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**REGIONAL NETWORK ON SAFE PESTICIDES PRODUCTION AND
INFORMATION FOR ASIA AND THE PACIFIC**

DP/RAS/93/061

**Technical report: Tripartite review meeting and Project Management
Committee meeting, Hanoi, Viet Nam from 4-6 December 1995***

Prepared for the Governments 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)
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1.0 INTRODUCTION

- 1.1** The Project Management Committee Meeting of the Regional Network on Safe Pesticide Production and Information for the Asia and the Pacific (RENAP) had its third meeting along with the second Tripartite Project Review Meeting in Hanoi, Vietnam on the 4th, 5th and 6th of December 1995. The meetings were intended to review the progress of activities and to plan the future activities including detailed programming for the year 1996.
- 1.2** The Project Management Committee took special note of the re-definition of the role of RENAP in the FARM programme as set out in the FARM Strategy Framework recently finalised by UNDP. According to the new strategy, the RENAP will continue as a separate regional project, however, this project will form part of the support network in the Regional Multi-Disciplinary Support Facility, and will maintain close technical links with the Regional Multi-Disciplinary Support Team.
- 1.3** The representatives each from Bangladesh, Peoples Republic of China, India, Indonesia, Republic of Korea, Nepal, Pakistan, Thailand and Vietnam and representatives of the United Nations Organisations including United Nations Development Programme (UNDP), United Nations Industrial Development Organisation (UNIDO) and International Organisation of Pesticide Manufacturers Association (GIFAP), Regional Institute of Environmental Technology (RIET) participated in the meeting. The list of participants is placed at Annexure I of the report.

1.4 The proceedings of the Tripartite Project Review Meeting and the Project Management Committee meeting are summarised below:

2.0 INAUGURAL SESSION AND TPR MEETING

2.1 The meeting was formally inaugurated by Dr. Prof. Nguyen Quang Ha, Vice Minister of Agricultural and Rural Development, Government of Socialist Republic of Vietnam. While welcoming the delegates he mentioned that in Vietnam in the process of economic transformation of the country agricultural production, particularly rice production and recorded improved progress which means both local and export demands. However, he said, insect pests and diseases remain to be an important problem with the area of rice infested by pest resulting in increased use of pesticides. He mentioned that Vietnam is currently striving for cleaner agricultural production where chemical control measures need to be constantly improved to be least toxic to the communities health, environment and public and in conformity with the Integrated Pest Management(IPM) concept. He extended full support to the RENPAP project activities and committed everything possible from the National Institute of Plant Protection for achieving the full objectives of the project. He expressed his happiness in hosting for the first time the TPR and PMC meeting of RENPAP in Hanoi and wished a successful meeting.

2.2 The Director General of Agriculture, Govt. of Socialist Republic of Vietnam in his address emphasised the need for user and environment friendly safe pesticides and extended full support and cooperation for the successful implementation of the various activities of RENPAP to fulfil its objectives.

2.3 The UNIDO staff member mentioned that the RENPAP has grown from strength to strength with 15 member countries participating in the network. He

emphasised that RENPAP is closely linked to the National projects in Pakistan, India and China and also to a regional project on Data Collection supported by the Government of France. He mentioned that this meeting is being held in Vietnam after a very successful PMC meeting in China during October 1994 which coincided with the inauguration of the R&D Centre for Development for User and Environment Friendly Pesticide Formulations in China located at Nantong which has already started attracting the attention of many multinationals for setting up joint ventures. He said that since that meeting, an excellent workshop in Philippines was organised by the Fertilizers and Pesticide Authority in Davao City on Occupational Health and Industrial Safety during December 1994. He mentioned that the year 1995 has been a testing year when the financial crisis struck every where in the UN system and obviously badly affected the RENPAP. He said that due to this problem RENPAP had to take up austerity measures and to restrict its activities and hold only two very important workshops, one in India on User and Environmentally Friendly Pesticides and the other in China on Production and Quality Control of Biocides (*Bacillus thuringiensis*). He expressed his indebtedness to the member countries for providing the cost of travel to the participants to attend the Bio-pesticide workshop held at Wuhan in China. He also mentioned that unfortunately due to the budgetary constraints it was not possible to fulfil some of the commitment made to the Government of Philippines and to the International Institute of Biological Control and to postpone two workshops one in Indonesia and the other in the Republic of Korea.

2.4 He sincerely hoped that the year 1996 would be brighter and that it would be possible to go ahead with greater conviction and dedication particularly in

view of the fact that the UNDP has cleared the budget for 1996. He urged the meeting to put greater emphasis on overall risk reduction in agro-chemical development with the main aim of moving towards low risk pesticides and safer formulations, disposal of obsolete pesticides and above all to occupational health and industrial safety and ecotoxicology.

- 2.5 He emphasised that UNIDO is fully committed to Agenda 21 and with the technical assistance will lead towards environmentally sustainable industrial development, water management, chemical safety, hazardous waste management, food security, integrated pest management etc. He emphasised that in this regard RENPAP will have a major contribution to make in the Asia and the Pacific Region to act as a catalyst and promote national action programmes in support of Agenda-21 for risk reduction in agro-chemical development.

Tripartite Review Meeting

Dr. Prof. Nguyen Quang Ha, Vice Minister of Agriculture and Rural Development initiated the TPR meeting and invited the Regional Coordinator to present the Project Performance Evaluation Report (PPER). The Regional Coordinator mentioned that RENPAP is a network of 15 Asia Pacific countries including the core 8 member countries of the FARM programme and is one of the largest networks in the UNDP system in the Asia and the Pacific Region. This sub-programme he stated aims to assist the participating countries of the network in preserving the environment through reducing the load of persistent and toxic crop protection chemicals on the one hand and ensuring safety to all those engaged in the production, handling and use of these particularly the farmers. He explained that 8 Technical Coordinator Units (TCUs) have been set up based on the infrastructural facilities offered by the member countries and have been upgraded

as Centres of Excellence for meeting the requirements of training, consultancy and trouble shooting of the participating countries of the network. Also, he added, decentralisation of the implementation of the key activities of the project through these TCUs has ensured stronger involvement and "ownership" of the member countries in the implementation of various activities of the project. He said that the TCDC concept has been put to direct use in RENPAP and almost all the training programmes and workshops are being organised within the region besides recruiting consultants from within the region. The Regional Coordinator of the project, he said, has succeeded in developing a country programme in China - Sustainable Pest Control and Soil Fertility Programme - CPR/91/120 and at the instance of the Govt. of PR China and UNDP, China, is serving as the Programme Management and Technical Adviser for ensuring transfer of technology within the region while utilising the RENPAP as the conduit. The RENPAP in turn he said, is being financially assisted for the services being rendered by the Regional Coordinator and this has been recognised by the UNDP Headquarters as a unique feature and recommended for emulation.

He highlighted that RENPAP continued to make distinct contribution towards the containment of the development objectives and the salient contributions are -

- a) **Policy changes** : The Govt. of India and the Govt. of The Philippines with the strong pursuance of the sub-programme management have decided to ban the use of BHC which has all along been the largest single pesticides produced and consumed, about 30,000 MT per year, in India with effect from 1-4-97 and the banning of about a dozen pesticides known to be toxic and prevalent in The Philippines. These policy changes would bring in very significant reduction of the persistent and polluting pesticide load on the environment in the two important participating countries of the network and would also reduce poisoning of the large farming community.

- b) **Institutional Development** : Strongly supported by the member countries who are hosting eight Technical Coordinator Units (TCU) which are the focal points of the specialised operational areas of the sub-programme, the activities of the network are being implemented in a totally decentralised manner. These TCUs have been set up based on the infrastructural facilities offered by the member countries and have been upgraded for meeting the requirements of training, consultancy and trouble shooting of the participating member countries of the network. Some of these TCUs have attracted funding from donor agencies besides Govt. funding and have got transformed into country programmes.
- c) **Cost Effective Organisation of Training Programmes and Workshops**: The strategy of establishing TCUs has helped to provide clear focus of key elements of the programme and enabled concentration of resources in selected areas instead of spreading thinly. These TCUs have been built up as resource centres accessible to all participating countries and are organising and providing training in the respective field of specialisation and the RENPAP supports participation from member countries in these workshops. This project thus provides an institutional underpinning at the national level for key elements of the regional programme and avoid a thin spread of resources. The sub-programme has succeeded in persuading some of the TCUs to organise tailor-made training programmes free of cost and many of the member countries are bearing the cost of travel of the trainees for undergoing these specialised training; the RENPAP is bearing only the DSA cost. Through significant cost reduction, this approach is enabling RENPAP in expanding its training and workshop programmes which is one of the essential components of its activities.

