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21013

44P  
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DP/ID/SER.A/1714  
1 March 1995  
ORIGINAL: ENGLISH

REGIONAL NETWORK ON SAFE PESTICIDES PRODUCTION AND INFORMATION FOR  
ASIA AND THE PACIFIC (RENAPAP) - A SUB-PROGRAMME OF  
FARMER CENTERED AGRICULTURAL RESOURCES MANAGEMENT (FARM) PROGRAMME

DP/RAS/93/061

Technical report: Tripartite review meeting and project management committee  
meeting, Nantong, People's Republic of China from 27-29 October 1994\*

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 Hong Chunayi, Chairman,  
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Vienna

\* This document has not been edited.

V.95-51208

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## **1.0 INTRODUCTION**

- 1.1** The second meeting of the Project Management Committee of the Regional Network on Safe Pesticides Production and Information for Asia and the Pacific (RENAP) - RAS/93/061 a sub-programme of the Farmer Centered Agricultural Resource Management (FARM) Programme along with the first Tripartite Review Meeting was held at Nantong, People's Republic of China on the 27th, 28th and 29th of October, 1994. The main purpose of this meeting was to review the progress of activities in a Tripartite meeting and at the same time plan for the activities for the rest of the programme duration with detailed programming for the year 1995.
- 1.2** The PMC paid special attention to the integration of activities of this Sub-Programme with the other six Sub-programmes of the Farmer Centered Agricultural Resource Management (FARM) programme.
- 1.3** The representative each from People's Republic of China, Indonesia, India, Iran, Malaysia, Nepal, Republic of Korea, Pakistan, Philippines, Thailand and Vietnam and representatives of the United Nations Organisations including United Nations Development Programme (UNDP), United Nations Industrial Development Organisation (UNIDO), Food and Agricultural Organisation of the United Nations (FAO) and Economic and Social Commission for Asia and the Pacific (ESCAP) took part in the meetings. The list of participants is attached at Annexure I of the report.
- 1.4** The proceedings of the TPR and the PMC meetings are summarised below:

## **2.0 INAUGURAL SESSION & TRIPARTITE REVIEW MEETING**

- 2.1** The meeting was formally inaugurated by Madam Gu Xiulian, Minister, Ministry of Chemical Industry, Government of People's Republic of China in the presence of Mr. Xu Xinde, Vice Provincial Governor of Jiangsu Province, Mr. Yang Renyuan, Mayor of Nantong City, Mr. Romulo Garcia, Deputy Resident Representative, UNDP, Beijing, Mr. F. M. von Mallinckrodt, Principal Technical Adviser of UNDP Headquarters, New York, Mr. Cheng Yalin, Director General, Deptt. of International Cooperation & Foreign Investment Office of the Ministry of Chemical Industry, Mr. Sun Jie, Deputy Director General of CICETE, Mr. AD. Spijkers, Deputy Representative, FAO, Beijing, Senior Industrial Development Officer, UNIDO, Vienna. The Hon'ble Minister extended a warm welcome to the delegates from the member countries of the Network and extended support of her Government for the successful implementation of the activities of the RENAP. She expressed her pleasure over the fact that the meeting was taking place in the newly constructed laboratory and conference building of the Country Programme - Assistance to Pesticide Formulation Tech-

nology which sets a good example of linkage between a Country Programme and a Regional Programme for the overall benefit to all the member countries of the Network. In the honour of the delegates of the member countries, she hosted a lunch meeting immediately after the formal inauguration.

- 2.2 Welcoming the delegates, the Chairman of the meeting, Mr. Sun Jie, Deputy Director General of CICETE expressed strong commitment of his Government for the promotion of the objectives and various activities of the RENPAP programme. He said that holding this meeting at Nantong would give an opportunity to the delegates of the member countries of the Network to see the activities of the country programme and would result in further integration of the activities of the network and the country programme which would be beneficial to both the programmes. He, thereafter, invited Mr. Romulo Garcia, Deputy Resident Representative, UNDP, People's Republic of China to address the meeting.
- 2.3 Mr. Garcia on behalf of UNDP, Beijing commended the back to back organisation of the Tripartite Review and Steering Committee meetings of the National Programme on Sustainable Pest Control and Soil Fertility and that of the RENPAP. He briefed the meeting on the country programme which has been in operation for two years with UNDP input of US\$ 4.3 million, of which one of the sub-programme is focussing on sustainable pest control. He said that since Dr. Friedrich Mumm von Mallinckrodt from UNDP Headquarters and Mr. Rae from PPRR office of UNDP, Delhi would dwell with the substantive issues and UNDP concerns, he would like to focus on the linkages between the Regional Network and the Country Programme in China, especially the pesticide component. He said that three years ago, the country programme was identified as one of the 20-point programmes in the new project cycle of UNDP. He informed that about three years ago the Regional Coordinator of RENPAP was deployed in China who having utilised his wide experience and expertise gained in the Regional Project has been instrumental in the designing and formulation of the Sustainable Pest Control and Soil Fertility Programme for China. Through this novel modality, the UNDP has been successful in developing a country programme through the support of one of its Regional Programmes in which the Network became the major conduit for the technology transfer, training of technical personnel, and selection of laboratory and pilot plant equipments in which the Network's experience on the development of user and environment friendly pesticide product development technologies have been utilised to the greatest advantage of the National programme. He complimented the Regional Coordinator on his role in providing continued guidance and assistance as the Programme Management and Technical Adviser/CTA of the China Country Programme, which has not only strengthened the linkages between the Regional and the National programme but has been instrumental in providing the needed speed for attaining the designated outputs. He commented that there is also a strong personal chemistry between the Regional Coordinator and the National

Programme Director, Dr. Dhua and Mr. Hong Chunayi and this has contributed to the success of the joint efforts. Closing his remarks he said that the collaboration developed by UNDP is indeed strong for both the programmes and is a living proof that a regional and a national programme can mutually benefit from one another; that regional network to be truly successful must extend support to the national efforts. He said that it was indeed very appropriate that both the Regional and Country Programme meetings were held back to back in the splendid new centre for Research & Development at Nantong and wished a successful meeting for achieving the objectives of the programmes.

- 2.4 In his remarks, Dr. Friedrich Mumm von Mallinckrodt, Principal Technical Adviser for Sustainable Agriculture in BPPS, UNDP, New York said that having co-organised and actively participated in the founding meeting of the FARM Programme in 1992 in Jakarta, he was delighted to participate in this important working session of RENPAP. He said that the novelty of this 5-year phase of RENPAP is its connection to FARM and through it to the reality of millions of people producing food for ever growing demands. He said that UNDP has, over the past 10 years, increasingly and directly been requested by programme countries and donors alike, to focus and integrate its activities around the issues of poverty and the environment. Sustainable human development has recently been coined as the paradigm which would allow more equitable evolution of the society, aimed at the poorest of our planet and which would also generate more active concern for resource conservation and regeneration. UNDP wants this approach to guide its thinking and influence its daily programme operations.
- 2.4.1 Coming to the discussion of the next two days, he said that it would surely be preferable if one could do away with pesticides for ecological and health reasons. He said that he is saying this despite or may be just because of the fact that his family is linked to the establishment of one of the main German chemical corporations called Hoechst and which has shown often little sensitivity to concerns of customers and the public. He pointed out that unfortunately, however, the solution is not that simple; pests and diseases do exist and threaten food and fibre production. The brown plant hopper in rice, stem borer in maize and locusts are exemplary for the devastation insects can bring, if unchecked and occurring as a major crop plague. As agriculture has moved from more diversified farming systems to mono-cropping, pests were allowed to target its prey better and to become more lethal. The chemical industry, he said, has followed by manufacturing highly specific substances for the most damaging crop pests and diseases. As pesticide resistance built up, the applied amounts of chemicals did increase upto levels where they become virtually useless and severely toxic with soil and water contamination. He mentioned about the discovery that lesser amounts of chemicals could achieve the same or better results - if combined with advantages of biodiversity in agriculture, crop rotation and inter-cropping - have helped to rethink on plant protection

methods. IPM has been reborn as the concept had existed before in traditional farmer knowledge. The search for biological control and fertility enhancement methods has given hope that synthetic chemicals could be kept at bay and has opened the way for research into biological control substances of botanical origin such as neem and pyrethrum. Examples of Indonesia and Sweden provide evidence that course of events can be altered. Indonesia legislated IPM as the preferred approach and thus cut pesticide use dramatically, and Sweden reduced pesticides in agriculture by 50 per cent within 5 years. In both cases farmers and concerned consumers were in the forefront of change. Good economic sense and environmental concerns made the difference. Sweden, he said, wants to become the first European country in offering the cleanest agricultural produce and eventually reap substantive advantages from an increasingly "greening" European food market.

