticide disposal, FAO has a number of activities on hand and that he was convinced that FAO would contribute to the RENPAP programme for the benefit of the member countries. He mentioned that when RENPAP workplan would be finalised it would be ensured that there will be no duplication of efforts and that there would be a concerted and harmonised approach. He said that the RENPAP countries have to cope with more assignment and responsibilities mainly due to the fact that FAO/Japanese Govt. cooperation programme on the support for the implementation of the International Code of Conduct on the Distribution and Use of pesticides terminated on May 93. He looked forward to a very active meeting where all the participants and agencies would coordinate in preparing the workplan, working towards a common goal of improving the

pesticide management, using pesticides where necessary in a safe, efficient and environmentally sound manner within the larger context of plant protection under IPM.

2.4.0 The WHO staff member stated that the WHO has been dealing with the safety aspects of pesticides since its foundation and that the future international concern about the dangers of chemicals for human health and the environment led to the establishment in 1980 of the international programme on chemical safety (IPCS) which is a joint venture of the World Health Organisation (WHO), the United Nations Environment Programme (UNEP) and the International Labour Organisation (ILO).

2.4.1 Briefing about the IPCS, he stated, that it has developed very close and efficient working relations with several other international, intergovernmental and non-governmental organizations, associations and professional bodies which have important activities in the field of chemical safety. He said that FAO International Code of Conduct on the Distribution and Use of Pesticides and the UNEP London Guidelines are the two important documents widely accepted and used.

2.4.2 The United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in June

1992, he mentioned, recognized the need to ensure the environmentally sound management of toxic chemicals, within the principles of sustainable development and improvement of quality of life for mankind.

2.4.3 In this context he said that significant strengthening of both national and international efforts was called for to achieve an environmentally-sound management of chemicals. Six programme areas were identified for intensive international work and improved coordination of international activities, namely:

i) expanding and accelerating the international assessment of chemical risks;

ii) harmonization of classification and labelling of chemicals;

iii) information exchange on toxic chemicals and chemical risks;

iv) establishment of risk reduction programmes;

v) strengthening of national capabilities and capacities for management of chemicals; and,

vi) prevention of illegal international traffic in toxic and dangerous products.

The Conference, he mentioned, considered that collaboration on chemical safety between UNEP, ILO and WHO in the IPCS should be the nucleus for international cooperation on environmentally should management of chemicals.

2.5.0 The representative of CIRAD briefed the meeting about its activities and involvements in the field of crop protection. He stated that

1. the Center for International Cooperation in Agriculture Research for Development, CIRAD is a French state-owned body which was created in 1984.

2. it is a scientific and technical organisation with a mandate to contribute to rural development in the tropics and subtropic through research, experimentation, training and scientific and technical information in the fields of agronomy, zootechnics, veterinary medicine, forestry and food technology.

3. CIRAD operates from its own research centres and experimental stations in mainland France and French overseas territories, but also in more than 45 countries across all five continents, in conjunction with national research and development structures, international centres (CHIAR) or in support of public or private sector projects.

5. of a total staff of 1,800, 900 senior scientific and technical staff, including 400 stationed overseas, are available for work on research and development projects.

6. its activities are based on several major lines of research.

2.5.1 With regard to Crop protection, he said, that top priority has been given to integrated pest management, which reduces losses caused by pests to economically acceptable levels, hence reducing pesticide use, and the creation of parasite-resistant transgenic plants.

In the field of pesticides, he said, that the major objective of CIRAD is to promote any action with a view to improve the safe use of pesticides.

He mentioned that RENPAP can play an important role in the collection of scientific data on the use of pesticides in the region in view to arrive at a consensus with the very active ecologist group in Asia like PAN based in Malaysia.

2.6.0 The representative of ESCAP/ARSAP stated that there are growing concerns and pressure from both the general public and governments to minimise the environmental impact of pesticides. Environmental

impact evaluation requires understanding of the toxicity, degradability and mobility of chemicals. However, this information, if available, is not readily accessible to decision-makers and users in the developing countries.

2.6.1 He said that it is indispensable that decision-makers and users have access to and good knowledge of information regarding the use of pesticides and their negative effects on human and animal health, and the environment. Developing countries, which have been using pesticides much longer than the developing countries, have collected a substantial amount of information through scientific research and practical experiences on pesticide use and effects which is being made available through a number of European or North American official and private computerized databases. What is missing so far, he said, is an adaptation of these data to the climatic and environmental conditions in Asia. To close this gap, he said, is the purpose of the project "Database on Pesticides and the Environment".

2.6.2 He explained that the "Database on Pesticides and the Environment" is currently implemented by the United Nations Economic and Social Commission for Asia and the Pacific (UN/ESCAP) in collaboration with CIRAD, France with funds provided by the Council of European

Communities (CEC). The aim of the project, he said, is to develop a computerised database programme which links technical information on agro-pesticides, as collected in the ARSAP/CIRAD Regional Agro-pesticides Index, with data on the effects of these products on public and animal health, and the environment. In its present phase, collection of data on pests, crops, and pesticide use recommendations and effects concentrates on the ASIAN countries including Thailand, Philippines, Brunei, Indonesia and Singapore with Malaysia yet undecided about its participation.

2.6.3 This database, he said, when fully established, will allow rapid access to comprehensive information on pesticides used in the region, their active ingredients, their major and animal health, and the environment. This information, he said, is expected to be useful for pesticide regulatory authorities, poison control centres for humans and animals and environmental protection agencies.

2.6.4 He said that contacts with the Regional Network on Pesticides for Asia and the Pacific (RENPAP) have continued with the aim to integrate ARSAP technical database (products available and their effects on the environment), with the more economic oriented database maintained by RENPAP.

2.6.5 He added that work has been progressing for further development of the 2nd edition of the Pacific volume of the Regional Agro-Pesticide Index carried out jointly with the South Pacific Commission (SPC). An associate expert from France, he said, has been assigned to the Plant Protection Unit since February 1992, and will be completing the edition of the Regional Agro-pesticide Index by the end of this year. In cooperation with SPC, he said, the project proposals in the field of data collection and dissemination in the Pacific have been prepared.

2.6.6 He informed the meeting that pesticide safety publication programme coordinated by ARSAP has continued to promote the translation of the illustrated pesticide safety guide into local languages. This guide developed for village level distribution is printed in Bislama, the language of Vanuatu (translation into other Pacific languages are under way).

2.7.0 Mr. Bayani A. Augurrie, Resident Representative a.i. UNDP informed the meeting that the RENPAP is considered as one of the major success of the UN systems operational activities aimed at development of this region. This is so, he said, because this project simultaneously addresses a number of thematic priorities set up by the UNDP Governing Council

including environment protection, natural resources management, management development, technology for development and technical cooperation among developing countries. He expressed UNDP's appreciation of the setting up of eight Technical Coordinator Units supported by the member countries for the effective implementation of the various activities of the project particularly with their significant cash and kind assistance. He also complemented the member governments sponsoring the Technical Coordinator Units for placing at the disposal of RENPAP the available infrastructural facilities and expertise which has helped in rendering training and specialised services to the member countries of the network. The other highlight, he said, is the success of the project in attracting donor country funding which has resulted in strengthening and upgradation of some of the Technical Coordinator Units in the member countries to full-fledged country programmes. In this context he mentioned about the Eco-toxicology country programme in Pakistan set up with the financial support from DANIDA and the Govt. of Pakistan. He also complemented the achievement of the project for developing and assisting in the planning and implementation of a country Programme in China with UNDP contribution of US $ 4.5 million and an

equivalent contribution from the Government. He was happy to note similar proposals for assistance being offered by donor countries for strengthening the Technical Coordinator Units in Thailand and Indonesia. The spin-off effects of RENPAP project, he said, is an excellent example of a regional project fostering in the growth of country projects not only for the benefit of the member country only but also to cater to the specialised requirements of all the member countries of the region. He said, it was noteworthy that these countries have been leaning heavily on the networking of the project for effective dissemination and exchange of technologies and services being developed in the member countries.

2.7.1 He expressed UNDP's deep satisfaction over the member governments demonstrated support for strengthening the project activities particularly in view of the significant benefits they are deriving in the important spheres of environment protection, ensuring the health and safety of industrial workers, introduction of environmentally friendly pesticide formulations, clean technologies and the naturally occurring bio-pesticides and botanical pesticides. He draw the attention of the meeting of the UNDP's launching of the regional Farmer-Centered Agricultural Resource Management (FARM) programme on

the 24 Sept. 1993 and stated that the regional network of pesticide as a sub-programme of this programme would be the first to organise the Project Management Committee Meeting among the 7 sub-programme, therefore, carried a special significance. He extended welcome to Nepal for joining the programme and assured that it would receive support in full measures.