- d) **Feeling of "ownership" of the Programme and Strong Participation of the Member Countries :** The participation in RENPAP is mainly at the level of technical experts and due to their intimate involvement in the sub-programme activities over a period of time, has provided continuity in discussions and also facilitated establishment of personal linkage between technical personnel in the participating countries. The Country Coordinators of this sub-programme are the key people with commitment to the objectives of the network and RENPAP is "Owned" by the Country Coordinators, all of whom have a strong sense of participation in the network.
- e) **Ripple Effects :** Implementation of this sub-programme has resulted in significant ripple effects and in this context specification need to be made of the establishment of a country programme named "Sustainable Pest Control and Soil Fertility" - CPR/91/120 in the Peoples Republic of China. This intimate linkage between a regional network sub-programme and a country programme has been commended as a unique example by the UNDP headquarters in one of their communications.

He drew attention of the meeting towards the new modalities evolved in organising the recently held workshop in China on Production and Quality Control of Biopesticides (*Bacillus thuringiensis*) in which the country hosting the workshop shouldered the organisational expenses, the member countries paid for the travel expenses of their nominees while the RENPAP paid for the DSA expenses. This modality had two distinct advantages : (1) since the country paid for the travel cost, the selection of the candidate made was found to be more appropriate, thereby ensuring effective utilisation of the workshop outputs, (2) there was cost sharing in the organisation of the workshop. He recommended that if this modality is adopted then RENPAP would not only be able to

organise more number of workshops but it would be possible to attract participants who could derive maximum advantage from the workshop proceedings.

It was decided in the meeting that the members would further study the PPER and take up the document for discussion on the 6th of December 1995. Accordingly on the 6th in the forenoon session the TPR meeting was resumed. Initiating the discussion the UNIDO representative mentioned that the PPER prepared has been evaluated by the UNIDO headquarters and found to be very comprehensive and well presented. The document brings out clearly the complexities in organising the various activities of RENPAP and the values of each output is evident from the interest shown by the member countries in hosting the workshops and in utilising the outputs.

The meeting commended the role of RENPAP in assisting the Govt. of India to decide banning the use of BHC with effect from 1-4-1997 which would result in significant reduction of pollution of the environment as it would eliminate the application of about 30,000 MT of technical BHC in the form of 250000-300000 MT of formulated BHC products in agriculture and malaria control. The meeting also valued that the terminology "Dirty-Dozen" used in the documents needs to be clarified and the necessary amendments carried out accordingly by referring to Prior Informed Concept (PIC) list.

Having noted the modalities of successful organisation of the recently held workshop on Production and Quality Control of Bio-pesticides the meeting felt that the member countries may be persuaded to consider cost sharing in the organisation of the workshop as has been followed in the China Workshop.

The meeting noted that good infrastructural facilities in the form of hardware and software has been developed in the member countries and the data collection work has been geared up. Considering the need for continuous updating of the valuable pesticide data, the member countries agreed to continue the data collection work and suggested

that suitable donor agencies be approached for obtaining necessary assistance for continuing the work and strengthening it further.

The UNIDO representative mentioned that the mid term review report and the regional projects of the UNDP has flagged RENPAP for its achievements in not only generating the country projects but also linking activities intimately with the country projects thereby multiplying the benefits of the various activities of the network. Also its report had commented the effective performance of the RENPAP activities and the active participation generated in the country member countries. The members also appreciated the role played by the RENPAP in the overall FARM programme and also noted the role it would be required to play in accordance with the new strategy framework finalised by the UNDP.

Thereafter the PPER which was duly reviewed by the UNDP and UNIDO headquarters was adopted by the meeting.

3.0 ADOPTION OF THE AGENDA

3.1 The agenda as adopted is placed at Annexure II

4.0 DESIGNATION OF OFFICERS

4.1 Prof. Ha Minh Trung was elected as Chairperson, Ms. R.B. Pradhan as Vice-Chairperson and Dr. Sathorn Sirisingh was elected as Rapporteur of the meeting.

5.0 STATEMENT OF THE NATIONAL COORDINATORS

The National Coordinators / designated officers presented the country reports and these are summarised below.

5.1 Bangladesh

- 5.1.1 The country paper for Bangladesh was presented by Mr. Abdus Sattar, Director General, Dept. of Agriculture Extension, Government of Bangladesh. He said that the economy of the country is based on agriculture, providing livelihood for 85% of the population. Plant protection activity is the country's mainly dependent upon pesticides. The Pesticide Ordinance 1971 and the Pesticide Rules 1985 regulates the import, manufacture, sale, distribution and use of pesticides. He stated that the present consumption of pesticides are approximately 8000 MT as finished product of which insecticides constitutes 80% and the use of pesticides is increasing at the rate of 5-7% annually. The pesticides being used are mainly imported in the form of finished product. However, there are eight companies operating formulation plant producing mainly formulation pesticides using indigenous carrier.
- 5.1.2 He said local formulations are adopting major features of the international integrated safety guidelines for pesticide formulation as adopted by UNIDO. IPM practices are being used in crops like rice & vegetables.
- 5.1.3 He stated that very recently Govt. of Bangladesh has banned some pesticides like Chlordane, dieldrin and methyl bromide for use in agriculture. The use of synthetic pyrethroids in paddy has also been suspended for high fish toxicity.

- 5.1.4 He said that Bangladesh has participated in many activities organised by RENPAP and has greatly benefitted from the exchange of experiences and technology among the member countries.
- 5.1.5 Two expert nominees from Bangladesh participated in the workshop on Occupational Health Safety and Industrial Hygiene in the Philippines from December 5-9, 1994.
- 5.1.6 Workshop on Development and Production of User and Environment Friendly Pesticide Formulations and Quality Control held in Delhi from 20-25 February 1995 was attended by an expert from Dept. of Agriculture of Govt. of Bangladesh and was well trained on the subject.
- 5.1.7 **Future Activities**
- 5.1.7.1 He said that Bangladesh requires consultancy in a) Pesticide residue analysis and upgrading laboratory facilities, b) maintenance and repair of instruments used for analysis of pesticide formulation c) disposal techniques for unusable / degraded pesticides at village level.
- 5.1.7.2 Training is required in the field of Pesticide Formulation analysis preferably at TCU in Delhi and on Botanical Pesticide Formulation Technology preferably at TCU in Thailand.
- 5.1.8 The PMC having taken note of the presentation by Mr. Sattur appreciated the keen interest of Bangladesh in supporting various programmes of the RENPAP and agreed to consider the future activities proposed.

5.2 China

- 5.2.1 China was represented by the National Coordinator Mr. Hong Chuanyi. In his presentation of the country report he said that agriculture occupies an important position in the national economy of the country. Out of a total geographical area of 960 million hectares, total farm area is 105 million hectares. Rice, wheat, soybean, maize, cereals are the major crops in China, he stated.
- 5.2.2 China is one of the biggest pesticide producers in Asia Pacific region. During 1994 a total of 174 active ingredient of pesticides were manufactured in 300 units in the country. He mentioned that the annual output was around 220000 MT of which insecticides were 170000 MT (75%), herbicides 30000 MT (16%) and fungicides 20000 MT (9%). He stated that there are about 505 different pesticide formulations (287 insecticides, 130 fungicides, 70 herbicides and 18 plant growth regulator) manufactured locally in 400 factories in the country producing 1.5 million ton of finished products valued at US \$ 1000 million.
- 5.2.3 He highlighted that Emulsifiable Concentrate accounts for 23% of total production of formulated product followed by Soluble Liquids (SL) 20%, Wettable powders (WP) and dust (DP) 17% each, suspension concentrates (SC) and granules 7% each.
- 5.2.4 With an export of 51000 MT and import of 26000 MT during 1994, the net consumption of pesticides in the country was 195000 MT he mentioned.
- 5.2.5 Since old conventional formulation like dust, EC, WP & granules are most prevalent, their application safety, drift, environmental pollution are highly pronounced and has been causing concern. He mentioned that due to inferior

quality of formulations more than 30% or around 70000 MT of pesticides are wasted every year in China.