2.4.2 RENPAP, he commented, seems to be doing an admirable job in bringing ecological concerns into the pesticide debate in the Asia and the Pacific region. Training and communication on this crucial subject gets much attention by the programme which will certainly lead to more caution in research and more sensible production-cum-marketing policies. He said that he considered the programme to be on the right track. He said that he would like to know more about the linkages between FARM programme and the RENPAP as the main purpose of this linkage is to assist the beneficiary level of pesticides at the farm level and its relevance of compatibility in the IPM. He also suggested the meeting to consider proper involvement of national farmers associations and consumer representatives who could convey RENPAP recommendations and practical outputs to the essential beneficiaries namely farmers and the ordinary people i.e. men and women. He emphasised the determination of UNDP in not getting involved in any work or initiative which is related to production activities that are hazardous to the environment and health of human beings. Concluding his remarks, he conveyed the best wishes for this workshop from the UNDP Regional Bureau Director, Mr. Nay Htun, the Chief of the Regional Programme Division, Mr. Sebastian Zacharia, the Deputy Director of BPPS Ms. Sally Timpson and the Acting Director of BPPS/SEED, Mr. Luis Gomez-Echeverri and said that he was looking forward to interesting discussions on a very important and far-reaching subject.

2.5 The UNIDO staff member mentioned that while all well aware of the arguments and the counter arguments about the use of pesticides the underlying fact is that pesticides in the past played and are still playing a key role in the control of vector borne diseases like malaria, plague, filaria, dengue fever etc. and also in the control of pests in agriculture to increase food production especially in the developing countries where about 80% of the world population is living and depend on agriculture for its livelihood.

- 2.5.1 During the 1970s and the 1980s, he mentioned, the world saw a great increase in the use of pesticides especially in the developing countries. In the 1990s all are looking into the ways and means of controlling the use of pesticides, reducing or eliminate risks wherever possible. In this he said, UNIDO is committed to assist the developing countries in promoting low risk/low volume pesticides including, bio and botanical pesticides in support of integrated pest management.
- 2.5.2 During the last 25 years, he highlighted, that there has been a revolutionary change in the pesticide technology in which both newer and highly active pesticides and modern formulation technology are playing a vital role in the volume reduction of pesticides. Quoting an example, he stated that recently Sweden replaced annual use of 1000 tons of MCPA herbicides with less than 2 tones of a new type sulphonyl urea doing the same job if not a better job. Similarly formulation is moving towards replacement of organic solvents with water based formulations and dustless granules. This would save the people and the environment from being exposed to millions and millions of liters of toxic organic aromatic solvents through emulsifiable concentrates. Recently UNIDO, he mentioned, has developed Integrated International Guidelines for Pesticide Formulation in Developing Countries and this coupled with FAO Code of Conduct on Distribution and Use of Pesticides would promote worldwide risk reduction in pesticide development.
- 2.5.3 He mentioned that the China Country programme is linked to many other projects through the Regional Network on Pesticides for Asia and the Pacific (RENAPAP) in that this Centre, once fully operational, will not only assist China to move into using modern technologies but also will assist other countries in the region to move towards low risk/ low volume pesticides in accordance with Chapter 19 of Agenda 21 on Environmentally Sound Management of Toxic Chemicals.
- 2.6 The FAO, Deputy Representative in China drew the attention of the meeting of the fact that Chinese agriculture provides food to over one billion people of which 80% are engaged in agriculture or other rural economic activities. He stated that China faces a number of difficult tasks in feeding its population such as modernising agricultural production, ensuring good nutrition, providing rural employment and protecting the environment. He stated that the total production of foodgrains is expected to cross 500 million tonnes by the year 2000. He mentioned that a target of 400 kg food per capita has been set for the year 2000 although arable land availability is only 0.1 hect. per capita. He highlighted the need of improved technology which will result in higher yields and higher production of grain and the appropriate role of universities and the research institutions in this regard. He emphasised the role of the international community to provide continued support for dissemination of advanced agro-technology to the farmers and said that the FAO would continue to assist the country and the member countries of the FARM



Programme in close association with the Ministry of Agriculture, UNDP and UNIDO.

- 2.7 Mr. Vivek Rae, Assistant Resident Representative, representing the PRR of the RENPAP sub-programme stated that the trade and environment issues are increasingly getting inter-linked and environmental standards hold the prospect for becoming non tariff barriers for exports from developing countries. The relevance of this was highlighted with examples from the Indian situation relating to agro-based produce, spices, essential oils and leather products. In all these cases, he said, that efforts are underway to reduce use of pesticides and shift to eco-friendly practices and chemicals, including experiments with organic farming. Not only is this necessary to respond to requirements of international standards and markets, but he emphasised that this is doubly beneficial since eco-friendly produce fetches higher unit value. The rationale for RENPAP, therefore, he commended is fully consistent with the large perspective of export promotion, value addition and employment generation in developing countries.
- 2.7.1 Within the initiatives under RENPAP, he stressed the importance of moving forward on Neem based pesticides, which have already been commercialised in some countries, including Thailand, Myanmar and the USA. Neem is available abundantly in several countries, particularly India, and has been used traditionally. A stronger thrust by RENPAP on developing and commercialising Neem he said, would not only facilitate utilisation of local resources but also have implications for income and employment generation in Neem growing areas, particularly tribal areas in India.
- 2.7.2 RENPAP, he mentioned, provides an excellent example of the "Programme Approach" in action, with its focus on linkages and synergy between the eight Technical Coordinator Units (TCUs). RENPAP has also aroused donor interest and facilitated resource mobilisation from agencies like DANIDA. The Programme, he said, has played a catalytic and cost effective role in 15 countries of the Asia-Pacific region (half the world's population), he remarked UNDP money, therefore, appears to be well spent.
- 2.7.3 RENPAP, he said, has supported several initiatives through its Technical Coordinator Units (TCU) in areas relating to (i) fixing limits on toxic chemicals in water, soil and air (TCU in Pakistan), (ii) shift from petroleum to water based formulations (TCU in India), (iii) commercialisation of Neem (TCU in Thailand), (iv) dissemination of information regarding Bt (through collaboration with China), (v) promotion of water soluble bags (pesticide bags are sometimes used by farmers to store water!), (vi) development and enforcement of health safety legislation (TCU in Philippines) (vii) development of a database for the Asia-Pacific region (TCU in Thailand and India).

2.7.4 He suggested that RENPAP introduces an element regarding technology watch and technology forecasting, since it is important for developing countries to track and participate in the international innovation process and that this should include access to database regarding patents and other appropriate initiatives.