2.8.0 Mr. Mathur, Chairman of the meeting, initiating the Tripartite Review of the RENPAP called on the Regional Coordinator to present the Project Performance Evaluation Report (PPER) and the Terminal Report of RAS/88/031. The Regional Coordinator referred to the PPER document duly reviewed by the UNDP and the UNIDO headquarters and deliberated at length on the 13 outputs of the project one by one. He also drew the attention of the meeting of the favourable review comments made by the authorities in the UNDP and the UNIDO particularly about full achievement of the objectives within the time frame and with the resources made available to the project. Thereafter, the Chairman of the meeting called for comments from the delegates of the network member countries. The 14 delegates of the network member countries individually presented their appraisal of the RENPAP activities and endorsed the PPER. The

members particularly felt that this project has succeeded in making significant impact and all the member countries have greatly benefitted in this important area vital for increasing agricultural production and ensuring environment protection. This project has also succeeded in bringing the member countries closer together to solve the various problems and in sharing experiences of each other countries for mutual benefits. The increase in the membership from 8 to 15 during the last 5 years, the members felt, is a measure of degree of effectiveness, therefore, success of this project. This project, the member countries felt, has also succeeded in breaking the political barriers for ensuring equal participation and sharing benefits from the various activities and outputs. The PPER and the Terminal Report was thereafter unanimously endorsed for acceptance.

3.0 **ADOPTION OF THE AGENDA**

3.1 The Agenda as adopted, is placed at Annexure II.

4.0 **DESIGNATION OF OFFICERS**

4.1 Mr. Vinay Kohli from India was elected Chairperson, Mr. M H J P Fernando from Sri Lanka as Rapporteur and Ms. S Muhammad was elected as Secretary of the meeting.

5.0 STATEMENTS OF THE NATIONAL COORDINATORS

The Country reports presented by the National Coordinators/ designated officials are summarized below:

5.1 AFGHANISTAN

5.1.1 The country paper was presented by Mr. G S Haiderzada. He stated that in Afghanistan about 85% of the population is engaged in agriculture, major crops being wheat, rice, maize, cotton fruits and vegetables. He informed that Afghanistan is neither a pesticide manufacturer nor formulator and that they import formulated material for use in pest control; the farmers use pesticides at very low levels.

5.1.2 He further stated that Afghanistan had been participating in all the activities of RENPAP but due to political disturbance in Afghanistan, they could not participate in the last three group meetings i.e.

i) Workshop on Bio-Botanical Development in Thailand.

ii) Workshop on Pesticides Application Technology in Malaysia.

iii) PMC meeting in April, 1992 in New Delhi.

5.1.3 Regarding individual training, he said, two candidates from Afghanistan have undergone training -

one in the field of instrumentation analysis at Pesticides Development Centre, New Delhi and other on Packaging, Handling and Storage of Pesticides at Institute of Packaging, Bombay, India.

5 1 4 He also mentioned that they have obtained the consultancy services of Indian experts in the field of Handling/ packaging and that the consultancy services was quite beneficial and useful to the country.

5.2 **BANGLADESH**

5.2.1 The country paper for Bangladesh was presented by National Coordinator, Mr. M A Malek. He said that Bangladesh has been participating in all RENPAP activities.

5.2.2 Regarding the progress of implementation of project activities, Mr. Malek said that they have participated in two group activities and one individual training:

i) Workshop on Impurities in Technical Grade Material in Republic of Korea.

ii) Workshop on Pesticide Application Technology in Malaysia.

5.2.3 Regarding individual training, he mentioned that one candidate obtained training in the field of biological screening in Pakistan. He mentioned that follow up steps have been taken to utilise the training for the benefit of the organisation.

5.2.4 Regarding consultancy, Bangladesh received consultancy services of experts in the field of:

a) Packaging, Handling and Storage of pesticides from India.

b) Pesticides Environment Toxicology from Czechoslovakia in 1992.

5.2.5 He stated that a candidate participated in the expert group meeting to Develop Integrated International Safety Guidelines for Pesticides, Formulation in Developing Countries in Brussels, Belgium.

5.2.6 He mentioned that they are facing problems in analysing some pesticides formulations and monitoring residues due to lack of equipments and training in the field. He also stated that the registration and use of pesticides are governed by the Pesticides Ordinance, 1971 and its rules 1985.

Mr. Malek showed interest to use bio-pesticides like *Bacillus thuringiensis* for pest control and for this he called for assistance. He explained that his Govt.

has started training their staff, farmers and dealers in safe use of pesticides and made good achievements in training 23000 farmers, extension officers and NGOs under the joint ventures on the Deptt. of Agri. Extension, Bangladesh and FAO Inter-country Rice IPM project. However, he felt that his country needs extension of IPM Technologies.

5.3 **PEOPLE'S REPUBLIC OF CHINA**

5.3.1 The report was presented by Mr. Zhang Wenjun (ICAMA). Reviewing the progress of the project activities, he mentioned that China has taken part in all the 5 activities organised by the Project and that China has greatly benefitted from the exchange of experience and technology among the member countries which has helped his country in strengthening the regulatory work of pesticides usage and reaching the international standards.

5.3.2 Regarding pesticides control, he mentioned that China implements the registration system to control pesticides. He further informed that the pesticide registration system is divided into three stages - field test, temporary registration and full registration. He mentioned that China has banned the use of organo-chlorines, namely, aldrin, dieldrin, DDT, dinoseb and dinoseb salts, fluoroacetamide, HCH,

Chlordane, chlordimefom, cyhexation, EDB, DBCP, Heptachlor, mercury compounds, coumaphos and iminoctadine triacetate. Regarding post registration management, he informed that there are 25 provincial institutes for the control of Agrochemicals to conduct supervision on pesticide registration and on quality control in the province.

5.3.3 He reiterated that China will, as always, actively participate and support activities to be organised by the project. Further, he asserted that China wishes to shoulder more responsibilities in the activities of RENPAC and promote exchange of better technologies and good experiences among the member countries.

5.4 **INDONESIA**

5.4.1 The Country report of Indonesia was presented by the designated officer, Mr. Agus Wahudi. Reviewing the participation in the group activities of the project so far, he said that the industrial training on Effluent Control and Waste Disposal was attended by their nominee in the selected agencies of the USA and UK. The programme was well designed to meet the objective of providing the trainee with an overview of how pesticides plant operations could be designed to control effluent and manage waste disposal. He said that two candidates underwent training on

selection of carriers/adjuvants in pesticides formulation at IPFT, New Delhi in October, 1992. This programme, he affirmed, had provided the candidates with the knowledge and skill which would be useful for their day-to-day work. One of their nominees, he said, underwent training on Pesticides Regulatory Control at Fertilizer and Pesticides Authority of the Philippines in August, 1992, this programme helped the candidate to acquire perspective on policy determination on regulatory control measures needed for efficient functioning of the pesticide industry.

5.4.2 With regard to the consultancy, he mentioned that they had availed of the services of a Consultant on Pesticide Residue Analysis with reference to metabolite and degradation Technology in 1992. His contributions as a consultant and lectures were well received and appropriate actions have been taken.

5.4.3 He said that Indonesia participated in two group training programmes viz. Workshop on Impurities in Technical Grade Pesticides Materials in Republic of Korea in October, 1992 and Workshop on Application Technology in Malaysia in September, 1993.

5.4.4 He said that Indonesia has prepared a roster of Indonesian experts having vast experience and specialisation in various fields, namely, pesticides

residue analysis, environmental aspects relating to the production and use of pesticides, bio-environmental toxicology, and environmental health/ occupational health, to provide consultancy services to the participating countries of RENPAP region seeking such services under the TCDC concept.

5.4.5 Summarising his report, he said that the RENPAP activities were well planned and designed for safe and environmental friendly pesticides production and use in order to maintain the sustainable environment through introduction of better technology and good handling, ensuring less residue of pesticides and adopting correct standardization and methods of analysis and in conclusion, he proposed for the continuation of RENPAP programme further.

5.4.6 He proposed the following activities to be included in the workplan:

1. Consultancy required

a) Plant design and effluent treatment system related to national and international standard of effluent.

b) Effluent control and waste disposal.

c) Destruction technique for unusable/degraded pesticide at village level.

d) Assistance on collaboration of existing laboratory for preparing adopted international standard.

2. Training required

a) Botanical Pesticide Formulation Technology preferred country Thailand.

b) Bioassay of Pesticide Formulation - preferred country Thailand/Korea.

c) Impurities Analysis - preferred country Korea.

3. Study Tour

a) Pesticide Waste Management/pesticide hazard evaluation standard procedure - preferred country USA, UK, Korea, India.

b) Import-export regulatory system - preferred country Philippine.

4. Group Training to be provided by Indonesia

Hosting workshop on effluent control and waste management.