5.2.6 He highlighted that with the assistance of UNDP/UNIDO a new Environment Friendly Safer Pesticide Formulation R&D Centre has been created in Nantong, China. This centre is open not only to China but to the members of RENPAP.

5.2.7 The Project Management Committee greatly appreciated the role played by the Govt. of China in hosting the previous PMC meeting and recently organising the workshop on Production and Quality Control of Biopesticides (*Bacillus thuringiensis*) following the new modality in which the Govt. of China shouldered the entire responsibility of financing all local costs for organising the workshop. The meeting also appreciated the effective role being played by Mr. Hong Chuanyi in coordinating the activities of RENPAP with those of the other components of the FARM programme in China as well as his generous offer to utilise the newly created facilities for the benefit of the RENPAP member countries in the field of pesticide formulation development, seed dressing and quality control in the country project entitled Assistance to Pesticide Formulation Development in which he is the National Project Director.

5.3 India

5.3.1 The country paper from India was presented by the National Coordinator Mr. P.C. Rawal.

5.3.2 He said that India has become self-reliant in pesticide supply. Present production of pesticide is about 80,000 MT technical grade material. Only

around 2% of the technical grade pesticides are imported. Export of pesticides worth about US \$ 100 million last year was made to many developed and developing countries in the world. He mentioned that finished products are locally produced by over 600 pesticide formulation units from the technical grade material which is almost exclusively of local manufacture. The domestic market is one of the fastest in the world, he said.

5.3.3 He highlighted that government of India has decided to ban the use of BHC in agriculture as well in Malaria control with effect from 1-4-97. Newer and safer bio-botanical pesticides like Bt and Neem based pesticides have been provisionally registered in the country.

5.3.4 **Group Activities**

He said that India participated in all the workshop organised by RENPAP on various specialised area at its different TCUs namely -

- a) Expert Group Meeting on Policy Issues in the Region for Bio and Neem (Azadirachta indica) Based Pesticides Development, 1-3, September, 1994, Bangkok.
- b) Workshop on Pesticide Data Collection Systems, 5-10, September 1994 Bangkok.
- c) Workshop on Industrial Hygiene & Occupational Health and Safety, 5-9 December 1994, Davao City, Philippines.
- d) Workshop on Development and Production of User and Environment Friendly Formulations and Quality Control, 20-25, February 1995, Delhi

- e) Workshop on Production and Quality Control of Bio-pesticides (*Bacillus thuringiensis*) October 31 - November 9, 1995, Wuhan, PR China.

5.3.5 Participation in FARM programme activities

India is participating in FARM programme activities and carried out following activities to strengthen integration -

- a) Selection of 4 demonstration sites at typical watersheds in different parts of country
- b) Demonstration trials at selected sites carried.
- c) Peoples' participation in the programme at sites
- d) Participation in the Programme Steering Committee of the FARM programme in China
- e) Farmers training in participating countries namely in China being arranged.
- f) CCC organised 7 meetings to discuss and implement various activities.

5.3.6 The Institute of Pesticide Formulation Technology (IPFT), an autonomous Society under the Ministry of Chemicals & Fertilizers successfully discharging responsibility of TCU in the field of pesticide formulation technology and quality control of RENPAP. Besides providing indepth individual training to nominees from China and Sri Lanka, IPFT hosted and organised a Regional Workshop on Development and Production of User and Environment Friendly Formulations and Quality Control in Delhi from 20-25,

February 1995. The workshop was attended by 18 specialists from 13 member countries. The workshop was considered timely in the sense the region is yet to catch up with the developed changes taking place in the field of pesticide formulation development focusing on improved safety. The recommendations made during the workshops are being followed up by the member countries.

5.3.7 Concluding his remarks he said that the Government of India is fully committed to the RENPAP programme and would continue to provide support to enable it to achieve the objectives laid down in the programme document.

5.3.8 The meeting appreciated the strong support being given by the Govt. of India through hosting the RENPAP secretariat with generous cash and kind contributions and also for providing indepth training and group trainings in the field of user and environment friendly pesticide formulation development and quality control.

5.4 Indonesia

5.4.1 Mr. Augus Wahyudi, Nominee of the Govt. of Indonesia participated in the PMC meeting and presented the country paper. He said that Indonesia had actively participated the various activities of RENPAP. He stated that expert nominees to the workshop on Development of User and Environment Friendly Pesticide Formulation & Quality Control in Delhi and Workshop on Production and Quality Control of Biopesticides (Bt) in Wuhan, China had been exposed to the latest developments in the environment friendly pesticides and Biopesticides production technology.

5.4.2 He stated that a Country Coordinating Committee (CCC) under Bureau of International Cooperation, Ministry of Agriculture, Govt. of Indonesia has

been established to coordinate the activities of the seven sub-programmes of the FARM including RENPAP programme.

5.4.3 He said that a workplan has been developed by CCC with the following objectives -

- to observe ongoing integrated agriculture development activities in selected location.
- to review ongoing development activities in selected location in order to see compatibility with the objectives of FARM.
- to design alternative strategies for implementation of FARM activities in collaboration with local development agencies.

5.4.4 He stated that work plan for various subprogramme like farming system, integrated pest management, watershed management and agroforestry have been finalised. Other sub-programmes like PCSD, Bio-technology & Bio-diversity and Safe Pesticide Production and Information would give technology transfer support to the FARM programme.

5.4.5 Pesticide he said, is needed for a greater purpose, particularly in the near future Indonesia would have to increase the production of crops and draw material for agro industry. Rapid growth of population and conversion of farm land to industry affect production of crops. Besides this change of culture from agriculture to industry has been creating the problem of availability of farm labour. He felt that use of pesticide will be the best alternative, therefore the output of the RENPAP would be very appropriate to meet the needs of the Indonesian farms.

5.4.6 He emphasised that data collection programme should continue as it is an important and useful project activity of RENPAP.

5.4.7 He proposed that TCU in Indonesia will host the Workshop on Safe Disposal of Pesticide Waste and Safe Management of Effluents in July 1996.

5.4.8 The PMC complimented the Govt. of Indonesia for the strong support being given to RENPAP programme and appreciated the offer to host the second Workshop on Safe Disposal of Pesticide Waste and Safe Management of Effluents in July 1996.

5.5 Republic of Korea

5.5.1 Mr. Young Koo Kim, National Coordinator presented the country paper. He said that Korea actively participated in various activities of the RENPAP project and gave the following details.

5.5.2 Workshop on Occupational Health Safety & Industrial Hygiene.

Two expert nominees, one from the Government institute and one from the association of pesticide industry took part in the workshop from 5-9 December 1994 held in Philippines. All the documents, information and recommendation of the workshop are being adopted by pesticide production industries as well as pesticide end-users in the country.

5.5.3 Workshop on Production and Quality Control of Biopesticides (*Bacillus thuringiensis*)

A nominee from National Agricultural Sciences & Technology (NASTI) participated in the workshop held at Wuhan, China. As an outcome of the workshop the Korean government has started to change the quality control

measures of Bt bioefficacy from spore count method to bioactivity by using the relevant pests such as diamond-back moths. In addition, formulation technology of Bt. is efficiently modified to mass production scheme of the antagonistic microbe, which showed an excellent control effect on troublesome pathogens in cash crops.

5.5.4 He mentioned that Dept. of Crop Protection under the National Agricultural Sciences & Technology (NASTI) took over the role & the function of National Coordinating activities of RENPAP.

5.5.5 With regard to the operation of the Technical Coordinator Unit (TCU) in Korea, he said, that NASTI has agreed with UNIDO to execute the project "Safety in Development of Pesticides, upgrading of laboratory facilities for Monitoring Pollutants". Accordingly Govt. of Korea has offered to host workshop on Upgrading Laboratory Facilities for monitoring Pollutants in air, Soil and Water in May 1996.

5.5.6 The PMC appreciated the offer of Govt. of Republic of Korea to host the workshop in May 1996 and commitments to support various activities of RENPAP programme.

5.6 Malaysia

The National Coordinator sent the following report to the meeting.

5.6.1 Malaysia continued to participate actively in the various activities of RENPAP in 1995. As agreed in the last PMC meeting of RENPAP, Malaysia completed the following activities during 1995.