2.8 Mr. Sun Jie thereafter initiating the TPR review of the sub-programme invited the Regional Coordinator to present the Project Performance Evaluation Report (PPER). The Regional Coordinator while taking up the presentation mentioned that the PPER has been duly reviewed by the UNDP and UNIDO Headquarters and made a comprehensive presentation of all the 11 outputs and sub-outputs. He mentioned that decentralisation of the implementation of the key activities of the project through the Technical Coordinator Units (TCU) set up with significant support of the member countries has ensured stronger involvement of the member countries in the project activities. He said that significant contribution from the member countries is flowing into the various activities of the project through these Technical Coordination Units. He mentioned that some of the TCUs, namely Eco-toxicology unit in Pakistan have received financial support from donor agencies like DANIDA and in the process has got transformed into country projects thereby providing greater support to the RENPAP activities. He drew special attention of the members of the TPR to the fact that all the outputs are sharply found at ensuring safety in production, health of the workers in the factories and the farmers in the field and safety of the environment. Elaborating on the focus of the sub-programme activities he stated that the member countries are being given assistance -

- a) through the Technical Coordinator Unit (TCU) set up in Pakistan working on Eco-Toxicology for harmonising and enforcing limits of toxic wastes in the environment through organisation of workshops and individual training, besides consultancy arrangements;
- b) through the TCU set up in the Philippines working on monitoring mechanism for occupational health safety in pesticide use and production and setting up of standards and enforcing these limits through workshops and individual training, besides consultancy arrangements;
- c) through the TCU set up in Indonesia for the development of technologies for safe disposal of effluent through setting standards and their compliances as well as dissemination of these technologies through workshops, individual training and expert consultancy;
- d) through the TCU set up in India for the development of user and environment friendly water-based pesticide formulation technologies and dissemi-

nation of these technologies through organisation of workshops, individual training, expert consultancy etc.

- e) through the TCU set up in Thailand for the development and production of environment - friendly botanical and bio-pesticides through organisation of workshops, individual training and expert consultancy;
- f) through the TCU set up in Malaysia for safe application of crop protection agents through workshops, individual training and expert consultancy;

2.8.1 With the support of these TCUs, the sub-programme is striving to achieve -

- a) environmental protection through harmonisation and enforcement of limits of toxic wastes emanating from the production and use of pesticides;
- b) reduction/ elimination of hazardous pesticides and their wastes;
- c) production of low risk, user and environment friendly IPM compatible pesticides and their formulations;
- d) popularisation of safe handling and application technologies;
- e) disposal of hazardous pesticides;
- f) choosing clean technologies for the development of safe crop protection agents;
- g) commercialisation of production of botanical and biological pesticides for large scale application in support of the IPM programme.

2.8.2 He drew special attention of Dr. Mallinckrodt to the above facts and assured that this project is dedicated totally towards reducing and containing pesticides which are hazardous to the environment and to the health of the human beings and therefore, is addressing the concerns of UNDP squarely on the issue. He referred to the statement of the UNDP representative China and said that the TCDC concept has been harnessed in the RENPAP and he as the Regional Coordinator of the project has succeeded in developing the country programme in China - Sustainable Pest Control and Soil Fertility Programme - CPR/91/120 and at the instance of the Govt. of China and UNDP China is serving as the Programme Management and Technical Adviser for ensuring transfer of technology within the region and utilising the RENPAP as the conduit for this purpose. The RENPAP in turn is receiving payments for the services being rendered by the Regional Coordinator to the Programme in China. He said that as a sub-programme of the FARM programme

the outputs are now being funnelled into the field through the joint demonstration being organised under the FARM programme besides serving the basic objectives of providing safer, user and environment friendly pesticides including bio-pesticides and neem-based botanical pesticides to the member countries.

2.8.3 He also mentioned about the role the Regional Coordinator is playing in the implementation of the activities of the seven sub-programmes of the FARM programme in India in accordance with the decision taken in the first planning meeting of the FARM programme CTAs and also in the first meeting of the Country Coordination Committee. He also explained the modalities of integration of the seven sub-programmes in three field demonstration units organised in India.

2.8.4 The Chairman, summing up the proceedings stated that the project activities being implemented in collaboration with UNDP/UNIDO are making significant contribution towards promoting sustainable human development in the member countries of the region. The PPER thereafter was adopted by the TPR 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 Mr. Hong Chuanyi from China was elected Chairperson, Dr. Sathron Sirisinghi from Thailand as Rapporteur and Mr. Fransisco Cornejo was elected as Secretary of the meeting.

### **5.0 STATEMENT OF THE NATIONAL COORDINATORS**

The country reports presented by the National Coordinators / designated officials are summarised below:

#### **5.1 CHINA**

5.1.1 The country paper for China was presented by the National Coordinator Mr. Hong Chuanyi. He said that China is a big developing and agricultural based country with the world's largest population and accounts for one fourth of the world population with 7% of the world arable land. Out of the total area of China is 960 M Ha. 105 M Ha is being used as farm land. China produces Rice on 23 M Ha, Wheat on 29 M Ha, Maize, Cereal, Sorghum on 32 M Ha besides other crops.

5.1.2 He stated that China is a major producer and user of pesticides. The pesticide industry in China has developed fast in recent years with an annual pesticide output of 220,000 tons of active ingredients. The various products manufactured in China includes Insecticides, Miticides, Herbicides, Fungicides and Rodenticides. The proportion of pesticides produced and used in China in 1993 has been as under:

1.	Insecticides (including Miticide)	62%
2.	Herbicides	15%
3.	Fungicides	14%
4.	Other (Plant Growth Regulator and Rodenticide etc.)	9%

5.1.3 He stated that during the 8th Five Year Plan period the main thrust has been given for the growth of more safe and effective pesticides and move away from conventional unsafe pesticide formulations. In this context, the setting up of the pesticide formulation project at Nantong with UNDP assistance is of considerable importance to the pesticide formulation industry in China as the technologies for the production of user and environment friendly varieties of pesticide formulations would be available from this Centre.

5.1.4 He also extended his facilities for organising training and workshops at this centre for the benefit of the member countries of the network.

5.1.5 The PMC complimented Mr. Hong Chuanyi for his very dynamic leadership in establishing the Pesticide Formulation Development Project and linking it with the various activities of the RENPAP. PMC further felt that this collaboration is a good example of mutual benefits that could be derived through properly linking the network project with the country project.

## 5.2 INDIA

5.2.1 The country paper for India was presented by National Coordinator, Mr. Vinay Kohli. He informed the updated position about the pesticide industry in India and asserted that India by and large is self sufficient in pesticides manufacturing including both technical material as well as formulation. The total production exceeded 80,000 tonnes. There are more than 600 pesticide formulation units all over the country to produce varieties of pesticide formulation and more than 60 formulations are available including both old and new generation pesticides.

5.2.2 He said that the Institute of Pesticide Formulation Technology (IPFT), a Govt. of India Society which is also the Technical Coordinator Unit on Pesticide Formulation

tion Technology and Quality Control for RENPAP, is conducting training programme to upgrade skill of the workers in the field of Pesticide Formulation Technology and Quality Control.

- 5.2.3 He stated that no regional training programme has been organised since the last PMC meeting. Only indepth fellowship training has been provided by IPFT to two scientists from China and two scientists from Iran during the year.
- 5.2.4 With the introduction of FARM programme and its integration with RENPAP he mentioned that the work of pesticide formulation has begun focussing on field realities more sharply. This together with the support, the Institute of Pesticide Formulation Technology has been receiving from the pesticide industry has demonstrated that safety and efficacy concerns to which industry also shares.
- 5.2.5 He said that Pesticide Formulation work in the Institute is now a fully commercial activity and industry is increasingly using and paying for the resources available.
- 5.2.6 He stated that India participated in all the workshop e.g.
1. workshop on Pesticide Application Technology in Malaysia
  2. workshop on Ecotoxicology in Pakistan
  3. workshop on Bio-Botanical Pesticides in Thailand
  4. workshop on Pesticide Data Collection System in Thailand

and India continued to benefit from the regional approach implicit in the RENPAP initiative. The Govt of India is fully committed to further strengthening the ties that have emerged and will make all appropriate contribution in furthering the goals of improving South South Cooperation.