5. Continuing data collection programme.

5.4.7 The PMC very much appreciated the activities undertaken by the Technical Coordinating Unit in Indonesia and the offer for continued hosting of the

Technical Coordinating Unit and organising workshops and training programmes in the very important area of effluent control and waste management. It was also agreed to include the various proposals made in the workplan of the current phase of this project.

5.5 **MALAYSIA**

5.5.1 The country paper from Malaysia was presented by the National Coordinator, Ms. Shamsiah Muhammad. She stated that Malaysia has implemented and participated in all the activities of RENPAP since joining in 1992. Reviewing the participation in the group and individual activities of the project so far, she said that a candidate has undergone fellowship training on Registration requirement and Evaluation of Data on Environment Fate of pesticides in California and another candidate underwent training on Pesticides Application Technology in UK. Both courses have been very beneficial and the experience gained would be of great assistance to the regulatory authority in her country in making better decision in the registration of pesticides.

5.5.2 She said that Malaysia participated in the Workshop on Impurities in Technical Grade Materials in Rep of Korea from 12-17 October, 1992 and found the workshop to be very useful and purposeful. She mentioned that

member countries should be updated through publication or participation in follow up workshop on the latest developments in this field.

5.5.3 She highlighted that Malaysia successfully hosted a 6-day Workshop on Pesticides Application Technology from 20-25 September, 1993 and a total of 29 participants from 13 member countries took part in the workshop. She said that two of the recommendations adopted by the delegates are that a Centre of Excellence on Pesticides Application Technology be set up in Malaysia and that the industry should play a more important role in promoting safe and effective us of pesticides.

5.5.4 Regarding consultancy services she said, that they received a consultancy on Pesticides Application Technology for 3 weeks. His services were utilised for the Workshop on Pesticides Application Technology held in September, 1993. The consultant was also required to study the possibilities of establishing a Centre of Excellence in Pesticides Application Technology in Malaysia.

5.5.5 Regarding Pesticides Data collection, she said, that the collection and compilation of economic data of pesticides has so far been submitted on 32 selected active ingredients for 1989, 1990 and 1991 to the

Coordinator of this sub-project. She said that data on pesticide active ingredient, pesticide manufacturer /trader, pesticide commercial and technical products registered in Malaysia and list of pests, diseases and weeds found in Malaysia has been sent to Regional Data Collection Centre in New Delhi.

5.5.6 Regarding training of outside candidate sponsored by UNIDO/ RENPAP, she said, that a candidate from Sri Lanka is undergoing training in the field of Post Registration activities of Pesticides in Malaysia. The candidate is being exposed to the process of pesticide registration and other post registration activities carried out in the country.

5.5.7 Regarding the continuation of TCU for Pesticide Application Technology, she said that Malaysia would continue to organise training courses/workshop on Pesticides Application Technology for the RENPAP member countries. She also mentioned that Malaysia would be able to offer a one month fellowship training for a chemist from the member countries in Pesticides Formulation Analysis in 1994.

5.5.8 Regarding fellowship training of candidates from Malaysia, she said that Malaysia wishes to sponsor candidates under the UNIDO terms for training during 1994 on Registration of Pesticides, Pest Control

Operations and worker's exposure studies including methods assessment criteria/procedure, biological and air sampling and analysis.

5.5.9 The PMC very much appreciated the participation of Malaysia in all the activities organised since their joining the network programme. The offer to continue hosting of the Technical Coordinating Unit for pesticide application technology was well received as it would help in organising workshops and training programmes in this very important area for ensuring safety of the farmers. The training of the Sri Lankan nominee being provided by the Govt. of Malaysia was acknowledged by the PMC.

5.6 **MYANMAR**

5.6.1 The country paper was presented by Mr. U Maung Maung. Reviewing the progress of implementation of project activities, Mr. Maung mentioned that Myanmar has participated in all group activities which includes:

a) Workshop on Industrial Safety and Effluent Control in Indonesia.

b) Workshop on Industrial Hygiene in Philippines.

c) Workshop on Development of Bio-Botanical Pesticides, in Thailand.

d) Workshop on Impurities in Technical Grade Pesticides in Republic of Korea.

e) Workshop on Pesticide Application Technology in Malaysia.

5.6.2 Mr. Maung stated that Myanmar has nominated Mr. U Saw Mular, Head of Lab., Hwawbi Pesticide Formulation Plant as the member of RENPAC.

5.6.3 Mr. Maung mentioned that they have obtained consultancy services of two consultants, Dr. P Crozier and Mr. Keith Johnson from UK.

5.6.4 Regarding individual training, he mentioned that 2 man months have been allotted for training of their candidates. However, no training could be realised during the period as Myanmar could not participate in the last PMC meeting held in April, 1992 when the workplan of the project activities was updated and finalised.

5.6.5 Mr. Maung supported continuation of the project activities and requested for the following future activities to be carried out under this project.

I. <u>Consultancy</u>

a) Disposal of discarded pesticides.

b) Production Technology.

II. Training

a) Use of Protective Equipment and Safety Equipment adopted to the region.

b) User and environment friendly pesticides formulation.

5.6.6 The PMC assured all support to Myanmar for ensuring safe production and usage of pesticides.

5.7 **NEPAL**

5.7.1 The country paper for Nepal was presented by Mr. R S L Karna. He stated that more than 90% people in his country depend on agriculture and more than 60% income is received for it. To increase crop productivity, the introduction of germplasms and high yielding varieties has been successful but the introduction of such materials have met with frequent epidemics from insects and diseases. He mentioned that for controlling these pests, pesticides are imported from India, Japan, Germany, etc. He stated that Govt. of Nepal has recently established a Division of Plant Protection and Industrial Entomology to look after the plant protection work, plant quarantine, sericulture and agriculture.

5.7.2 Regarding import of pesticides, he stated that the import of pesticides, its registration, quality

control is governed by Pesticides Board constituted by the Division of Plant Protection & Quarantine Pesticides Act is passed in 1991 but enforcement of the Pesticides Act and Regulation is awaited. Pesticides are recommended for import only on the basis of 3 years field research. Hazardous pesticides which are detrimental to health and the environment, are not imported. Some of the pesticides are restricted or prohibited for use in the country and their import is banned. DDT and flouroacetamide are not used in agriculture.

5.7.3 He also mentioned that Nepal is a member of International Plant Protection Commission for Asia and the Pacific. He mentioned that Nepal participated in the launching of FARM programme held in New Delhi from 24-25 September, 1993 and has since joined the RENPAP.

5.7.4 He suggested that Nepal needs consultancy services and also wishes to sponsor candidates for fellowship training and study tour needed for strengthening the plant protection programme and data collection programme in Nepal.

5.7.5 Although Nepal had joined late, PMC agreed to give support in full measure and accommodate all requestes

pertaining to the safe handling and use of pesticides.

5.8 PAKISTAN

5.8.1 The country paper was presented by the National Coordinator, Dr.Umar Khan Baloch. Dr. Baloch said that Pakistan embarked upon the use of Synthetic Pesticides (e.g. DDT) in 1954 for the first time to fight locust and rice pest problems. The Agriculture Pesticide Ordinance and Agriculture Pesticide Rules were introduced in 1971 and 1973 respectively to control pesticide import, manufacture, formulation, distribution and use. The registration of pesticides is guided by Agricultural Pesticides Technical Advisory Committee (APTA).

5.8.2 The import and distribution of pesticides was transferred to the private sector which previously used to be controlled by the public sector. This change resulted in almost ten times increase in the use of pesticides particularly on cotton which almost consumes about 70% of pesticides marketed.

5.8.3 Pakistan, he said, actively participated in all the activities of RENPAP and provided needed services and facilities. Pakistan's offer, in the very first PMC meeting held in Manila in 1982, to host Eco-Toxicology Sub-Network (TCU) became a reality in 1993

with the establishment of "Eco Toxicology Research Centre" at Pakistan Agriculture Research Center at Islamabad. This Center is being established with the assistance from Danish Government through UNIDO. Five scientists have or are under training in the relevant disciplines of Eco-toxicology. The Center will hold "Workshop on Eco-toxicology" in March, 1994, by this time Pakistan will be willing to provide needed technical assistance and training to the regional countries.

5.8.4 He mentioned that Pakistan is willing to offer to host other events including PMC meeting to the RENPAP. FAO, ESCAP and WHO on pesticide related activities particularly concerning Eco-toxicology.

5.8.5 Pakistan in order to encourage reduced, safe and rationale use of pesticides has implemented integrated pest management (IPM) programmes for major crops viz. cotton, rice, corn, fruits and vegetables in all the provinces. The success of these programmes, which is subject to several practical implications, is anxiously awaited.

5.8.6 The PMC was very pleased to note the seting up of the Eco-toxicology Research Centre with DANIDA assistance and felt that it is a good example of a Technical Coordinator Unit attracting donor Govt. support for

getting upgraded to a country programme. The PMC appreciated the efforts made by Dr. Baloch in setting up this Centre and offering workshop and training facilities to the RENPAP. Pakistan's support in the various activities of the RENPAP was acknowledged by the members.