5.6.2 Malaysia was represented by two delegates in the workshop on Industrial Hygiene & Occupational Health & Safety held in Davao City, the Philippines from 5-9 December 1994. This workshop was very timely in view of the passing of the occupational Safety & Health Act 1994 by the Malaysian Parliament last year.

5.6.3 Workshop on Development and Production of User and Environment Friendly Pesticide Formulations & Quality Control in Delhi was attended by an expert from the Dept. of Agriculture & has provided an opportunity to appraise the latest development in formulations and quality control of pesticides. Such workshops it was felt, would be more useful if technologies developed could be transferred to the pesticide industry in developing countries like Malaysia and that more such workshop should be held regularly.

5.6.4 Malaysia actively participated in the workshop on Production and Quality Control of Biopesticides (*Bacillus thuringiensis*) held in Wuhan, China from October 31 - Nov. 9, 1995.

This workshop has served as a good forum for exchange of information and knowledge on *Bacillus thuringiensis* (Bt) including its biological properties and role as a biological pesticides for use in agriculture as well as in vector control. The workshop had provided an opportunity for member countries to appraise themselves on the latest developments on bio-pesticides. RENPAP should initiate standardisation of techniques for quality control and the development of protection for efficacy evaluating of Bt products.

5.6.5 Data collection work in Malaysia would be completed by mid December 1995.

5.6.6 **Proposal for Future Activities**

(i) **Technical Coordinator Unit for Pesticide Application Technology -**
Following the success of Workshop on Pesticide Application Technology held in 1993, the TCU proposes to host another workshop on Pesticide Application Technology in Malaysia in September 1996.

(ii) It was requested that RENPAP may organise a workshop on upgrading of Laboratory Facilities for Monitoring Pollutants in Air, Solid and Water at the TCU in South Korea in 1996.

5.6.7 The PMC appreciated the active participation of Malaysia in the various RENPAP activities and the offer of hosting a second workshop on Pesticide Application Technology in Sept. 1996 and decided to include this in the workplan of 1996.

5.7 Nepal

5.7.1 The country paper was presented by National Coordinator Dr (Ms.) R.B. Pradhan. She said that Nepal is a small agricultural country with diverse agro-climatic conditions. Nearly 90% of population's economy depends on agriculture. Agriculture contributes 60% of GDP with a population of nearly 19 million with a growth rate of 2.6%.

5.7.2 She mentioned that the government policy is to commercialise and diversify agricultural production on the basis of comparative advantage and export potential thereby encouraging production of industrial and high value crops.

5.7.3 In view of the need to increase agricultural production, control of pests (25 - 30% loss) is considered as an important tool in agricultural development, therefore, plant protection has separate identity in is the present strategy.

5.7.4 She stated that misuse of pesticides has been a matter of great concern with respect to environment/ water pollution and unwanted residues in food.

7.5 **Group activities**

She said that Nepal has been participating in the programme and attended different meetings and workshops organised by RENPAP/ UNIDO.

(i) Ecotoxicology Workshop, Islamabad

Participation of senior officials in ecotoxicology workshop in Islamabad (27-31 March 1994) greatly helped to understand the importance in the field.

(ii) Bio-botanical Workshop, Bangkok

The Registrar of the Nepal pesticide board has participated in the policy and use of bio-pesticide in Bangkok (Sept 1-3, 1994) which has helped to explore the importance and use of bio-pesticides in the country.

(iii) Biopesticide Workshop, China

One senior officer of Plant protection division participated in the workshop on bio-pesticides (31st Oct. - 9 Nov. 1995) in Wuhan China. She was greatly benefitted with the opportunity to know the latest developments in the field of bio-pesticides. She said that Nepal is very much willing to use Bt for pest management particularly in fruits and vegetables. Use of hazardous pesticides in these crops has been creating problems and it is a matter of great concern for the consumers and also for the tourists. Even the potential export market may have a set back particularly for commodities like tea, vegetables fruits, cotton etc. Nepal would be very keen to participate on this type of workshop in future also.

5.7.6 Future Activity Proposal

(i) Support for exploring traditional knowledge of natural pesticides in pre and post harvest operations. Many natural pesticides are being used without knowing its activities in detail. Timely action need to be taken to understand its advantage and disadvantage if any.

(ii) She requested for assistance or training of the personnels in the field like i) bio-pesticides, ii) safe handling iii) data collection.

(iii) Consultancy support for pesticide lab. establishment / training personnels.

(iv) Hardware and software support for data collection work.

5.7.7 The PMC appreciated the active participation of Nepal in various activities of the RENPAP. The meeting thanked the National Coordinator for the offer of Govt. of Nepal to host the next Project Management Committee meeting in Kathmandu, Nepal.

5.8 Pakistan

5.8.1 Dr. Umar Khan Baloch, National Coordinator while presenting the country paper mentioned that Pakistan has benefitted very much through participation in all the activities of the RNEPAP.

5.8.2 He said that Pakistan is a country of 130 million people with vast natural resources and diverse climatic conditions. Thus, it has great potential to grow almost every crop including wheat, rice, maize and pulses as major food crops and cotton, sugarcane and a variety of fruits and vegetables. Climate being ideal for the various crops is also ideal for multiplication of pests including

insects, diseases and weeds. These pests during pre and post harvest stages are reported to damage about 30% and 7% of potential crop yield respectively.

- 5.8.3 He highlighted that use of pesticides has significantly grown since the transfer of pesticide marketing from the public to the private sector in 1980. This increase has partly come due to change of registration of pesticides from regular registration system to generic registration systems and higher returns from cotton crop.
- 5.8.4 With Danish funding through UNIDO, he said that the Ecotoxicology centre has been established in the country. The Center has good facilities to work in the area of pesticide residue in the food chain and the environment. This Centre has started serving as the Center of Excellence for RENPAP activities and hosted the first workshop on exo-toxicology during March 1993 which was inaugurated by the President of Pakistan and attended by 13 nominees from the member countries of the RENPAP.
- 5.8.5 The National Coordinator through his participation in RNEPAP and strong advocacy at national level earned support to ban, import, marketing and use of 22 pesticides including the "dirty dozens" in Pakistan.
- 5.8.6 Pakistan participated in all the activities of the RENPAP during the last one year.
- 5.8.7 Pakistan also extended full support for hosting eco-toxicology workshop in March 1997 and to participate in the various activities identified in the workplan of RENPAP.

5.8.8 The PMC complimented the establishment of the Eco-toxicology Centre in Pakistan through the assistance of UNIDO/DANIDA and appreciated the offer of Pakistan to host second workshop on Eco-toxicology in 1997.

5.9 Sri Lanka

The Country Report for Sri Lanka was sent to the meeting by the National Coordinator.

5.9.1 Sri Lanka participated in the various activities of RENPAP and are summarized below:

5.9.2 Group Activities

(i) Workshop on Industrial Hygiene and Occupational Health and Safety held in Philippines from Dec. 5-8, 1994 was represented by two expert nominees of the Govt. of Sri Lanka. As a follow up of the recommendations of the workshop, integrated international safety guidelines have been distributed at national level to all pesticide formulating plants and are being used as a guide in respect of the safety provisions. At the national level, Occupational Safety & Health Network has been established and an Advisory Council has been appointed as well as the Institutional profile has been published. A network news letter was published.

(ii) An expert nominee of the Ministry of Indigenous Medicine of Sri Lanka attended the Workshop on Development and Production of User and Environment Friendly Pesticide Formulations and Quality Control held in Delhi from 20-25 February 1995.

Since the production of pesticides are its initial stage of development, the knowledge gained during the workshop was considered very useful in the national context. On the whole, both the workshops have helped Sri Lanka to boost the status of the respective discipline, considerably.

(iii) The Data Collection Expert participated in the training workshop on Data Collection System held in Bangkok in September 1994.

5.9.3 Individual Consultancy

Assistance in the field of pest control operation was sought from RENPAP during the last PMC. The activity has been delayed. However, an assistance in this field is still considered vital and may be carried to the current year.

5.9.4 Future Activities

It was proposed that the following activities be included:

- Workshop on biological agents for utilisation in agriculture
- Strengthening of biological monitoring activities of Industrial Hygiene and Occupational Health Sector
- to establish an E-mail network among the member countries.