- 5.2.7 The PMC appreciated the strong commitment and support extended by the Govt. of India through hosting the RENPAP Secretariat and significant contributions being made for its efficient functioning.

### 5.3 INDONESIA

- 5.3.1 The country paper from Indonesia was presented by the Govt nominee Ms. Bati Lestari. She said that with the availability of infrastructure facilities and expertise, Govt of Indonesia through its Technical Coordinator Unit on Waste Disposal and Effluent Control would host a workshop as per the workplan formalised in the last PMC meeting in New Delhi. She stated that RENPAP along with the other six sub-programme of the Farmer Centered Agricultural Resource Management Pro-

gramme, would be implemented by Govt. of Indonesia through the following agencies / institutions.

1. Directorate of Basic Chemical Industry - Pesticide Production and Information.
2. Central Research Institute for Food Crops - Rainfed FARM System
3. Directorate for Soil Conservation - Watershed Management
4. Forest Research Development Centre - Agroforestry
5. Integration Team of Integrated Pest Management - Integrated Pest Management.
6. Research Centre for Biotechnology - Biotechnology
7. Self Sufficient Foundations - Peoples Centre Sustainable Developing

5.3.2 She also mentioned about the planned integration of activities between focal points of the seven sub-programmes and of an informal Country Coordination Committee meeting organised by the UNDP representative which discussed amongst others the question of Govt. of Indonesia's endorsement of the FARM programme and the designation of a coordinator who would lead the Country Coordination Committee.

5.3.3 She also presented the proposed budget of the Technical Coordinator Unit and for hosting the workshop on Safe Disposal and Safe Management of Effluent along with the agenda of the workshop scheduled from the 10th through 14th July 1995. She mentioned that this is subject to the endorsement of the FARM programme and their proposal for the workshop by the Government of Indonesia.

5.3.4 The PMC recognised the strong support being extended by the Government of Indonesia through the Technical Coordinator Unit for enabling the RENPAP to further its objectives.

#### 5.4 IRAN

5.4.1 The country paper on Iran was presented by Mr. Mohammad Hossein Sharifi Yazedi, National Coordinator. He mentioned that Iran joined RENPAP in 1991 and initially the National Coordinator unit was with the National Petrochemical Corporation; this was transferred to Fertilizer Distribution and Pesticide Production Company which, amongst other activities, is involved in the production of all types of pesticides. He said that RENPAP has been playing an important role in the safe production and use of pesticides and his organisation would like to extend full facilities for furthering the objectives of the RENPAP. He stated that he is making special efforts to strengthen the RENPAP activities in Iran and in this regard the

laboratories have been upgraded, staff placed and field facilities created for hosting the TCU on Pesticide Raw Material Prospecting. He stated that Iran has participated in all the activities including the "hands-on" training on computers for the Data Collection Programme. He stated that two nominees of his Government have been given indepth training in India and Thailand and that this was found to be very useful.

5.4.2 The PMC appreciated the dynamic role being played by Mr. Yazedi in organising the RENPAP activities in Iran and assured him of all possible support to strengthen the programme in Iran.

## 5.5 MALAYSIA

5.5.1 The country paper was presented by the National Coordinator, Ms. Muhammad. She stressed that Malaysia continued to participate actively in all the activities of RENPAP and were benefitted from the various programmes.

5.5.2 She gave a brief summary of the progress of implementation of the project activities. She said that Govt. of Malaysia participated in all group training programme viz.

1. Workshop on Application Technology in Malaysia
2. Workshop on Ecotoxicology, Pakistan
3. Workshop on Bio-Botanical Pesticide Development in Thailand
4. Workshop one Pesticide Data Collection Systems in Thailand

These workshops have provided oportunities to familiarise their expert nominees with (a) computer software for data collection (b) latest technological developments in the use of eco-toxicological studies as a tool to safeguard the environment particularly in view of increasing evidence of deterioration and indiscriminate introduction of chemicals in the environment.

5.5.3 Regarding the workshop on Bio-botanical pesticide development, the National Coordinator stated that this workshop has provided an opportunity for member countries to appraise themselves on the latest developments in biopesticides and botanical pesticides. She suggested that the development of protocols on the technique for Quality Control and Efficacy Evaluation of Neem based and Bt products should be carried out as soon as possible and desired. RENPAP to provide guidelines on the registration requirements for Neem based and Bt pesticides.



5.5.4 She said that their TCU has received a set of computer under this project and the entry of required pesticide data is being carried out using the software provided and that the work will be completed by the end of the year.

#### 5.5.5 **Poposal for Future Activities**

1. TCU for Pesticide Application Technology - The TCU proposes to host another workshop on Pesticide Application Technology in Kula Lumpur, Malaysia in Sept. 1995.
2. Govt. of Malaysia is willing to extend 1 man month attachment training programme in Pesticide Formulation Analysis to chemists working in Public Sector companies of the member countries in 1995. She pointed out that DSA/TA for the participants would have to be borne by the participants or sponsor and that the training would be provided free of training fees.
3. Fellowship Training
  - \* The National Coordinator suggested that the following programme may be organised by RENPAP in 1995.
  - \* Course on risk assessment of chemicals with emphasis on eco-toxicology.
  - \* Workshop on upgrading of laboratory facilities for Monitoring Pollutants in Air, Solid and water.
  - \* Training course in the field of Bt, bioassy.

5.5.6 The PMC appreciated the excellent workshop on Pesticide Application Technology organised by the TCU in September 1993 and the indepth training provided to the delegate from Sri Lanka free of cost. The PMC also appreciated the offer of hosting a second workshop on Pesticide Application Technology in September 1995 and also the offer of 1 man month training in Pesticide Formulation Analysis to analysts of any member country of RENPAP during 1995.

#### 5.6 **NEPAL**

5.6.1 The country paper was presented by Govt. nominee Mr. R.S.L. Karna, Nepal. He said that Nepal has benefitted from the group training programme after joining the RENPAP in Oct. 1993. He mentioned that Nepal participated in all the workshops organised by RENPAP.

- i) **Workshop on Ecotoxicology** - Dr. Bhim Sen K.C. Chief Plant Protection Officer and Dr. B. Pradhan Director (Plant Protection) took part in the workshop on Ecotoxicology in Islamabad, Pakistan.
- ii) **Expert Group Meeting on Policy Issue in the Region on Bio and Neem based Pesticide Development in Thailand** : Dr. Bhim Sen K.C. participated in the expert group meeting.
- iii) **Workshop on Pesticide Data Collection Thailand** - Mr. Babu Ram Shrestha of the Division of Plant Protection, Nepal participated in this training programme.

5.6.2 He said that NEPAL has given priority to Integrated Pest Management (light trap, hormonal trap, spacing, cultural practices, interculture, etc.) and allows only friendly pesticides to be imported from abroad. Research work on Bio and Botanical pesticide is in progress as Nepal is rich in natural flora and fauna. He stated that the legislation for the enforcement of the Pesticide Act 1992 and Rule 1994 is in process for ensuring occupational safety and Industrial Hygiene. Disposal of discarded and out dated pesticides and pesticide containers is nearly completed in Nepal.