5.9 **PHILIPPINES**

5.9.1 The Country paper was presented by the National Coordinator, Mr.Francisco C.Cornejo. He expressed his difficulties to be away from his country at this juncture when Govt. of Philippines is planning to ban 5 very important pesticides required in Rice in the Philippines. He mentioned that the Fertilizer and Pesticide Authority regulates the importation formulation, distribution and use of fertilizers and pesticides. He informed, FPA was created in 1977 to address the need to assume farming sector of adequate supply of FARM inputs-fertilizer and pesticides at reasonable prices. Food then was the basic consideration and concerns on health and the environment came in much later. He mentioned that Philippines have registration acts and rules for both fertilizers and pesticides. A product receives registration and label approval after review of

- Toxicology Data.

- Efficacy Data.

- Fate in the Environment.

5.9.2 He said Philippines is a basic importer of Pesticides which are normally brought in, formulated and distributed by the multi-national manufacturers. The rigid standards that these companies follow in support of local policies are set by FPA to ensure protection of workers from exposure as well as proper management of toxic waste to protect the institutional users of pesticides. He mentioned that multi- national companies grow crops for export such as bannana, pine apple etc., growers are strictly following occupational health safety measures with the rigid training conducted regularly for their field workers. He said, about 25% of the total pesticides mainly herbicides, fungicides and nematicides used in the country go to Export Crops and bulk of pesticides used are for rice and vegetables and are close to 70% insecticides. He mentioned about the misuse of pesticides in the region vis-a-vis its effect on the health of the Asian Farmers plus the damage this misuse is doing to the environment in the Philippines. Three million farmers, he said, are cultivating the 3 million hectares of rice and those farmers have been taught the "Wrong Way" of using pesticides.

5.9.3 He mentioned that Integrated Pest Management(IPM) tells them the right way. But they need massive education and training to correct these errors which have been practised for generation. He said that Philippines have banned 5 important pesticides for paddy crops. In this context he also mentioned that while it may be true that the country is depriving the poor farmers from these inexpensive and versatile insecticides, it has the responsibility to protect their health from the imminent hazards of these pesticides and also protection of the environment. He further mentioned that more pesticides are being brought in and used in their current thrusts in support of their Govt. IPM programme which calls for

a) intensive education campaign to reduce pesticide misuse;

b) proper pesticides disposal and recycling of used containers.

c) establishment of local maximum residue level.

d) rapid Registration of less toxic of environment friendly pesticides.

5.9.4 The PMC deeply appreciated the role played by Philippines in organising the TCU on occupational safety and industrial hygiene and organising a very

effective workshop on the subject. PMC accepted the offer of Philippines to organise further programme on the subject which was very well received. The PMC also acknowledged the training provided by the FPA to the nominees of the member countries thereby strengthening the TCDC concept in the network project.

5.10 REPUBLIC OF KOREA

5.10.1 The country paper for the Republic of Korea was presented by the designated officer, Mr. Young - Koo Kim. Reviewing the progress of implementation of project activities, Mr. Kim mentioned that his country has participated in all the project activities based on the workplan formalised in the PMC meetings. Regarding individual training, a candidate from Republic of Korea attended one month training course on "R&D on Controlled Release formulation" at the University of New Castle, UK. The candidate concentrated on development of photo degradation polyethylene sheet formulation incorporated with herbicides for cash crops in Republic of Korea. Formulation studies for viable antagonistic microbes was also planned to put to practical use of microbial pesticides using alienate natural nutrient matrix. He said that another candidate underwent training on microbial pesticide

development in Japan; the candidate took the promising isolated microbes with him to Japan and identified the structure of active compound from the culture broth during his one month stay in Japan. He mentioned that the experiences by these candidates have been beneficial and purposeful and are being fully utilised in their day to day work.

5.10.2 Regarding consultancy, he stated that two weeks consultancy on Pesticides Specification has been obtained. The consultancy services were obtained in course of the Workshop on Impurities in Technical Material held in Republic of Korea in October, 1992. The Consultant focussed on new trends in pesticides formulation and effect of impurities on the cost of synthesis formulation, registration and quality assurance. He felt that his country and the delegates have benefitted a lot from this consultancy.

5.10.3 He stated that Republic of Korea hosted a Workshop on Impurities in Technical Grade Pesticides Materials at Agricultural Chemicals Research Institute from 12th to 17th October, 1992. The Workshop was fruitfully accomplished in which 14 delegates from 12 countries participated. An intensive laboratory work was undertaken to separate, identify and quantify the impurities in Chloro Thalonil technical by means of instrumental analysis: GC/MS, FT-NMR or GE/ECD. He

said that a one day field trip to Toxicology Research Centre and Hannong Central Research Institute gave the delegates the chance to get information on pesticides safety assessment scheme being implemented in his country.

5.10.4 Regarding Technical Coordinating Unit for impurities in Technical and Formulation, he mentioned that even though the specification of the a.i., technical and formulation were provided to the pesticides boards, the specification becomes useless unless confirmation techniques are known to the relevant authorities or formulators. Furthermore, those parameters are in general produced by related manufacturers and that one more consultancy is required for establishing the parameters from one of the leading world famous experts to operate the Technical Coordinating Unit effectively in the RENPAP region.

5.10.5 He suggested the future activities to be taken up during the continuation of the project.

5 10 5 1 Required consultancy

a. R&D formulation technology for jumbo, soluble pack and controlled release formulations.

b. Evaluation method and scheme on benefit/risk assessment.

c. Computer-predicted model development of weed emergence for rational use of herbicide.

5 10 5 2 Fellowship and training

a. Formulation technique of viable microbes for microbial pesticide.

b. Biological disposal method of pesticides wastes and residues in the environment.

c. Prediction methodology of weed flora in cropping area.

5 10 5 3 Study Tour/Training programme

a. Scientific visit on pesticide formulation in Japan.

b. In-house training at US-EPA on benefit/risk assessment of pesticide.

Proposed budget contribution

The following budgetory contribution was proposed by Dr. Kim.

Items	Proposed (US$).
Personnel (Counterpart)	62,800
Facilities (Building)	86,700
Equipment (GC/MS, NMR, FT-IR, etc.)	485,000
Workshop (Impurities)	25,000
Miscellaneous (Expendables)	10,000
Total	669,500

5 10 7 The PMC noted with great satisfaction the proposed budgetory contribution of US $ 669,500 by the Republic of Korea which would greatly benefit the member countries in obtaining training in the important area of impurities in technical grade material for which the Technical Coordinator Unit is fully equipped and functional.

5.11 **SRI LANKA**

5.11.1 The country paper was presented by the National Coordinator, Mr. M H J P Fernando. He stated that Sri Lanka has participated in all the group activities. Regarding individual training, a candidate has undergone training in Post Registration of Pesticides at the Malaysian Pesticides Control Branch, Malaysia and that this has been a good example of TCDC.

5.11.2 He highlighted the activities in the field of pesticides in Sri Lanka. Like most of the other countries in the project. He said Sri Lanka has a problem with the disposal of outdated pesticides.

5.11.3 He commented that the sub-programme identified under the main "FARM" fits in well with the ongoing programme in the country and extended full support for its implementation within the 8 core group countries in which Sri Lanka is included.

5.12 **THAILAND**

5.12.1 The country paper was presented by Dr.Sathorn Sirisingh. He mentioned that Thailand participated in all the activities i.e. individual and group training programmes of the project as per the workplan finalised by the Project Management Committee meeting held from time to time.

5.12.2 He said that Ms. Chirapoan of Sri Plakich and Ms. Nunchana Neutrakod participated in the Workshop on Impurities in Technical Grade Pesticides Materials held in South Korea in October, 1992.

5.12.3 He said a candidate from Thailand participated in the Workshop on Pesticides Application Technology organsied by TCU in Malaysia from 20-25 Sept. 1993.

5.12.4 He mentioned that the Govt. of Thailand conducted two training courses for candidates from Vietnam sponsored by UNIDO in the microbial pesticides development for virus and fungus (bacteria) in July, 1993.

5.12.5 He reported the progress of the pesticides data collection work in Thailand. He mentioned that Mrs.C.Ratanasatien visited three countries, namely, Malaysia, Indonesia and Philippines for one week in each country to assist the counterparts in collection of Economic data and other information pertaining to Data Collection System in July/August, 1992 and also assisted in installing computer software for pesticides information collection and entering the information on the computer.

5.12.6 The PMC complemented the Govt. of Thailand for providing training to the selected candidates from Vietnam in the area of microbial pesticide development. The Technical Coordinator Unit of bio-botanical pesticide has very successfully conducted workshops and the PMC complemented the excellent support facilities provided to the network project in this regard by the Govt. of Thailand.