5.10 Thailand

5.10.1 The country paper was presented by the National Coordinator, Dr. Sathorn Sirisingh. He highlighted the various activities of the RENPAP project carried out by Thailand since the last PMC meeting held in China.

5.10.2 He said that the production of many crops in Thailand depends heavily on the use of pesticides. As a result insects of the major pests of these crops have developed pesticide resistance to certain extent. Hence, more quantities of pesticide are being used.

5.10.3 Realising that pesticide is still essential in increasing increased food production, he said, Thailand has put a lot of effort to produce the safer pesticides including bio-pesticides and botanical pesticides.

5.10.4 He mentioned that the model plants for producing neem extract and Bt have been constructed in Bangkok and Chiang Mai respectively.

5.10.5 **Group Training**

(i) Workshop on Development and Production of User and Environment Friendly Pesticide Formulations and Quality Control, Delhi, India February 20-25, 1995. Dr. Suraphon Viseton, Scientist from Dept. of Agri. participated in the workshop and the workshop was found to be very interesting and useful.

(ii) Workshop on Production and Quality Control of Biopesticides (*Bacillus thuringiensis*), Wuhan P.R.China, October 31 - November 9, 1995. Ms. Vanida Wongkeitkachon, a scientist working on *Bacillus thuringiensis* from Entomology and Zoology Division, Department of Agriculture participated in this workshop. On her return she has started working on the production of Bt at Chiang Mai.

(iii) Bt Production - He said that the model plant in Chiang Mai has started producing Bt with a fermenter having a capacity of 600 lt/batch. Bt is found to be very effective against the diamond back moth, cabbage looper, beat army

worm, cotton bollworm. Since all these pests have developed resistance to chemical pesticides to various degrees, use of Bt in the control of these pests has been found to be quite effective.

(iv) **Neem extract production** - He mentioned that neem extract with 1% azadirachtin is being produced in the model plant in Kasetsart University and is primarily being used in i) experimental research work, ii) vegetable and fruit trees.

(v) **Data Collection System** - He said Thailand has completed both Index and Economic Data Collection work. As Regional Database Centre Coordinator index data from Indonesia and Malaysia are being collected.

5.10.6 Training - He requested for the following trainings:

- a) Formulation of biological and botanical pesticides
- b) Waste disposal

5.10.7 Consultancy : He requested for consultants in the following areas-

- a) Bio-pesticide formulation
- b) Registration of Bio-botanical pesticides

5.10.8 The PMC appreciated the efforts of the Royal Government of Thailand in promoting safer pesticides like bio-botanical pesticides and the generous support extended to RENPAP in organising workshop on the subject. The PMC also noted the workshop on Bt being organised in Chiang Mai in November 1996.

5.11 Vietnam

5.11.1 The country paper for Vietnam was presented by the National Coordinator Dr. Prof. Ha Minh Trung. He said that in Vietnam during the last few years food production has recorded impressive important progress and has been able to meet the domestic demand. However, pests are still a big constraint in food production and the use of chemicals is a major input in the control of pests.

5.11.2 He highlighted that Vietnam's participation in RENPAP is aimed to improve pesticide production, formulation and use.

5.11.3 He stated that Vietnam has participated in the various activities which are as follows-

i) Workshop on Occupational Health and Safety and Industrial Hygiene in Philippines, 5-9 December 1994. Two expert nominees of Vietnam attended the workshop which was rated very successful.

ii) Workshop on Development and Production of User and Environment Friendly Pesticide Formulations and Quality Control, Delhi 20-25. February 1995. Expert nominee of Vietnam attended the workshop and got "hands on" training on various aspects of the user and environment friendly pesticide formulation development.

iii) Workshop on Production and Quality Control of Bio-pesticides (*Bacillus thuringiensis*) Wuhan, China October 31 - November 9, 1995 was attended by expert nominee of the Government of Vietnam.

These workshops have helped to a great extent to improve the production and use of chemical and biological pesticides in the country.

5.11.4 With respect to the Data Collection work Vietnam has submitted the following data :-

- Name and address of manufacturers, formulators and registrants
- Active ingredients
- Commercial Products
- List of pests
- List of crops

5.11.5 **Activities of the FARM programme**

He informed that FARM programme activities in vietnam includes farmers training in using biological control agents pesticides like NPV, Metarhizium, Beauveria and botanical pesticides.

5.11.6 **Future Activities**

He emphasised the need for strengthening of the training programmes on bio-botanical technology production, pesticide quality control and pesticide application.

5.11.7 The PMC complimented Dr. Prof. Ha Minh Trung for his strong commitment to RENPAP programme and participating actively in all the activities.

6.0 REPORTS FROM THE UN & OTHER AGENCIES

6.1 Statement from United Nations Industrial Development Organisation (UNIDO)

- 6.1.1 UNIDO Representative mentioned about the UNIDO's mandate for Ecologically Sustainable Industrial Development (ESID) with emphasis on cleaner and safer production. He specifically mentioned about agrochemicals which are essential but at the same time becoming areas of concern because they are directly used in the environment. He mentioned about various developments in the pesticide industry introducing user and environment friendly pesticides and their formulations, but fertilizer would become a major source of concern more than pesticides due to large usage of fertilizers causing Entrophication, ground water contamination and accumulation of heavy metals. Therefore he stressed the point that countries should also look into fertilizer usage along with pesticides under the umbrella of risk reduction in agrochemicals development.
- 6.1.2 He strongly advocated the member countries to make use of RENPAP to develop national projects and UNIDO can help on its own or in collaboration with other agencies to provide technical assistance. He emphasised that the member countries should look into way and means of long-term existence of RENPAP and also include new areas according to the changes and demands taking place in the pesticide industry.
- 6.1.3 He mentioned various activities of UNIDO in Asia Africa and East and Central Europe related to risk and reduction in agrochemicals development.

6.2 Statement from International Organisation of Pesticide Manufacturers(GIFAP)

6.2.1 On behalf of the International Organisation of Pesticide Manufacturers(GIFAP), Mr.Browning thanked UNDP/UNIDO and the organisers, Dr.Dhua, Dr.Sugavanam and Dr.Trung for extending the invitation to the GIFAP. He said this was an excellent opportunity for the industry to understand the concerns that member countries have about crop protection chemicals and perhaps to participate in seeking means to address these concerns.

6.2.2 He said that the industry believes it has a vital role in helping growers to achieve the increased crop production that must occur in order to feed the increasing populations of the member countries. The objectives of the industry are to provide growers with solutions to their pest problems and we will only remain viable and profitable when we continue to pursue this goal. When a grower is able to improve production and eliminate chemical usage, we should all be pleased for him. He mentioned that if the grower is able to adopt IPM practices and reduce his chemical usage, we are happy to work with him. The industry's view is that appropriate use of crop protection chemicals can be an integral component of an IPM program.

6.2.3 He stated that the industry believes strongly that the growers should be given a choice about the variety of tools that are available for him. A range of chemical types must be made available to combat the resistance issues that are inevitably present when man tackles nature. Some classes of chemicals are more toxic than others but may present a mode of action that has proven to be

highly effective. The challenge then is how to minimise the toxicity concerns but maintain the mode of action.

6.2.3 He said that we will be hearing at this meeting a lot about biological and botanical and other natural control agents. The members of GIFAP are also investing heavily in exploring these new approaches. This route to success, however, is not proving easy. Many chemicals promising in nature are not sufficiently active in purified form to compete with existing crop protection chemicals. Since these natural ingredients often have a highly complex chemical structure, they are often difficult and expensive to produce requiring completely new technologies. Because they are natural also does not make them less toxic than synthetic chemicals and resistance issues can also be present. In short, the industry is pursuing these approaches and there will be some success but the present armory of products will remain the mainstay of crop protection for many years to come, he said.

6.2.4 Finally, he thanked once again the RENPAP organisation for allowing GIFAP to participate in this important meeting and he said that GIFAP is looking forward to continuing cooperation with the governments of the member countries to ensure the safe and effective use of crop protection chemicals.