5.6.3 He requested RENPAP for assistance for training on :

- (i) **Pesticide Data Collection System**
- (ii) **upgrading laboratory facilities for analysing adulterated pesticides and**
- (iii) **monitoring pollutants in air and water.**

## 5.7 **REPUBLIC OF KOREA**

5.7.1 The country paper was presented by the National Coordinator, Mr. Young Koo Kim. He said that Republic of Korea participated in all the group training programmes organised by RENPAP and are very much benefitted and the knowledge gained have been put to practice.

### 5.7.2 **Workshop on Ecotoxicology in Pakistan**

Two delegates participated in the Workshop. The acquired guidelines for the evaluation schemes of pesticides eco-toxicity are being put to practice to strengthen the Korea GLP system.

### **5.7.3 Expert Group Meeting on Bio-pesticides Development in Thailand**

Dr. Yong Cheol Choi from ACRI participated in the Expert Group Meeting. The meeting has helped in consolidation on research direction in botanical pesticides development. Some active ingredients have been isolated and purified from native plant species and modification studies are being also undertaken to enhance their biological activity by means of chemical derivatization.

### **5.7.4 Workshop on Pesticide Data Collection System in Thailand**

Mr. Young Youl Oh, attended the workshop. Upon returning from the workshop, the data base software Foxpro, was installed in HP CPU 486 personal computer without difficulty. All the data collected by the expert so far are mainly related to the total value in production, consumption import and export. Therefore, entire data entry will take some more time.

### **5.7.5 Proposal for Future Activities.**

He proposed the following activities.

#### **Organisation of Workshop**

The TCU proposed to host a Workshop on monitoring schemes of pesticides in the environment, soil and water. He said that ACRI would provide laboratory space facilities as well as instrument to implement the workshop.

#### **Required Consultancy**

1. Biopesticide formulation technology of microbial or botanical active ingredients
2. Evaluation method and scheme on benefit/risk assessment.

#### **Study Tour**

1. Current status of formulation technologies in microbial pesticides using bio-degradable natural polymers.
2. Biological disposal methods of discarded pesticides in the environment.

5.7.6 The PMC appreciated the strong commitment of the Govt. of Republic of Korea in support of the various activities of the RENPAP and to enable it to achieve its objectives.

## 5.8 PHILIPPINES

5.8.1 The country paper was presented by the National Coordinator Mr. Francisco C. Cornejo. He said that Philippines has participated in all the training programmes organised by RENPAP and has been benefitted.

5.8.2 Workshop on Application Technology : The delegate participated in the Workshop, expressed his remarkable appreciation of the value of appropriate application technologies to address misuse of pesticides at the field level, thus maximising the benefits to be derived from its application while reducing the minimum hazards associated with such use.

5.8.3 Workshop on Ecotoxicology in Pakistan. The workshop was attended by the National Coordinator. This programme has provided him with adequate information and indepth perspective of the importance of their regulatory functions which encouraged him to organise a national workshop on pesticides in coordination with the Canadian International Development Agency. He expressed his appreciation regarding RENPAP/UNIDO assistance by way of providing Fertilizer and Pesticide Agency ((FPA) Philippines with a Consultant from South Korea Mr. Young Kwa Kim.

### 5.8.4 Expert Group Meeting on Bio-Botanical Pesticides in Thailand

The Expert Group Meeting was very timely for the Philippines as more issues concerning availability of these types of pesticides surfaced with the govts. pronouncement in 1986 which made IPM as the national crop protection policy of the country. The forum provided a rare opportunity for representatives of member countries in region to be updated on the status of production, availability and regulation of these inputs. He stated that Govt. of Philippines is convening a National Wrokshop to involve researchers, Industry and relevant Govt. agencies in Jan. 1995 to discuss workshop recommendation and on this basis come up with a national action plan on the subject.

### 5.8.5 Regional Workshop on Data Collection System in Thailand

Two delegates from Philippines participated in the ESCAP meeting on the Data base on pesticides and the environment and RENPAP; two days workshop on the data base primarily focussing on economic data on pesticides. The two programmes

contributed to the structuring of FPAs information for policy formulation and implementation. The meeting provided FPA with an opportunity to discuss with coparticipants and organisers its limitations as far as data collection is concerned and problems associated with the current restructuring of FPAs information base to facilitate effective storage and retrieval of information.

### **5.8.6 Future Activity**

#### **Group Training**

TCU on Occupational Safety and Industrial Hygiene will host a 5 days workshop for the Network member countries on this subject with Dr. Nelia Maramba serving as an International Consultant on Occupational Health for the said workshop, thus providing more opportunity to advance the cause of occupational health and safety among countries in the region.

The National Coordinator emphasised the need for participation of their nominees in other planned activities of the project which are as follows:

- a) Workshop on Safe Disposal of Pesticides Waste and Safe Management of Effluent in Indonesia.
- b) Workshop on upgrading of laboratory facilities for monitoring pollutants in air, soil and water in Rep. of Korea.
- c) Workshop on user and environment friendly IPM compatible pesticide formulation and quality control in India.

### **5.8.7 Subprogramme of FARM programme**

National Coordinator said that the objectives of the sub-programme i.e. RENPAP of the well rounded Farmer Centered Agricultural Resource Management (FARM) programme are very much in keeping with their national goal to promote sustainable development. He also said that the subprogrammes of FARM programme i.e. watershed management agro-forestry farming system in rained areas, peoples centered sustainable development plant, bio-technology and bio-diversity and IPM are all coordinated by one agency, thus ensuring an integrated approach towards attaining the goals of the FARM Programme at the national level.

The PMC appreciated the strong support being extended by the Govt. of Philippines through Fertilizer and Pesticide Authority for the implementation of the various

activities of RENPAP under the dynamic leadership of Mr. Francisco C Cornejo, National Coordinator.

## **5.9 PAKISTAN**

- 5.9.1 The country paper was presented by the National Coordinator Dr. Umar Khan Baloch. He said that Pakistan has been participating in all the activities of the Regional Network on Pesticides and are very much benefitted by these participations of their senior officials.
- 5.9.2 He highlighted the basic problems that Pakistan, like most neighbouring countries, is faced with high population (120 millions), environment degradation, illiteracy, low per capita income/ poverty and natural disaster particularly flood and pests outbreaks. The economy of Pakistan is based on agriculture and is thus highly risk oriented. To meet the food requirement, use of modern agriculture technology application including use of agrochemicals (fertilizers and pesticides) in irrigated agriculture is inevitable.
- 5.9.3 He said that pesticides use since creation / independence of Pakistan in 1947 to 1980 was in public sector and was restricted. In 1980 the responsibility for import, manufacture, formulation and marketing was entrusted to private sector/ industry. The aggressive marketing by industry increased the volume of pesticide use by 14 times at US \$ 200 million in 10 years. It is estimated that the use of pesticides in Pakistan will grow at rate of 10% annually.
- 5.9.4 He mentioned that in Pakistan, insecticides constitute about 80% of total pesticide used and 65% of this is consumed for pest control in cotton alone. Although the average use of pesticides per hectare is low compared to developed countries, yet it is indiscriminate / irrational because most of the farmers are ignorant of adverse effects of pesticides.
- 5.9.5 He said that Pakistan is in the process of establishing an Ecotoxicology Research Centre with UNIDO/DANIDA financial assistance. These facilities will be open to RENPAP countries for technical assistance and training. The centre has already organised a workshop on Ecotoxicology in March 1994 for the regional countries. He stressed that Pakistan strongly supports RENPAP organising activities in safer application and post application of pesticides and in monitoring ecotoxicological effects for environmental conservation contributing to global sustainability and poverty alleviation.
- 5.9.6 He said that Pakistan would like to offer to host the next Ecotoxicology workshop in March 1996 and the PMC meeting in the same year or in 1997.