5.13 VIETNAM

5.13.1 The Country paper for Vietnam was presented by the National Coordinator, Prof. HA Minh Trung. He stated that they have participated in all the group activities since their joining the RENPAP. He said that regarding individual training, one candidate from Vietnam has undergone training in the field of Microbial pesticide Development for virus and another candidate underwent training in Microbial pesticides Development for Fungus (Bacteria) in Thailand. The experience gained by the candidate has greatly benefitted them to update their knowledge and to improve their research work in Vietnam.

5.13.2 He said that a training programme on Residue Analysis for Vietnam has been arranged in Thailand during November, 1993.

5.13.3 He said that a candidate from Vietnam Ms. Nghiem Le Dung has attended workshop on Impurities in Technical Grade Pesticides Material held in October, 1992 in Republic of Korea.

5.13.4 He also mentioned that a candidate from Vietnam has participated in the Workshop on Pesticides Application Technology in Malaysia during September, 1993.

5.13.5 Mr. Trung informed that in 1993 a Regulation for pesticides registration, a list of pesticides permitted to use, pesticides restricted to use and pesticides banned in Vietnam have been stipulated by MAFI Plant Protection and Quarantine and that a state law has been approved by National Assembly.

5.13.6 He mentioned that two surveys were carried out in 1992 and 1993 which are aimed to identify the real figures of farmers practicing chemical control and the current situation of pesticides formulation and marketing. Vietnam has no pesticides production unit to produce a.i. They have only pesticide formulation manufacturers. The pesticide used in Vietnam is not very high in comparison with other countries. He stressed that in Vietnam, the pesticide formulation as well as distribution and application must be immediately improved.

5.13.7 The PMC was very happy to note the utilisation of the TCDC concept for training candidates nominated by the Govt. of Vietnam and complemented the Technical Coordinator Unit in Thailand for offering the training. The PMC assured the National Coordinator, Vietnam of all support needed for ensuring safety in the production and usage of pesticides.

6.0 REPORTS FROM THE UN AGENCIES

6.1 FOOD AND AGRICULTURE ORGANISATION (FAO)

6 1.1 Dr.Kopisch Obuch presented the activities of the FAO in the field of pesticides. The FAO staff member briefing on the FAO specifications for Plant Protection Products said that the project was terminated in May, 1993. Among the 27 countries covered under the project, he said, 14 countries were also "RENPAP countries". The long term objective of the project, he said, was to assist the participating Governments in the safe and efficient use of pesticides in an environmental sound manner.

6.1.2 Through workshops, training and consultations, he mentioned, the member countries received assistance in the following aspects of pesticide management:

- Regulation and control of Pesticides (Pesticide Registration) and enforcement schemes.

- Pesticide formulation analysis and quality control.

- Collection and collation of data on pesticide poisoning.

- Harmonisation of pesticide registration requirements.

- Efficacy data and standardised test protocols.

- Toxicology, residues and environmental data.

- Harmonisation of labelling requirements (use of color coding and pictogrammes).

- Safe and efficient use of pesticides.

- Regional information exchange network.

- Prior Informed Consent (PIC).

6.1.3 He encouraged the RENPAP members to continue the project activities and to take care of full implementation of schemes and systems. In particular, he asked the countries to nominate Designated National Authorities(DNAs) as focal points for PIC if not done yet, to harmonize pesticide labelling requirements, adopt FAO specifications for agricultural pesticides and WHO specifications for hazardous pesticides and to continue training programmes. He endorsed the recommendations of the terminal report.

6.1.4 In addition, he strongly recommended to the RENPAP countries to introduce an import fee on pesticides of an amount of upto 1% fully accessible to the registration authority in order to guarantee sustainability of pesticide registration and control including the operation of pesticide laboratories

(maintenance, purchase of chemicals and replacement of equipment).

6.1.5 He made reference to the report of government responses to the questionnaire on the Code of Conduct. The first questionnaire was sent to FAO member countries to assess the pre-code situation in the field of pesticides. In order to assess the progress made in the implementation of the Code, a second questionnaire has been distributed. RENPAP members were encouraged to follow up on the completion of the second questionnaire.

6.1.6 The members were informed by him about FAO's policy on the clearance/purchase of pesticides for field project:

Pesticide formulations falling into class 1a and 1b of the WHO Recommended Classification of Pesticides by Hazards will not be supplied to developing countries under project assistance for use by small farmers or untrained and unprotected workers. The same holds for formulations in Class 2 unless it can be demonstrated that uses adhere to the necessary precautionary measures.

6.1.7 The members were informed that a new booklet for pesticide specifications will be published soon and

that the Manual on Specifications is under review (to be published early, 1994).

6.1.8 The RENPAP members were furthermore informed that FAO is in the process of preparing guidelines for the procurement of pesticides and on disposal of pesticides; both guidelines will be available in early, 1994. The members were also informed that the guidelines for the disposal of pesticides waste and pesticide containers on the farm were withdrawn and that they will not be distributed any more; a revised version will be available soon.

6.1.9 Finally, he suggested the RENPAP members to submit to FAO documented information on pesticide poisoning and incidents in the context of pesticide use in developing countries.

6.1.10 He made the following FAO documents available to the delegates of the member countries:

1. Project findings and recommendations. Terminal Report: "Support for the Implementation of the Implementation of the International Code of Conduct on the Distribution and Use of Pesticides" AG:GCP/INT/457/IPN.

2. Analysis of Government responses to the First Questionnaire on the International Code of Conduct

on the Distribution and Use of Pesticides. FAO 1993.

3. Field Programme Circular 8/92: Pesticides Selection and Use in Field projects.

6.1.11 The PMC placed on record the continued support received from the FAO in the implementation of the various activities of the project. The PMC assured that RENPAP would take all followup steps in the continued implementation of the Code of Conduct project in the Asia and the Pacific region and that this has been included as one of the activities in the new phase recently approved this project.

6.2 **Statement from World Health Organisation**

6.2.1 The WHO staff member Mr. Plestina describing the activities of the IPCS activities said that these are basically focused in two main directions. (a) Toxicological and Safety Evaluation of toxic chemical and (b) Risk management. The ultimate goal of human health and environmental risk evaluation, he said, is to identify the type and the extent of this risk arising from manufacture, transport, storage, use and disposal of pesticides. IPCS is making every effort to disseminate information obtained through risk evaluation procedure to every member state through numerous publications generated by the programme. The

most important documents relevant to the risk evaluations he mentioned are:

1. Toxicology monographs produced by FAO/WHO JMPR on pesticides leaving residues in food.

2. Environmental Health Criteria (EHC) documents addressed to scientific experts responsible for the evaluation of the risk incurred by pesticides to human health and the environment.

3. Health and Safety Guides (HSGs) which are designated for the wide range of administrators, managers and decision makers in various ministries and governmental agencies, as well as in commerce and industry.

4. Pesticide data sheets (PDS) on selected, most hazardous or most widely used, compounds are produced and distributed to various institutions and individuals. These documents are produced in collaboration with FAO.

5. International chemical safety cards summarise essential product identity data and basic health and safety informations for use by workers and employers in factories, agriculture and other workforces where pesticides are used.

6. The WHO Recommended Classification of Pesticides by

Hazard and Guidelines to Classification. Although the Classification takes into account oral or dermal toxicity, whichever higher, it also considers any irreversible effect that may be recognised. Classification refers to the technical active ingredient and the classification of the formulation should take into account final concentration of the active ingredient and whether the product is solid or liquid. The guidelines to classification is prone to biennial revision.

6.2.2 Following assessment of the risk arising from pesticides, he said the IPCS pays considerable attention to the activities leading to reducing hazard from their use to an acceptable level. This, he mentioned, is done through three different areas of activity:

1. Prevention of pesticide poisoning which includes production of guidelines for control, the validation of the existing antidotes and methods used for the treatment of poisoning. The key role in these activities is the development of information system for poison control.

2. Promotion of the safe use of pesticides concentrates on the reduction of pesticide over exposure through recommendations, monitoring of exposure, application

of protective measures etc.

3. Education and training in the safe use of pesticides includes first of all development and implementation of the Multilevel Course on the Safe Use of Pesticides and on the Diagnosis and Treatment of Pesticide Poisoning. This course is designed to train the trainers and should be adapted for each country taking into account local conditions and need.

6.2.3 IPCS he said, also provides training on basic chemical safety (toxicology, ecotoxicology, risk assessment) for various profiles. These training programmes, he mentioned, define the basic principles of pesticide toxicology needed for understanding ways for implementation of safety measures, including registration, licensing, inspection, safe use and disposal.

6.2.4 The PMC members deeply acknowledged the support extended by WHO in the implementation of the various activities of the network project particularly in the area of Occupational Safety. In view of the renewed thrust of the project in the area of safety the PMC members requeted the WHO for augmenting their support and contribution for fully achieving the objectives of the new phase of the network project.