6.3 Statement from Regional Institute of Environmental Technology (RIET)

6.3.1 The representative of Regional Institute of Environmental Technology (RIET) briefed the meeting about their activities and involvement in the Data Collection Project entitled "Development and Use of Computer Software for Pesticide Market Data, Input, Storage, Retrieval and Dissemination"(RAS/90/148). He said that RIET is a not-for-profit making organisation, based in Singapore, supported by the Commission of European

Union and the Singapore Government. This institute was established to promote environmental management & appropriate environmental technology and for encouraging close links between Asian and European organisations. He mentioned that RIET has representatives and partner organisation throughout Asia and Europe. RIET has multi-national professional staff to meet its objectives.

- 6.3.2 He said that RIET's involvement dates back to the meetings of ESCAP/EU and RENPAP/UNIDO held in Bangkok in September 1994. He highlighted that pesticide data collection and database are the areas of present interest of RIET as these are worthwhile activities and RIET is very keen to evaluate the possibilities for continued support for its update and maintenance. He said that he had been engaged separately by both ESCAP/EU and UNIDO to evaluate the respective database programmes and to make recommendations for future options. He expected to complete this task within the next two months.
- 6.3.3 He also highlighted that though RIET was established only two years ago they have regular programmes in 10 Asian countries and through the partnership with RENPAP would be looking forward for newer programmes.
- 6.3.4 Regional Coordinator & UNIDO staff number complimented the interest shown by the RIET and extended welcome to their involvement in evaluation of Data Collection Programme.

7.0 PROGRESS ON PESTICIDE DATA COLLECTION SUB-PROGRAMME

7.1 Activities of Pesticide Data Collection sub-programmes, a French Govt. supported project, was presented by Data Collection Expert, India who is also the Regional Database Coordinator (Delhi) of the Central Coordinating Unit, Delhi.

7.2 He briefed the PMC members about the concept of the Data Collection project with its objective and organisation. He stated that activities of building and maintaining the database has been located at Regional Database Centre in Delhi and Bangkok. Regional Database Coordinators at Delhi and Bangkok coordinate the activities of 8 and 7 number countries of RENPAP respectively of their sub-region and provides all technical support in data collection, data entry and maintenance of database. He said that the activity of the project has been categorized into two phases (Phase I and Phase II). Phase I activity involves building up of Index Database which includes files like list of Data Origin, list of traders and manufacturers, list of active ingredients, list of trade names (both commercial products and technical products), list of pesticides packaging types, list of major crops and seeds, list of major pests, weeds and diseases. Phase II activities includes Main Database i.e. Pesticide Economic Data. He mentioned that 28 formats had been developed to collect pesticides economic data. Files in the main database are on imports of formulated pesticides, exports of formulated pesticides, imports of technical grade materials, exports of technical grade materials, local manufacture of formulated pesticides, local manufacture of technical grade materials, formulation type for pesticides, formulated pesticides used in non-agricultural sectors, retail prices and crop coverage.

- 7.3 He mentioned that Data Collection experts in all the member countries except Afghanistan are in position and have been trained during the workshop on Pesticide Data Collection Systems held in Bangkok during Sept. 1994. This workshop was meant to provide "hands-on" training to the designated data collection experts on methodologies of data collection, software installation, and its usage in data entry and storage. Experts were provided with software programmes for Phase I (Index database) and Phase II (Economic Database) along with data collection guidelines and software users manuals.
- 7.4 He highlighted that since the last training programme on Data Collection, the Phase I activity has been completed by member countries viz. India, Thailand, Sri Lanka, Myanmar, Iran, Malaysia, China and Vietnam. Pakistan has completed only the collection work. With regard to Phase II activity i.e. Economic Database, he said that both India and Thailand have completed both data collection, filling up of the formats, data entry and storage on to the software and soon more countries are expected to follow. To gear up the data collection work, Regional Database Coordinators located in Delhi & Bangkok have been assigned to visit Iran, Bangladesh, Sri Lanka and China, Indonesia respectively to assist the data collection experts in completion of the data collection work.
- 7.5 During the deliberations, the National Coordinators of Pakistan and Nepal have also requested for technical assistance for Data Collection / Entry work.
- 7.6 He also highlighted the need of inclusion of Pollution release and transfer registered (PRTR) data and Eco-toxicology Data in the RENPAP Database. He said that efforts would be continued to integrate the RENPAP / UNIDO Database with ESCAP/EU project in future and to include data on PRTR Data

and Eco-toxicology Data and it would contribute significantly towards implementing overall safety in pesticide production in the Asia Pacific region.

7.7 Some of the PMC members pointed out certain difficulties faced the Collection of required data and suggested that some of the sensitive data collected may not be released in the interest of member countries and in particular to certain competing companies.

7.8 The PMC meeting noted that infrastructural facilities in the form of hardware and software has been developed in the member countries and substantial work has already been completed. Having appreciated the need for a comprehensive database especially for assisting the member countries to phase out persistent, highly toxic pesticides and promoting ecofriendly pesticides with safer formulations, the meeting strongly supported strengthening of the data collection activities of the RENPAP. Having considering the need for continuous updating of the valuable pesticides data the member countries agreed to continue the data collection work and suggested that suitable donor agencies be approached for obtaining necessary assistance for continuing the work and strengthening it further.

8.0 INTEGRATION OF ACTIVITIES OF THE SAFE PRODUCTION AND INFORMATION SUBPROGRAMME WITH THAT OF THE FARMERS CENTERED AGRICULTURAL RESOURCE MANAGEMENT (FARM) PROGRAMME.

8.1 The meeting reviewed the role played by RENPAP in the implementation of the FARM programme in the eight member countries. Having taken note of the strategic framework recently finalised by UNDP in respect of the FARM programme according to which RENPAP would continue as a separate

Regional Multi-Disciplinary Support Facility and will maintain close technical links with the Technical Multi-Disciplinary Support Team, the meeting agreed to maintain close technical linkages with the other components of the FARM programme through the respective Country Coordination Committees as well as to participate in the field site activities. The National Coordinators of the FARM member countries agreed that at the FARM demonstration sites they will try to ensure availability of bio-pesticides, botanical pesticides and safer and user friendly pesticide formulation and target specific application technologies.

9.0 Review of the Activities of the Technical Coordinator Units

9.1 Production and Quality Control of Bio-pesticides - Mr. Hong Chuanyi briefed the meeting about the recently held workshop on Production and Quality Control of Bio-pesticides (*Bacillus thuringiensis*) organised by Prof. Xie Tianjin at BT Research Centre, Hubai Academy of Sciences from October 31 through November 9, 1995. The workshop was inaugurated by the Vice-Governor of Wuhan. The local expenses for organising the workshop was borne by the Govt. of the Peoples Republic of China, the travel costs by the member countries and the DSA cost by UNIDO. He said that this workshop was attended by 17 participants from 14 countries. The programme covered a wide range of subjects including production and quality control of Bt including biological properties, molecular biology, management of insect resistance to Bt, fermentation technology, Quality control of Bt products, application of Bt for control of agriculture, forest and public health pests etc. The evaluation carried out at the end of the workshop showed that the workshop was successful and useful to the work of the participants and recommended that -

- running the common course just like the last one as well as a special course focusing on screening Bt strains locally. Bt bioassay procedure, Bt fermentation technology and Bt application and demonstration, etc. respectively.
- running a large scale demonstration of Bt for controlling agricultural pests in the regional countries organised by UNDP and UNIDO.
- developing cooperation between the member countries of the Network region countries in the Bt pilot plant scale production, commercial production and application.
- endorsed the modalities developed in the organisation of this workshop and thanked the member governments for extending the full support for the successful organisation of the workshop.

9.2 Technical Coordinator Unit on Industrial Hygiene and Occupational Health Safety - Philippines

The TCU on Industrial Hygiene & Occupational Health & Safety hosted a Workshop on the subject from 5-8 December, 1994 in Davao City and on 9th Dec., 1994 in Manila. The meeting was attended by two expert nominees from each member country. The Workshop placed emphasis on a harmonised approach towards occupational health safety and industrial hygiene for ensuring safety to the workers. It was concluded in the Workshop that RENPAP/UNIDO should continue to support in enhancing the safety, health and environment (SHE) aspects of production, formulation and handling of pesticides.

The meeting noted with satisfaction the excellent facilities developed and Workshop organised in the area by the TCU in Philippines. Various recommendations made during the Workshop are being followed up by the member countries to disseminate the SHE aspect.