5.9.7 The PMC was very much appreciative of the excellent organisation of the Eco-toxicology Workshop in Pakistan and in the establishment of the Eco-toxicology Research Centre with UNIDO/DANIDA assistance and the important role played by Dr. Baloch as National Coordinator in this regard.

## 5.10 THAILAND

5.10.1 The country paper was presented by the National Coordinator Dr. Sathorn Sirisingh. He gave a summary of the project activities implemented following the decisions of the last PMC meeting in New Delhi, India.

### 5.10.2 Individual Indepth Fellowship Training

Govt. of Thailand provided indepth training in pesticide residue analysis to two participants from Iran for one man-month each in the Division of Agriculture Toxic Substance, Dept of Agriculture, Thailand.

### 5.10.3 Group Training

The Expert Group Meeting on Policy Issues for Bio and Neem Based Pesticides Development organised by RENPAP/ UNIDO was hosted by Dept. of Agriculture, Thailand. The National coordinator gave salient features of Bio-Neem based Pesticide Development work already done in Thailand.

#### (a) Bt Production

The model plant for Bt production has been constructed in Chiang Mai with one fermenter of capacity 350 l/batch. Another fermenter of capacity 600 l/level is planned to be installed.

#### (b) NPV Production

Govt. of Thailand is producing NPV for controlling *Heliothis armigera* and *Spodoptera exigua*. These two species are resistant to almost all synthetic pesticides. NPV seems to be very effective but the present production is far below the requirements.

#### (c) Neem Extract Production

The construction of a model plant for neem extract is complete. The plant can produce about 10,000 litre annually with 1% Azadirachtin.

#### **5.10.4 Data Collection System**

He said Thailand, as the regional data centre, has already received pesticide economic data from Indonesia, Malaysia and the Philippines and sent to Central Coordinating Unit in India. Workshop on Pesticide Data Collection System was organised by TCU in Bangkok, Thailand.

#### **5.10.5 Future activities**

He proposed the following activities to be implemented in future:

##### **Group Training for the RENPAP**

- i) TCU for Bio and Neem based Pesticide Development will continue to organise training programmes/ workshops on both bio(Bt.) and neem based pesticide development for the RENPAP member countries with the support and cooperation from UNIDO/RENPAP.

##### **Consultancy requirements**

- a) Bio pesticide formulation
- b) Registration of bio-botanical pesticide.

##### **Fellowship training requirements**

- a) Formulation of Biological and Botanical pesticides.
- b) Waste Disposal
- c) Risk assessment of chemicals.

5.10.6 He mentioned that Govt. of Thailand has emphasized on the policy for the reduction in the use of pesticides and promotion of bio and neem based pesticides as a very important component of IPM and US \$ 1.6 million budget was granted for this policy.

5.10.7 The PMC complemented Dr. Sathron Sirisingh for hosting the successful workshop on Bio-Botanical Pesticides as well as for organising indepth training programmes for the Vietnamese and Iranian fellows.



## 5.11 VIETNAM

5.11.1 The country paper was presented by National Coordinator, Mr. Tran Quang Hung. The National Coordinator said that pesticide are widely used in Vietnam. The annual use of pesticides estimated in terms of US\$ is about 30-35 millions. The relative use are:

Insecticides	50-60%
Fungicides	20-30%
Herbicides and Others	5-10%

5.11.2 He mentioned that most of raw materials (about 80-90% TG) are imported and domestically formulated in EC, WP, dust and granules products. Besides Chemical compounds, some biological and botanical insecticides are being used to control pests on vegetables which is about 2-5% of the total insecticides used in the country. Vietnam, he said, has installed new capacities for pesticide formulation. He said that 50% of the pesticide formulation plants are of medium scale and the rest are insufficiently equipped. He said that formulation, rebottling and repacking play an important role in Vietnam. The statutory authority in Vietnam pays great attention on industrial safety for workers and environment and occupational health control of workers, safety, effluent treatment, and disposal, pollution control, etc. He suggested for

- (1) the continuation of formulation re-bottling and repacking equipment to raise the capacity and preventing the sub-standard products and enforcing more safety for the workers and environment.
- (2) continuation of the training programme for workers in formulation, rebottling and repacking technology.
- (3) more assistance from UNIDO/UNDP project RAS/93/061.

The PMC offered to assist Vietnam in the areas suggested by the National Coordinator and appreciated the strong participation of Vietnam in the various programmes of the RENPAP.

## **6.0 REPORTS FROM THE UN AGENCIES**

### **6.1 Statement from Economic and Social Commission for Asia and the Pacific (ESCAP).**

**6.1.1 Mr. Edgar T. Dante presented activities of ESCAP in the field of pesticide. He said that ESCAP through its pesticide and environment programme (formerly the Agricultural Requisites Scheme for Asia and the Pacific (ARSAP) has been associated with pesticide safety activities for more than 15 years and with RENPAP since 1983. ESCAP's "Pesticide and the Environment" programme had concentrated on pesticide use training and a substantial part of the effort went into the preparation of training materials. Through the support of the French Government, he said, ESCAP was able to bring out several versions of pesticide index for Asia and the Pacific which contains information on commercial products.**

**6.1.2 Two years ago (September 1992) he said, ESCAP embarked into the development of the Database on "Pesticides and the Environment" which was completed in July 1994. The database contains a vast library of information on various aspects of pesticides use and effects on human and animal health, and the environment. It is a compact reference tool for organizations responsible for pesticide registration and control, as well as departments of agriculture, human and animal poisoning centres, and environmental monitoring and protection agencies. He informed that twenty one institutions in the ASEAN countries (Brunei Darussalam, Indonesia, Singapore, the Philippines, and Thailand) together with five scientific institutions in Europe have actively participated in the development of this database.**

**6.1.3 He referred to the recent Workshop held to evaluate the implementation of the project and structure and contents of the database programme, and the recommendations made for future development of the project. He said that RENPAP was fully associated with this Workshop with the presence of project management and data collection officers from its 15 member countries. He drew attention to the following Workshop recommendations:**

**6.1.3.1 the Workshop unanimously agreed that the database is of great use for the participants and strongly recommended the continuation of the project.**

**6.1.3.2 the RENPAP databank on pesticide production, import/ export, pesticide use and other pertinent data and the ESCAP/EU Database on pesticides and the environment be linked and made accessible to participating countries of the project.**

**6.1.3.3 in order to better coordinate this linkage, that.. "ESCAP and UNIDO are urged to form before December 1994 a coordinating body responsible for (a) carrying out**

the overall improvement of the database including economic of pesticides, and (b) organizing regular review and verification of data from the participating countries".

- 6.1.4 He said that in this regard, ESCAP has initiated a proposal to set up a coordinating body under the Inter-agency Committee on Industry and Technology which was established in Bangkok recently with ESCAP as its secretariat. The function of the Committee is to monitor UN industrial and technological activities in the ESCAP region and to ensure complementarity in the work and implementation of activities of relevant UN agencies. The activities of the Committee will include the exchange of information on planned studies, meetings and projects, contributions of one agency to the programmes and projects of the other, and joint programmes and projects, including formulation, fund raising and implementation. ESCAP considers this Interagency Committee to be the appropriate authority under which joint activities on pesticides between UNIDO and ESCAP should be developed and carried out.

Based on the above agreement to establish the Inter-agency Committee of Industry and Technology, he felt that cooperation between UNIDO and ESCAP on pesticide information will be intensified and well coordinated for the benefit of the countries.