6.3 **STATEMENT FROM ECONOMIC AND SOCIAL COMMISSION FOR**

ASIA AND THE PACIFIC (ESCAP)

6.3.1 The representative of ESCAP stated that there are growing concerns and pressure from both the general public and governments to minimise the environmental impact of pesticides. Environmental impact evaluation requires understanding of the toxicity, degradability and mobility of chemicals. However, this information, if available, is not readily accessible to decision-makers and users in the developing countries.

6.3.2 He said that it is indispensable that decision-makers and users have access to and good knowledge of information regarding the use of pesticides and their negative effects of human and animal health, and the environment. Developed countries, whch have been using pesticides much longer than the developing countries, have collected a substantial amount of information through scientific research and practical experiences on pesticide use and effects which is being made available through a number of European or North American official and private computerized databases. What is missing so far is an adaptation of these data to the climatic and environmental conditions in Asia. To close this gap is the purpose of the project "Database on Pesticides and the Environment".

6.3.3 He explained that the "Database on Pesticides and the Environment" is currently implemented by the United Nations Economic and Social Comission for Asia and the Pacific (UN/ESCAP) in collaboration with CIRAD (Centre de cooperation internationale en recherche agronomique pour le development), France with funds provided by the Council of European Communities (CEC). The aim of the project is to develop a computerized database programme whch links technical informatin on agro-pesticides, as collected in the ARSAP/ CIRAD Regional Agro-pesticides Index, with data on the effects of these products on public and animal health, and the environment. In its present phase, collection of data on pests, crops, and pesticide use recommendations and effects concentrates on the ASEAN counteis including Thailand, Philippines, Brunei, Indonesia, and Singapore with Malaysia yet undecided about its participation.

6.3.4 This database, he said, when fully established, will allow rapid access to comprehensive information on pesticides used in the region, their active ingredients, their major and animal health, and the environment. This information is expected to be useful for pesticide regulatory authorities, poison

control centres for humans and animals and environmental protection agencies.

6.3.5 He said that contacts with the Regional Network on Pesticides for Asia and the Pacific (RENPAP) have continued with the aim to integrate ARSAP technical database (products available and their effects on the environment), with the more economic oriented database maintained by RENPAP.

6.3.6 He added that work has been progressing for further development of the 2nd edition of the Pacific volume of the Regional Agro-pesticide Index carried out jointly with the South Pacific Commission (SPC). An associate expert from France has been assigned to the Plant Protection Unit since February 1992, and will be completing the edition of the Regional Agro-pesticide Index by the end of this year. In cooperation with SPC, new project proposals in the field of data collection and dissemination in the Pacific have been prepared.

6.3.7 He informed the meeting that pesticide safety publication programme coordinated by ARSAP has continued to promote the translation of the illustrated pesticide safety guide into local languages. This guide developed for village level distribution is printed in Bislama, the language of

Vanuatu (translations into other Pacific languages are under way).

6.4 Statement from Centre de cooperation internationale en recherche agronomic pour le development (CIRAD)

6.4.1 The representative of CIRAD briefed the meeting about its activities and involvements in the field of crop protection. He stated that:

1. the Center for International Cooperation in Agriculture Research for Development, CIRAD is a French state-owned body which was created in 1984.

2. it is scientific and technical organisation with a mandate to contribute to rural development in the tropics and subtropics through research, experimentation, training and scientific and technical information in the fields of agronomy, zootechnics, veterinary medicine, forestry and food technology.

3. CIRAD operates from its own research centres and experimental stations in mainland France and French overseas territories, but also in more than 45 countries across all five continents, in conjunction with national research and development structures, international centres (CHIAR) or in support of public or private sector projects.

5. of a total staff of 1,800, 900 senior scientific ad technical staff, including 400 stationed overseas, are available for work on research and development projects.

6. its activities are based on several major lines of research.

6.4.2 With regards to Crop protection he said that top priority has been given to integrated pest management, which reduces losses caused by pests to economically acceptable levels, hence reducing pesticide use, and the creation of parasite-resistant transgenic plants.

6.4.3 In the field of pesticides he said that the major objective of CIRAD is to promote any action in view to improve the safe use of pesticides.

6.4.4 He mentioned that RENPAP can play an important role in the collection of scientific data on the use of pesticides in the region in view to arrive to a consensus with the very active ecologist group in Asia like PAN based in Malaysia.

6.5 **STATEMENT FROM UNITED NNTIONS INDUSTRIAL DEVELOPMENT ORGANISATION(UNIDO)**

6.5.1 The UNIDO staff member in his statement said that his organisation's primary mandate is to assist the

promotion and acceleration of industrial development in developing countries and promotion of cooperation on global, regional and national level.

6.5.2 In this he said, UNIDO covers the major industry sectors namely agro-industries, chemical industries, metallurgical industries and engineering industries.

6.5.3 Importance of chemical industry development need not be emphasised he said, since in any country or society, per capita consumption and production of chemicals determine the overall standard in terms of health, nutrition, shelter, food production, life expectancy, animal welfare, etc. However, these very chemical industries are the major producers of toxic and hazardous waste. He said UNIDO in this puts major emphasis on...safety measures,

waste minimisation;
cleaner technologies;
Rehabilitation;
Bio-technology;

Energy and value added products from renewable resources; Environmental and economic issues.

6.5.4 UNIDO's special emphasis, he mentioned, is on industry's responsibility to the products they produce and the role the Governments and the consumers to play in the overall safety to man and environment.

6.5.5 Apart from various activities carried out in the Asia region, he said, that special mention should be made of the Integrated International Safety Guidelines for Pesticide Formulation in Developing countries.

6.5.5 He said UNIDO is planning to set up a Global Network for Safety in Chemical Production (GLONESA in CP) and pesticides will be one of the sub-sections. In addition, he said, a safety warning card for pesticides has been issued for the benefit of formulations and others handling organo phosphorous and carbamate pesticides. Combining the safety at the production level with FAO Code of Conduct he said, should cover the whole spectrum of safety in pesticide development from cradle to grave

7.0 INTRODUCTION TO THE FARMER-CENTERED AGRICULTURAL RESOURCE MANAGEMENT (FARM) PROGRAMME

7.1 The Regional Coordinator presented briefly the recently approved FARM programme with seven sub-programme components of which Pesticide Production and Information (RENPAP) has been included as one of the sub-programmes. The overall objective, immediate objective outputs and the success criteria of the pesticide sub-programme was presented in details particularly keeping in mind the necessity of integrating the appropriate activities and outputs

with the other six sub-programmes of the FARM programme. The meeting appreciated the new orientation of the pesticide sub-programme with a strong industrial angle focussing attention for promotion of clean, environment and user friendly technologies and products needed to complement the Integrated Pest Management sub-programme. While the production, handling and storage aspects would have to be distinctly performed independent of the other sub-programme, the availability of the safer and environment friendly products and their application technologies would need fine tuning at the grass root level for effective with of the other components of the FARM programme. The meeting felt that this could be achieved by the national Programme Implementation Committees working under the National Coordination Committees in the respective member countries of the network. The representative from Sri Lanka and Peoples Republic of China were specially requested to expedite constitution of the National Coordination Committees for the implementation of the FARM programme.

8.0 PROGRESS ON PESTICIDE DATA COLLECTION SUB-PROGRAMME

8.1 With the brief introduction by Mr. Deuse of CIRAD and the Regional Coordinator, RENPAP, the Data Collection expert, India presented the work carried out by RDC,

Delhi and the responsibility taken up as a Central Coordinator Unit, Delhi. Members of PMC were briefed about the concept of this sub-project with its objectives and the activities to be carried out by each member country through their respective Data Collection experts. The activity of the project into two phases (Phase I and Phase II) was highlighted. It was explained that economic data collection (Phase II) cannot be initiated on the computer unless Index Data Base (Phase I activity) is completed. All the seven formats of Index Database file was presented and the necessity of the details of each information to be collected was explained. With regard to the work already done by the Regional Database Centre (RDC) Delhi, it was explained that the data for India had been collected, filled in on the sheets and entered in the computer and the revalidation of the entered data is being carried out; about 6800 entries have already been made for various index files for India. He said that a copy of the part of filled-in data sheets for firms/ manufacturers/ traders/ expert, active ingredient, major crops, major pests had also been submitted to CIRAD for information and perusal.

8.2 PMC members were also provided with 28 new formats for economic pesticide data collection and were urged

on the need for the collection of various information asked for in different formats. Data collected for India in the said new formats was presented both in tabular form and in graphs/ histogram through slides.

8.3 The need for a data base at regional level was, therefore, explained by the Regional Coordinator (RENPAP).

8.4 For the smooth working of the data collection project, the UNIDO staff member explained that it was necessary to start the pesticide data collection in all the member countries. He therefore, requested that the data collection expert for each member country should be nominated and their CVs be made available to UNIDO for processing their formal appointment.