9.3 TCU on Development of Environment and User Friendly Pesticide Formulation Technology & Quality Control - India

Mr. Rawal, National Coordinator, mentioned that the Institute of Pesticide Formulation Technology (IPFT), a Govt. of India Society under the Dept. of Chemical and Petrochemicals, Ministry of Chemicals & Fertilizers has been successfully discharging the responsibility of the Technical Coordinator Unit on Development of Environment and User Friendly Pesticide Formulation Technology and Quality Control. The services rendered by the Institute continue to be well received by the member countries of the Network.

The Institute hosted the UNIDO/RENPAP workshop on Development and Production of User and Environment Friendly Pesticide Formulation & Quality Control in New Delhi from February 20-25, 1995. Eighteen expert nominees of the member countries participated in the workshop and were given "hands on" training in Development and Production of Environment Friendly Formulation & Quality Control.

He mentioned that the TCU provided indepth training on development of environment and user friendly pesticide formulations as well as on quality control to 2 nominees from China and 1 from Sri Lanka. The PMC deeply appreciated the strong support being given by the Government of India particularly through hosting the RENPAP Secretariat and extending training facilities through the Technical Coordinator Unit.

9.4 TCU on Industrial Safety, Environment Protection and Effluent Treatment and Disposal - Indonesia.

Mr. August Wahayadi offered to host the Workshop on Safe Disposal of Pesticide Waste & Safe Management of Effluents in July, 1996 by the TCU in Indonesia.

The PMC complimented the Govt. of Indonesia for the strong support being given to RENPAP programme and appreciated the offer to host the second Workshop on Safe Disposal of Pesticide Waste & Safe Management of Effluents in July, 1996.

9.5 TCU on Quality Control of Technical Grade Materials - Republic of Korea.

Technical Coordinator Unit on Control of hazardous impurity in Technical material has been set by Republic of Korea at the National Agricultural Science & Technology Institute (NASTI) with the cooperation of RENPAP/UNIDO through Safety in Development of Pesticides - Upgradation of Lab. facilities for monitoring pollutants.

Mr. Young Koo Kim, National Coordinator, mentioned that Govt. of Korea is ready to host Workshop on upgrading laboratory facilities for monitoring pollutants in air, soil and water in May, 1996 and decided to include this in the workplan.

The PMC members appreciated the offer of Republic of Korea to host the workshop in May, 1996 and decided to include this in the workplan.

9.6 TCU on Pesticide Application Technology- Malaysia

Following the success of Workshop on Pesticide Application Technology held in 1993, the TCU proposed to host another Workshop on Pesticide Application Technology in Malaysia in September, 1996.

The PMC appreciated and accepted the offer of Govt. of Malaysia to host second Workshop on Pesticide Application Technology in September, 1996.

9.7 TCU on Eco-Toxicology

Dr.Umar Khan Baloch, National Coordinator, Pakistan, offered to host the second Workshop on Ecotoxicology at Ecotoxicology Centre at Islamabad, a TCU of RENPAP in Ecotoxicology.

PMC appreciated the offer of Govt. of Pakistan to host second Workshop and suggested that this be held in 1997.

9.8 Findings

The PMC felt that the decentralised implementation arrangements of the RENPAP activities through the Technical Coordinator Units have significantly strengthened the networking. These Technical Coordinator Units which have emerged as centres of excellence in the respective areas of their specialisation are not only serving the national needs but are providing comprehensive training, consultancy and other support facilities to the member countries of the Network. It was agreed that all efforts be made by the respective Technical Coordinator Units of the RENPAP to further consolidate the activities in order to serve the member countries more comprehensively.

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

The Tripartite Project Review(TPR) and Project Management Committee(PMC) noted that the Farmer Centered Agricultural Resource Management(FARM) strategy frame work deciding the Safe Pesticide Production and Information sub-programme to continue as a separate regional project and that this project will form part of the support network in the Regional Multi Disciplinary Support Facility (RMDSF) and will maintain close technical link with the Regional Multi Disciplinary Support Team(RMDST). The National Coordinators of the 8 FARM member countries accordingly agreed to coordinate and maintain close technical links with the other components of the FARM programme through the Country Coordination Committees and also participate in the field site activities. The meeting felt that increasing agricultural production being the prime necessity of the member countries, the control of diseases, pests and weeds by adopting all available scientific means need to be adopted. Therefore, at FARM site availability of bio-pesticides, botanical pesticides, safer and user friendly formulations and target specific application technologies would need to be ensured.

The PMC noted with interest the success of the recently held workshop on Production and Quality Control of Bio-pesticides(*Bacillus thuringiensis*) in China hosted by the BT Research Centre, Hubai Academy of Sciences in which the local organisation of the workshop was funded by the Govt. of P.R. China, the travel expenses were borne by the sponsoring member countries while the RENPAP paid for the DSA expenses. The committee felt that this

approach of organising workshops would be cost effective and more number of such programmes could be organised for training a large number of experts of member countries with the resources available with the RENPAP. After having discussed the issue, the meeting agreed that the member countries may be requested to consider cost sharing in organisation of the Workshops.

The meeting felt that in the Project Performance Evaluation Report (PPER) the reference to the terminology "dirty dozen" needs to be qualified and the necessary amendments be carried accordingly by referring to prior informed consent(PIC) list.

11.0 CONCLUSION

The TPR meeting having considered the Project Performance Evaluation Report expressed their continued commitment to the various RENPAP activities and offered the necessary facilities in order to reap the full benefits of the project outputs through active participation in the workshops and training programmes. The meeting also reiterated greater emphasis on the continued strengthening of the TCUs for effective functioning needed for serving as focal points for the implementation of the various activities of the RENPAP.

The meeting also **endorsed** the focus of the project on the promotion of safety to the workers health and environment by adopting cleaner and safer technologies, user and environment friendly pesticides and their formulations including biological and botanical pesticides and low risk low volume pesticides with compatibility to the IPM programme.

The meeting also noted with great appreciation the continuation of support of donor countries especially Denmark for Eco-toxicology/Environmental

monitoring in Pakistan and France for Regional data collection activities of the RENPAP project.

Having taken note of the importance of the Eco-toxicology and Environmental monitoring of chemicals of concern to the member countries, the meeting concluded that UNIDO should seek continued support from donors for strengthening this field in the member countries taking Pakistan Centre as an example.

Having appreciated the importance of a comprehensive data base on pesticide production import and usage and the good work done under the "Development and Use of Computer Software for Pesticide Market Data, Input, Storage, Retrieval and Dissemination" - US/RAS/90/148 - the meeting decided to continue the activities of data collection for updating the data base on a continuous basis. While the member countries committed all assistance for continuing the data collection activities, it was suggested that further assistance required for this activity may be sought from suitable donor agencies. While India and Thailand did collect full economic data, many countries informed about the reluctance by many companies to give away too much of the production details, the meeting concluded that the respective Government should keep any such confidential information and release to RENPAP only such information that is deemed to be of non-confidential in nature.

The meeting having acknowledged with regret the problems encountered due to the temporary freezing of the project funds and also increased expenditure due to coordination with the FARM programme, the meeting concluded that UNIDO should approach the UNDP to seek additional funding to cover the cost of various activities envisaged in the sub-programme document. The

meeting also expressed its appreciation for the offer from GIFAP for possible assistance to Workshops.

The meeting thereafter approved the work plan (**Annexure III**).

The meeting welcomes the offer made by the representative of Nepal Government also to host the next Project Management Meeting in Kathmandu.

12.0 RECOMMENDATIONS

- having taken note of the importance of bio-pesticides to the member countries in their aim to promote IPM.
- having acknowledged the successful organisation of the recently held workshop on Production and Quality Control of Bio-pesticides (*Bacillus thuringiensis*) in China which displayed keen interest of the member countries, the meeting recommends that the member countries should consider cost sharing in organising the workshops.
- having noted the keen interest of the member countries in the development and usage of BT based Bio-pesticides, the meeting recommends that special efforts be made for linking up the BT Research Centre, Hubai, with the intending member countries for expediting transfer of technology for BT production, quality control, formulation, bio-assay and usage.
- having taken note of the effective role being played by the TCUs and also taking into consideration the expertise and facilities available with the TCUs, the meeting recommends that greater stress be given in the workplan on the organisation of workshops for the development of human resources and capacity building, which yields

better values in the regional context when compared with individual fellowships,

- the meeting having discussed various topics of interest and after having selected specific areas recommends that plant safety, workers health and environment protection, eco-toxicology and environment & environment protection, application of user and environment friendly, low risk/low volume pesticides with compatibility to IPM is a right blend of activities for meeting the needs of the member countries.