**6.2 Statement from United Nations Industrial Development Organisation (UNIDO).**

- 6.2.1 UNIDO staff member stated that the preliminary mandate of their organisation is to promote and accelerate industrial development particularly in the developing countries through promoting cooperation at various levels. He made a special mention of the various programmes being launched by the UNIDO particularly in the pesticide sector which are all directed to assist the developing countries in promoting low risk / low volume pesticides including bio and botanical pesticides in support of the integrated pest management. He drew attention of the meeting to the urgent need for worldwide risk reduction in pesticide development by strictly following the integrated international guidelines for pesticide formulation in developing countries coupled with the FAO Code of Conduct on distribution and use of pesticides.

## **7.0 PROGRESS OF WORK OF DATA COLLECTION SYSTEM**

### **7.1 Report from ESCAP**

- 7.1.1** The progress of work for the Database developed in the Asia and the Pacific Region was discussed in details. The Database on pesticides and the environment developed by the ESCAP was presented by Mr. Dante. He stated that the Database on Pesticides and the Environment Programme contains a vast library of information on various aspects of pesticides used in the ASEAN region (Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, and Thailand). The information is provided in the form of a database on pesticides commercial products, product registration information, national pesticide use recommendations, and addresses of pesticide handlers, distributors, government offices, etc. He said that about 552 crops, 2,380 pests, 1031 active ingredients, 7,039 commercial products, and 12,247 pesticide use recommendations are described in the database. Information is also provided in a collection of active ingredient datasheets or factsheets which contain descriptions on chemical properties (physical, biological, etc.), behaviour (mode of action, toxicity, etc.), agricultural uses, registration information, effects on human and animal health, and the environment.
- 7.1.2** He said that the programme not only provides a simple data retrieval system but also allows easy and quick comparison of pesticide recommendations data among the participating countries. The "menu" system is extensively used for easy retrieval of information and printing options are provided in all data screens. The programme can be installed in a standard IBM compatible computer with a hard disk space requirement of approximately 50 Mega Bytes
- 7.1.3** He explained that the data are collected from various sources and in cooperation with different national and international organizations. Five scientific institutions in Europe participated in the project, providing data sheets on the agronomic use of pesticides, effect on human and animal health, and the environment for 350 active ingredients used in the ASEAN countries. These data sheets, he said, were reviewed and verified by the participating countries. He mentioned that UNDP/UNIDO Regional Network on Pesticides for Asia and the Pacific (REN-PAP) contributed registration and commercial information of pesticide products in some of the participating countries. The countries themselves, he said, contributed their national pesticide use recommendations on various applications such as crop protection, post harvest and seed treatment, invasions control, public health, animal health, and plant growth regulators. In addition, he said, active ingredient data sheets from various sources such as EPA (Environmental Protection Agency, USA) WHO, FAO, RSC (Royal Society of Chemistry, UK) were also included in the database.

- 7.1.4 The programme he said, is expected to benefit pesticide regulatory authorities, poison control centres for humans and animals, environmental protection agencies, and other organizations concerned with the safe use and management of pesticides. He mentioned that it also can serve as a reference database for various specialists including agronomists, health and safety professionals, hazardous material teams, environmental experts, toxicologists, occupational medical personnel, etc.
- 7.1.5 He mentioned that this programme has been developed through the project "Database on Pesticides and the Environment" funded by the Commission of the European Union (Project B9302-11/90) and implemented by the Agricultural Requisites Scheme for Asia and the Pacific (ARSAP), Rural Development Section, Rural and Urban Development Division of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in collaboration with the Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), France.

## **7.2 Report from Regional Coordinator, RENPAP**

- 7.2.1 The Regional Coordinator thereafter presented the work done by the RENPAP for maintaining and building further its database with the financial support of the Govt. of France. He mentioned that the data base has been established in the Regional Database Centres (RDC) in Delhi and Bangkok which are providing technical support to the member countries. He stated that the index data collection and entry work has been completed for two countries namely India and Thailand and for the economic data collection, work has been started. The appointment of data collection experts in the member countries have been completed excepting for Afghanistan and IBM PS2 computers with printers and softwares have been provided to all member countries excepting Afghanistan, Nepal and Myanmar. He stated that a group of experts comprising of Mr. Jourdain of CIRAD and Dr. Y.P. Ramdev and Ms. Chutima, Senior Data Collection Experts have reviewed the data collection activities and made a series of suggestions for speeding up the data collection work. As a followup of the suggestions made by this expert group a workshop on pesticide data collection was organised in Bangkok in the second week of September which was primarily meant to provide hands-on training to the National Data Collection Experts on methodologies of data collection, software installation and its usage in data entry and storage. The experts from all member countries except Afghanistan attended this training programme in which the software programme for Phase I (Index data) and Phase II (Economic data) along with data collection guidelines and software users manual were provided. Also the data collection experts were given hands-on training on computer software installation, usage, data entry processing, storage, etc. The workshop, based on the status of data collection activities,

grouped the member countries into three and recommended appropriate measures to complete the work by December 15, 1994.

- 7.2.2 This group also recommended that travel facilities need to be provided to enable comprehensive collection of the data from grass-root level as some of the producing units are not providing the needed data. The group also proposed for extension of direct assistance from the Regional Database Centres in Delhi and Bangkok depending on the needs to some of the member country in data collection and data entry work.
- 7.2.3 The PMC having appreciated the need for a comprehensive database especially for assisting the member countries to phase out the hazardous pesticides and replacing these with user and environment friendly products as well as for promoting trade and tariff, and also taking note of the availability of hardware, software and trained people, strongly supported strengthening of the data collection activities through providing appropriate support and assistance required by the member countries.
- 7.2.4 In this context the Regional Coordinator mentioned that the Govt. of France supported data collection project would end shortly. He, therefore, proposed that since the requirements for continuing the activities at the present level is relatively small and is confined mainly to the retention of part-time Data Collection Experts nominated by the member countries, appropriate budget provision may be made. The PMC endorsed the views of the Regional Coordinator.

## **8.0 IMPLEMENTATION OF INTERNATIONAL SAFETY GUIDELINES FOR PESTICIDE FORMULATION IN DEVELOPING COUNTRIES**

- 8.1 The UNIDO staff member made a comprehensive presentation tracing the development of pesticides with special reference to safety in production, health and safety to the environment and the relevance of the International Safety guidelines developed by UNIDO through international consultation in Brussels in 1992. The member countries while complimenting development of the safety guidelines by UNIDO recommended its large scale adoption for providing safety at all levels and at all stages of production, health safety and for protecting the environment. The meeting felt that between the UNIDO guidelines and FAO International Code of Conduct on the Distribution and Use of Pesticides, it would be possible to ensure safety at all levels from the production and usage of pesticides.

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

- 9.1 In the absence of Mr. John Dixon, Coordinator, FARM Programme, this subject was taken up by Dr. Von Mallinkcrodt and the Regional Coordinator. To start with, the status of implementation of the FARM programme in the member countries was reviewed. Mr. Kohli mentioned that in India the Country Coordination Committee is fully functional and has held four meetings. He also mentioned that three sites have been selected and FARM demonstrations have been laid down. In these demonstrations all the sub-programmes are participating and providing required inputs to demonstrate the advantages of scientific management for improving overall productivity without endangering the environment. He highlighted the scope of integration of the 7 sub-programmes in view of the experience gained so far at the grassroots level. Mr. Cornejo briefed the meeting about the formation of the Country Coordination Committee and selection of one site for the implementation of the FARM demonstration. Mr. Karna also mentioned that the Country Coordination Committee in Nepal has been formed and the site selection for the farm demonstration is in progress. The meeting also noted the formation of the Country Coordination Committee in China and other member countries and the progress of endorsement of the FARM document and the formation of Country Coordination Committee in Indonesia.
- 9.2 Dr. Mallinkcrodt emphasised that special attention may be paid to assess the beneficiary level of pesticides at the farm demonstration level and its relevance of compatibility to the Integrated Pest Management. The meeting also deliberated at length on the role of pesticides in the integrated pest management particularly as defined in the FAO International Code of Conduct on the Distribution and Use of Pesticides and agreed to follow these guidelines for ensuring scientifically integrated usage of user and environment friendly low volume crop protection agents. All the member countries participating in the FARM programme committed to pursue integration of the activities of the Pesticide Sub-Programme with those of the other 6 sub-programmes at appropriate levels and in consonance with the integration matrix developed for the FARM programme by the CTAs of the sub-programmes in their meeting in February, 1994 in Indonesia.