8.5 The delegates from some of the member countries pointed out certain difficulties for the collection of required information like price, which is difficult to obtain and desired that the GIFAP code may also be supplied.

8.6 Realising the extent of work for such a large network and the initial difficulties to begin with, Mr. Deuse of CIRAD confirmed to extend the project period for another one year i.e., upto Sept. 1994. He, however, advised that sufficient data should be collected from

all the member countries so that it could be presented to the donor agency for getting fresh funding through EEC for the continuance of this long term project.

8.7 It was agreed to organise a major workshop-cum-training programme at Bangkok / Delhi for the National Data Collection experts so as to train them in the use of software, data input, storage etc. The specific problems of the national data collection expert would however be handled by the Regional Database Coordinators.

8.8 It was further agreed that the data once collected and compiled by the member countries would be revalidated at Central Coordinating Unit, Delhi for presentation to CIRAD and other donor agencies so as to get their further financial support for the continuance of this long term project.

8.9 Mr. Deuse of CIRAD intervened with the following comments: "I have the impression that the work done during the first phase of the project on data collection is very impressive.

It is the first time that a group of countries arrive to better know the "market" of the pesticides and so to really contribute to implement the IPM concept. I have all time advocated the idea that the first step

of IPM is to know what is really the situation of the use of pesticides. After this evaluation then it is possible to take measures - so called IPM package technologies and some actions to improve crop protection. You have and I know all the difficulties of your fantastic work - really implement IPM in the field. Among the reasons of your success -

I see your commitment to work as a homogeneous group willing to arrive to concrete solutions.

It is exactly what the donors want now: more action directly done by the assisted countries. I remember that in the beginning of the project some pessimists said that the task was unuseful and impossible. You have demonstrated on the contrary and for the donor point of view the best satisfaction is that you and only you estimate that your work is useful."

9.0 REVIEW OF PROGRESS OF SETTING UP OF TECHBICAL COORDINATOR UNITS OF THE PROJECT

9.1 The PMC reviewed in detail the setting up and functioning of the TCUs on:

a) Pesticide Formulation Technology and Quality Control in India.

b) Impurities in Technical Grade Materials in Republic of Korea

c) Industrial Safety Related to Environment in Indonesia

d) Bio-pesticides and Botanical Pesticides in Thailand

e) Eco-toxicology in Pakistan

f) Application Technology in Malaysia

g) Industrial Hygiene and Occupational Safety in Philippines

h) Raw Materials and Intermediates Prospecting and Analysis in Iran

9.2 The PMC noted with satisfaction that these Technical Coordinator Units have been set up with significant cash and kind assistance from the member countries of the network and would be fully meeting the requirements of training consultancy and trouble shooting needs of the member countries in the new phase of the project. These eight TCUs, the PMC felt would be a source of strength for the network project in this region.

10.0 DISCUSSION ON FUTURE ACTIVITIES, MEETINGS, TRAINING PROGRAMMES, STUDY TOURS, FELLOWSHIP, CONSULTANCIES

10.1 Comprehensive discussions were held in order to draw up a comprehensive workplan (Annexure - III) for the full duration of the project. The PMC felt this to be necessary in order to incorporate with this sub-programme activity with the other six sub-programmes of the Farm programme. In the 8 core member countries the National Coordinators were requested to ensure that, at the implementation level, the need of the pesticide sub-programme is precisely matching to meet the needs of the Farm programme.

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11.0 **CONCLUSIONS**

1. The Tripartite Project Review Meeting considered the Project Performance Evaluation Report(PPER) and the Terminal report(RAS/88/031). Based on the report of the Regional Coordinator on the various outputs, the member countries expressed their full satisfaction on the overall performance of the Network and explained the view that this has been possible mainly due to excellent cooperation of the member countries and strong linkages established with the Technical Coordinator Units serving as focal points as well as the effective adoption of TCDC in the implementation of the activities.

Based on the appraisal, the PPER report was duly adopted alongwith the Terminal report.

2. The meeting noted that the project having satisfactorily completed all the activities during 1990 to 1993 expressed its appreciation to UNDP for including this as one of the seven sub-programmes of the FARM programme. The meeting also appreciated the fact that UNDP accepted UNIDO's proposal for including all the 15 member countries to make full use of the activities and outputs of the Pesticide Production and Information Sub-programme.

3. All the member countries agreed to provide necessary effective linkages through the National Coordinating committees of the FARM programme to facilitate implementation of the pesticide sub-programme activities within the overall ambit of the FARM programme.

4. The meeting agreed that the focus of the Pesticide Production and Information sub-programme should be on the following areas:

i) promotion of cleaner and safer technologies and environment and user friendly pesticides and their formulations;

ii) development of biological and botanical pesticides

iii) disposal of discarded outdated pesticides and toxic wastes emanating from the production process;

iv) occupational safety and industrial hygiene;

v) pesticide container disposal;

vi) Use of pesticide which would complement the IPM strategy through replacement of high volume low value persistent products with low volume high active safer pesticides.

5. The meeting noted with great appreciation the contribution of the donor countries especially France, Denmark and Finland for supporting the national, regional and global projects thereby promoting RENPAP activities.

6. The meeting reviewed the pesticide data collection work carried out so far and noting the problems and the complexities involved in the process appreciated the progress made. It was concluded that such a data base would be of immense value to the member countries of the Network. The meeting noted the satisfactory completion of data collection work in the Regional Data Base Centres in Delhi and Bangkok and desired that the other member countries should

gear up data collection work to come up to this level by September, 1994. Based on the progress of work, a suitable proposal may be worked out for further assistance required for continuation of the data collection activities.

7. It was agreed that the pesticide products appearing in the PIC list would be suitably indicated in the Index to be published in due course.

8. The meeting was briefed on the current activities of the IPCS in updating the multi-level course on the safe use of pesticides and on the diagnosis and treatment of pesticide poisoning and felt that the concept of such type of education would be most appropriate for the countries of the region. The meeting, therefore, decided to request IPCSs to assist the member countries in introducing the multi-level training programme. These training programmes may be linked with other programmes in the field of pesticides and should include medical and para-medical personnel besides technical officers responsible for registration and other regulatory activities.

12. **RECOMMENDATIONS**

1. Having taken into account the successful completion of the IIIrd phase of the Network,

Having noted the inclusion of the RENPAP sub-programme in the FARM programme,

The meeting **recommended** that all the National Coordinators in association with the Regional Coordinator and UNIDO should facilitate implementation of the various activities of the safe pesticides production and use sub-programme for the benefit of the resource poor farmers of the watershed upland and rainfed low land farming systems.

2. Having taken into account the importance of safety aspects both at the production and the user ends,

Also recognising the inadequacy of facilities available in the member countries in the development of environment and user friendly pesticides and their formulations in support of IPM,

The meeting **recommended** promotion of cleaner and safer technologies with emphasis on the development of biological and botanical pesticides.

3. Having recognised the importance of application technology and safe use of pesticides,

And also having recognised their importance to the resources poor farmers of the watershed upland and rainfed low land agricultural systems,

The meeting **recommended** coordinating among UN agencies to assist in the group training in application technology, occupational safety and industrial hygiene and safe use of pesticides in the field.

4. With the problems associated with accumulated pesticides both at the industries and in the farms ends,

And having considered the lack of experience in handling such toxic chemicals in the region,

And also taking into account the lack of expertise and infrastructural facilities,

The meeting strongly **recommended** full-fledged assistance and cooperation in taking measures according to international standards in the safe disposal of these pesticides and containers.

5. Having considered the importance of data collection and its usefulness to the member countries and to other international bodies,

And having realised the problems associated with the collection of certain data due to their sensitive nature,

And also having acknowledged the development of

necessary expertise and mechanism to collect the data in a standard format,

The meeting **recommended** continuation of the data collection and further training to all the member countries in data collection and finally in harmonisation of the data and establishing links with data collection and carried out at ESCAP/ARSAP.

6. Taking into account the budgetary constraints, the meeting **recommended** to concentrate on group training on all areas relevant to the safe development of pesticides making use of the facilities of the Technical Coordinator Units and also extending the group training into individual training wherever considered necessary since this would enhance the utilisation of the consultants in a most economical way.

7. Having taken note of the existence of considerable volume of literature available and work done on the use of neem as pesticide and the absence of commensurate commercial utilisation of this valuable product,

The meeting **recommended** consultation with the policy makers towards formulating policies needed for enhancing production of the neem based pesticides and their formulations through suitable registration and market intervention methods.