- The meeting having discussed the importance of data collection and its linkage with ESCAP/ARSAP database recommends that following the evaluation of the project, UNIDO/ESCAP should make necessary arrangements for seeking further assistance from suitable donor/organisations.

- Having noted the need for promoting safety in the production and usage of pesticides the meeting recommends that the concerned TCUs organise workshops on Upgrading of Laboratory Facilities, for Monitoring Pollutant in Air, Soil and Water, Safe Disposal of Pesticide Wastes/Safe Management of Effluents and Application Technology.

ANNEXURE I

LIST OF PARTICIPANTS OF THE TRIPARTITE REVIEW MEETING AND PROJECT MANAGEMENT COMMITTEE OF THE REGIONAL NETWORK ON SAFE PESTICIDES PRODUCTION AND INFORMATION FOR ASIA AND THE PACIFIC(RAS/93/061) HELD ON THE 4-6 DECEMBER, 1995 IN HANOI, VIETNAM.

VIETNAM (HOST COUNTRY)

Dr.Prof.Nguyen Quang Ha,
Vice Minister of Agri. & Rural Development,
Govt. of Vietnam.

Prof.Dr.Le Van Thuyet,
Director,
Plant Protection Research Institute,
Vietnam.

Prof.Dr.Nguyen Van Can,
Director,
VN Biological Control Research Centre.

UNDP

Mr.Nguyen Thanh Tung,
National Programme Officer,
UNDP, Hanoi.

Mr.Nguyen Khac Tiep,
Programme Officer,
UNIDO, Hanoi.

UNIDO

Dr.B Sugavanam,
Chief, Agro Chemical Industries Unit,
UNIDO, Vienna.

Dr.S P Dhua,
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OTHER AGENCIES

Mr.Alan Browning,
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DATA COLLECTION EXPERT

Dr.Y P Ramdev

COUNTRY DELEGATES

Mr.Muhammad Abdus Sattar,
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Mr.Hong Chuanyi,
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Mr.P C Rawal,
Joint Secretary (Chemical),
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Mr.Agus Wahyudi,
Directorate of Basic Chemical Industry,
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Mr.Young Koo Kim,
Director,
Pesticide Development Division,
National Agri. Science & Technology Institute,
Rural Development Administration,
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Dr (Mrs.) R B Pradhan,
Director-General,
Deptt. of Agriculture,
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Dr. Umar Khan Baloch,
Deputy Director General,
Pakistan Agri. Research Council,
PO Box 1081, Islamabad, Pakistan.

Dr. Sathorn Sirisingh,
Deptt. of Agriculture,
Chatuchak, Bangkok, Thailand.

Prof. Dr. Ha Minh Trung,
Deputy Director,
National Institute of Plant Protection,
Chem-Tuliem,
Hanoi, Vietnam.

**TRIPARTITE REVIEW AND THE PROJECT MANAGEMENT COMMITTEE
MEETING OF THE REGIONAL NETWORK ON SAFE PESTICIDE PRODUCTION AND INFORMATION FOR THE ASIA AND THE PACIFIC
RAS/93/061**

Venue : National Institute of Plant Protection,
Chem-Tuliem, Hanoi, Vietnam

AGENDA

4th December 1995 (Monday)

- | | |
|-----------------|---|
| 0930 - 1030 hrs | Opening Session |
| | Tripartite Review Meeting |
| 1030 - 1100 hrs | Tea/Coffee break |
| 1100 - 1115 hrs | Adaption of the Agenda |
| 1115 - 1230 hrs | Reports of the National Coordinators of Bangladesh, P.R. China, India, Indonesia, Iran, Malaysia, Myanmar, Nepal & Pakistan |
| 1330 - 1530 hrs | Continuation of report presentation by National Coordinators, The Philippines, Rep. of Korea, Sri Lanka, Thailand and Vietnam |
| 1530 - 1600 | Tea/ Coffee break |
| 1600 - 1700 hrs | Reports from Agencies |
| 1700 - 1800 hrs | Report on programme of Data Collection System |

5th Dec. 1995 (Tuesday)

- | | |
|-----------------|---|
| 0930 - 1030 hrs | Discussion on activities of the RENPAP and support to be extended to the FARM programme in People's Republic of China, India, Indonesia, Nepal, Philippines, Sri Lanka, Thailand and Vietnam. |
| 1030 - 1230 | Activities of the Technical Coordinator Units |
| | * Peoples Republic of China - Bio-pesticide Development |
| | * India - Environment and User Friendly Pesticide Formulation |
| | Technology Development / Quality Control |

* Islamic Republic of Iran - Prospecting of Raw Materials

* Indonesia - Environmental Protection through Effluent

Treatment / Waste Disposal / Pollution Control.

* Tea / Coffee break

* Malaysia - User Friendly Pesticide Application Technology

* Philippines - Industrial Hygiene and Occupational Health Safety

* Republic of Korea - Control of hazardous impurities in the
technical grade materials

* Thailand - Development of Environment Friendly Botanical
Pesticides

1230 - 1330 hrs Lunch

1330 - 1530 Status of pesticide production and information in Vietnam - A
Pesticide Industry Presentation.

6th December 1995 (Wednesday)

0930 - 1230 hrs Commitment from the member countries towards effective imple-
mentation of the activities

* Training programmes

* Study tours / Fellowship training

* Consultant requirements

* Participation in meetings

* Consultations / communications between National Coordinator /
Regional Coordinator

Support from UN Agencies

Finalisation of the Workplan and project revision

Other business

1230 - 1600 hrs Lunch

1600 - 1700 hrs Recommendation - Adaption of the Report

1700 - 1730 hrs Closing

**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
Application Technology*	Sep. 93	Malaysia	Applica- tion Technol.	1 m/m 1995	CIPAC/IUPAC CIPAC/IUPAC CIPAC CIPAC ● CIPAC	France 1993	Afghanistan	Residue Analysis, Quality**
	Sept. 1996	Malaysia				USA 1994		
Safe Use of Pesticides	1996 (FAO)	India (Hyd)				1995 Cyprus	Bangladesh	
	1996	Philippines				1996 China 1997		
Workshop on User and Envi- ronment Friendly IPM Com- patible Pesticide Formulation and Quality Control	Feb. 1995	India			PMC Meetings	India 1993	China	
	Feb 1997	India				China 1994		
							Vietnam 1995	India
Workshop on Eco-toxicology	5 days 27-31/3/94	Pakistan	Eco- Toxicology	1 m/m Thailand 1995			Indonesia	
	March 1997	Pakistan						Iran
Workshop on Pesticide Data Collection Systems	6 days 5- 10 Sept 94	Thailand					Malaysia	
Workshop on Upgrading of Laboratory Facilities for monitoring pollutant in air, soil and water	15 May 1996	South Korea					Myanmar	
		South Korea						
Workshop on Occupational Safety and Industrial Hygiene	6 days 5-9/12/94	Philippines	Pesticide Poisoning	1 m/m 1994			Nepal	

* Delegates from Philippines and Vietnam would stay on for two more weeks for indepth training

** Training will be provided by Pakistan / Thailand

■ Activities carried out in 1993-95.

● Cost to be borne by the participants

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
Workshop on Safe Disposal of Pesticide Waste and Safe Management of Effluents	July 1996	Indonesia	Waste Disposal	1 m/m each 1996 & 1997			Pakistan	
	1997	Indonesia					Philippines	
Bio-Botanical Pesticides	6 days 1-3/9/1994	Thailand	Bio-bo- tanicals	1 m/m 1994			Sri Lanka	
	1997	Thailand						
*** Biopesticides	10 days 31 Oct - 9 Nov 1995	China	Pest Control Operations	1 m/m (Sri lanka)			Thailand	
			Disposal of Pesticides ****	1.5 m/m 1996 Sri lanka Philippine Pakistan			Vietnam	

*** Travel costs will be borne by member countries, no training fees, DSA paid by RENPAP

**** Consultant would be recruited for CPR/91/121 and serves all the three countries in Sept 1996 besides P.R. China