Annexure 1

LIST OF PARTICIPANTS OF THE TRIPARTITE REVIEW MEETING OF REGIONAL NETWORK ON PESTICIDES FOR ASIA AND THE PACIFIC (RAS/88/031) AND PROJECT MANAGEMENT COMMITTEE MEETING OF THE REGIONAL NETWORK ON PESTICIDE PRODUCTION AND INFORMATION FOR ASIS AND THE PACIFIC (RAS/93/061) HELD ON 6TH OCTOBER 1993 IN THE UNDP CONFERENCE HALL, 55 LODI ESTATE, NEW DELHI-110 003.

INDIA (HOST COUNTRY)

Mr. K.K. Mathur,
Secretary,
Dept. of Chemicals & Petrochemicals
Min. of Chemicals & Fertilizer
Govt. of Irdia

Mr. Vinay Kohli,
Jt. Secretary,
Dept. of Chemicals & Petrochemicals,
Min. of Chemicals & Fertilizers,
Govt. of India

UNDP

Mr. Bayani Aguirre,
Sr. Dy. Res. Rep.UNDP
India

Ms. V. Sukuntha,
Programme OfficeR

UNIDO

Dr. B. Sugavanam,
Sr. Industrial Dev. Officer,
Vienna

ESCAP

Mr. D. Jourdain
Bankok

FAO

Mr. Kopisch Obuch
Sr. Officer, Plant Production and
Protection Division, Rome

WHO

Mr. R. Plestina,
Medical Officer,
Toxicology, Geneva

CIRAD

Mr. J. Deuse,
Head Pesticide Section,
Montpellier France

Country Delegates

Afgfnisthan
Mr. G.S. Haiderzada

Bangladesh
Mr. M.A. Malek

People's Republic of China
Mr. Zhen Wen Jun

Indonesia
Mr. Agus Wahyudi

Malaysia
Ms. S. Muhammad

Myanmar
Mr. U. Maung Maung

Nepal
Mr. R.S.L. Karna

Pakistan
Mr. U.K.Baloch

Philippines
Mr. Francisco Carnejo

Republic of Korea
Mr. Young Koo Kim

Sri Lanka
Mr. M.H.J.P.Fernando

Thailand
Dr. Sathorn Sirisingh

Vietnam
Mr. Minh Trung

RENPAP
Dr. S.P. Dhua
Regional Coordinator

AGENDA

Wednesday, October 6, 1993.

09.00-09.30 **Registration**

09.30-11.00 **Inaugural Session**

Welcome Address - Mr.B. Sugavanar

Address - Mr.Bayani Aguirre, Res. Rep., a.i. UNDP, India

Inaugural Address - Mr. K K Mathur, Secretary, Deptt. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India.

Tripartite Review Meeting

Vote of Thanks

Group Photograph

11.00 -11.20 *Coffee break.*

11.20 -11.40 **Adoption of Agenda, Designation of officers & Appointment of Rapporteurs. Logistics and other arrangements for the meeting.**

11.40 -13.30 **Country reports presentation by National Coordinators.**

Afghanistan, Bangladesh, P.R.China, Indonesia, Iran, Malaysia, Myanmar.

13.30-14.30 *Lunch.*

14.30-16.00 **Country reports presentation by National Coordinators** continued - Pakistan, Philippines, South Korea, Thailand, Sri Lanka & Vietnam. Report by Regional Coordinator & UN Agencies.

16.00-16.15 *Coffee break*

16.15-17.30 **Report on the progress of data collection system programme with the support of the Govt. of France.**

20.00 *Dinner*

Thursday, October 7, 1993

9.30-10.30 **Introduction to the FARM programme.**

10-30-11.00 *Coffee break.*

11.00 - 12.30 Discussion on future activities of the Safe Pesticides Production and Information programme and Integration of activities with other components of the FARM programme in P.R.China, India, Indonesia,Nepal,Philippines, Sri Lanka, Thailand and Vietnam.

Role of Technical Coordinator Units in India, Republic of Korea, Thailand, Philippines, Indonesia, Pakistan in the safe Pesticide Production and Information sub programme.

12.30 - 13.00 Collection of DSA

13.00-14.00 *Lunch.*

14.00-16.00 Discussion continued.

16.00-16.15 *Coffee break.*

16.15-17.30 **Formulation of the workplan.** Commitment from the member countries towards effective implementation of the activities.

19.30 *Dinner*

Friday October 8, 1993.

09.30 -10.30 **Discussion on workplan** continued.

10.30 -11.00 *Coffee break.*

11.30-13.00 **Demonstration by the Indian Pesticide Industry** at the India International Centre

13.00 -14.30 *Lunch*

14.30 - 1500 **Consultation/communication** between National Coordinator, Regional Coordinator and support from UN agencies.

15.00 -16.00 **Proposed revision** - project document and workplan.

16.00 -16.30 *Coffee break.*

16.30 -17.00 **Recommendations.**

17.00 -17.30 **Adoption of report.**

17.30 -18.00 **Closing remarks.**

WORKPLAN AS AGREED FOR RAS/93/061 - RENPAP
SAFE PESTICIDE PRODUCTION AND INFORMATION FOR ASIA AND THE PACIFIC

GROUP TRAINING (All Countries)			INDIVIDUAL CONSULTANCY (In support of Group Training)		GROUP MEETING		INDIVIDUAL TRAINING/STUDY TOUR *				
Subject	Provision	Venue	Subject	Provision	Subject	Venue/Year	Requesting Country	Subject	Provision	Year	Placement
Application Technology Safe Use of Pesticides	6 days Sept. 93 1995 1994(FAO) 1996	 Malaysia Malaysia India(Hyd) Philippines	Application Technology	1 m/m 1995	CIPAC CIPAC/IUPAC	France 1993 USA 1994 1995 1996 1997	Afghanistan	Safe use of pesticides			
Workshop on user and environment friendly IPM compatibl e pesticide formulation and quality control	Nov. 1994 Nov. 1996	India India	Formulation Technology	1 m/m 1996	PMC Meetings	India 1993 China 1994 Sri lanka 1995 Vietnam 1996 Pakistan or Nepal 1997/98	Bangladesh	Residue Analysis, Quality Control Safe use of pesticides			
Workshop on Eco-toxicology	4 days March 1994 March 1997	 Pakistan Pakistan	Eco Toxicology	1 m/m each 1994 & 1997			Myanmar Sri Lanka	Disposal of Pesticides -do-			
Workshop on Upgrading of Laboratory Facilities for monitoring pollutant in air, soild and water	6 days 1994 1995	South Korea South Korea	Ana'ytical Techniques	1 m/m each 1995 & 1998			Pakistan	Eco-toxicology Management Application of Pesticides Waste Disposal			
Workshop on Occupational Safety and Industrial Hygiene	6 days 1994	Philippines	Pesticide Poisoning	1 m/m 1994							

GROUP TRAINING (All Countries)			INDIVIDUAL CONSULTANCY (In support of Group Training)		GROUP MEETING		INDIVIDUAL TRAINING				
Subject	Provision	Venue	Subject	Provision	Subject	Venue/Year	Requesting Country	Subject	Provision	Year	Placement
Workshop on Safe Disposal of Pesticide Waste and Safe Management of affluents	6 days 1995 1997	Indonesia Indonesia	Waste Disposal	1 m/m each 1995 & 1997			South Korea	Environmental Toxicology			
Bio-Botanical Pesticides	6 days 1994 1997	Thailand Thailand	Registration of Bio-botanicals Biopesticide Formulation	1 m/m 1994 1 m/m each 1994 & 1997			Thailand	Formulations of Biological & Botanical Pesticides			
			Pest Control Operations	1 m/m (Sri Lanka)			Vietnam	Formulation Analysis Biological & Botanical Pesticides Application User & Environment Friendly Formulations Effluent Treatment Systems			
							Malaysia	Workers Operational Safety & Air Monitoring			
							Sri lanka	Pesticide Poisoning - Workers Exposure Use of PPE/Safety Disposal of Pesticides			
							Sri Lanka	Pesticide Poisioning - workers expossure Use of PPE/Safety			

**Wherever possible individual training should be linked with group training on a selective basis*

UNIDO Comments

The report gives an extensive review of the proceedings of the final Tripartite Review Meeting held in New Delhi, India. The statements made by the member countries and the International Agencies clearly represent the importance of the programme and reflect the change of emphasis to safety, role of bio-technology, integrated pest management (IPM), application technology all in support of low volume/high active/low risk pesticides.

Data collection played an important part of the meeting due to its relevance to understand the market trend, user preferences and above all keep track of the type of formulations that are being used.

The Project Management Committee (PMC) meeting is unique in that the programme is now linked to the Farmer-Centered Agricultural Resource Management (FARM) and the coordination with the various other sub-programmes in support of FARM programme is vital. In addition, RENPAP will have responsibilities of consolidating the safe development and use of pesticides and providing necessary inputs to the demonstration sites of the FARM programme.

Another significant change would be the emphasis on group trainings rather than individual in-depth training which could be supported under national projects. Overall the report is a summary of the new thinking in the field of agrochemicals in the days to come.