**10.0 REVIEW OF THE ACTIVITIES OF THE TECHNICAL COORDINATOR UNITS:**

**10.1 India - Environment and User Friendly Pesticide Formulation, Technology Development/Quality Control.**

Mr.Kohli briefed the meeting of the activities of the Technical Coordinator Unit. He said that since the last PMC meeting, two nominees each from PR China and Iran have been given indepth training in this TCU. He proposed that the next Regional Workshop on the subject be held in the month of February, 1995.

The PMC complimented Mr.Kohli on the strong support being given to this TCU for organising effective indepth training programme and accepted the proposal to hold the next Regional Workshop on the subject in the month of Feb.,1995.

**10.2 Islamic Republic of Iran - Prospecting of Raw Materials.**

Mr.Yazdi briefed the meeting of the progress of setting up of this TCU. He said that the necessary laboratory and field facilities have been created and staff posted for hosting the TCU. He would soon be confirming the detailed programme of the TCU.

**10.3 Indonesia - Environmental Protection through Effluent Treatment/Waste Disposal/Pollution.**

Ms. Bate Lestari mentioned that the necessary budgetary provision has made by her Govt. for organising the various programmes including hosting the Workshop on the subject as under:

<b>a)</b>	<b>Items in cash</b>	<b>Proposed USS</b>
	Personnel	55,000
	Secretariat	6,000
	Travel	5,000
	Workshop	40,000
	Misc.(expendable)	10,000



b)	<b>Items in Kind</b>	
	Office equipment	15,000
	Lab. facility	75,000
c)	<b>Total of cash and kind</b>	<b>206,000</b>

She also presented the Agenda of the proposed workshop on "Safe Disposal of Pesticide Waste and Safe Management of Effluent" scheduled to be held in July 10-14,1995 and mentioned that the arrangements would be confirmed after the approval of their proposal pending with the Govt.

Mr. Keith Johnson, Consultant to the "Assistance to Pesticide Formulation Technology Development "Project" in China made a presentation on the treatment and disposal of aqueous effluents arising from the pesticide producing units. He described the treatment process including the chemical treatment, physical adsorption and the quality of the resultant final effluents which are clear, virtually colourless and non-toxic. He stated that the effluent treatment plant can be established by individual pesticide formulation units at a cost of US \$ 15,000. He also mentioned that a 40% subsidy is available for setting up such plants in the UK. The meeting felt that during the proposed workshop in Indonesia, the prospects of large scale installation of small effluent treatment plants could be discussed in detail and the member countries assisted in setting up such plants for treating effluent, for containing environmental pollution.

The PMC appreciated the significant contribution being made by the Govt. of Indonesia through the TCU and accepted the offer of organising the workshop, subject to the approval of the Govt.

#### 10.4 **Malaysia - Pesticide Application Technology**

Ms. Muhammad mentioned that the Technical Coordinator Unit is preparing to host the next Workshop on the subject in September,1995 in collaboration with the Malaysian Plant Protection Society, Malaysian Agri. Research and Dev. Institute and University Pertanian Malaysia.

She also offered one man month free of charge indepth training in pesticide formulation analysis to the chemists from any member country of the network, but the cost of travel and DSA would have to be borne by the sponsoring organisation.

The PMC appreciated the excellent organisation of the last workshop in Sept. 1993 and accepted the offers made by the Govt. of Malaysia for hosting the Regional Workshop and for providing the free indepth training.

#### **10.5 Philippines - Industrial Hygiene and Occupational Health Safety.**

Mr. Cornejo briefed the meeting of the activities of the TCU and the programme of hosting the Regional Workshop from 5-9 December, 1994. Realising the importance of this Workshop and the fact that a number of Ministries, viz. Labour, Health and Environment besides Industry are involved, the PMC considered it prudent to sponsor at least two nominees representing two important Ministries involved in the health safety programme from the member countries. The PMC advised that the member countries may approach the industries to send upto two experts for participation in the workshop but the cost for their travel and DSA will have to be borne by the sponsoring industry.

The PMC appreciated Mr. Cornejo's initiative in organising a National Workshop on Eco-Toxicology as a followup of the workshop held in Islamabad, which was considered very appropriate for dissemination of technologies in the member countries.

#### **10.6 Pakistan - Eco-Toxicology**

Dr. Baloch briefed the meeting about the setting up of the Eco-Toxicology Centre in Pakistan with the assistance of UNIDO, DANIDA and the Govt. of Pakistan. The successful Regional Workshop organised by the TCU which was inaugurated by the Hon'ble President of Pakistan was very much appreciated by the members of the PMC. The PMC felt that similar workshops be organised in the member countries to disseminate the knowledge as has been initiated in Philippines, which would go a long way in assisting the member countries to preserve the environment. Dr. Baloch proposed to organise the next workshop on the subject in March, 1996.

#### **10.7 Republic of Korea - Development of Pesticide Specifications for Impurities in Active Ingredients at the manufacturing level.**

Dr. Young Koo Kim proposed to host the next Regional Workshop towards the end of August, 1995. On the request of some members of the PMC, he also agreed to organise indepth training to the nominees of the member countries free of cost. However, he said, the travel and DSA costs would have to be borne by the sponsoring organisations. The proposal was accepted by the PMC.

#### **10.8 Thailand - Development of Environment Friendly Bio\_Pesticides and Botanical pesticides.**

Dr. Siri Singh briefed the meeting about the successful organisation of the Regional Workshop on the subject in September, 1994. This was followed by protracted discussion on the importance of moving forward on neem based pesticides which have already been commercialised in some countries including USA, India, Thailand and Myanmar. The PMC felt that since neem trees are available abundantly in several countries of the Network, a stronger thrust by RENPAP on developing and commercialising neem would not only facilitate utilisation of local resources but would also have implications for income and employment generation in the neem growing areas. The PMC recommended that in order to expedite commercialisation and production of neem based pesticides in the neem growing member countries, the procedure of registration may be simplified. The PMC further recommended that RENPAP may undertake issuing guidelines for production and commercialisation of neem based pesticides in the region.

Equal interest was evinced by the members of the PMC in the production and promotion of usage of bio- pesticides particularly Bt. Prof. Tianjin, Professor of Hubai Academy of Agricultural Sciences, made a detailed presentation on the subject and mentioned that he has recently entered into a joint venture agreements with Ciba-Geigy for producing and supply Bt pesticides. He also offered to organise a 14-day training programme for the nominees of the member countries in view of the strong interest expressed by the participating member countries of the Network free of cost. This offer of Prof. Tianjin was accepted by the PMC and it was decided to include this Group Training programme in the Workplan of 1995.

#### **10.9 Findings**

The meeting noted with satisfaction the excellent facilities developed and Workshops and indepth training programmes organised in the areas of quality, safety and environment protection by the Technical Coordinator Units and strongly felt that the TCUs need to be further strengthened. The PMC also felt that the various recommendations made during the workshops organised by the TCUs would need to be followed up by organising Workshops on the same subject in each of the member countries and in these workshop the expert from TCU may be fielded to conduct the Workshops in the member countries in a planned manner. Dr. Molin-craft agreed to consider the proposal of the PMC for additional fund requirements for the purpose of meeting the cost of the TCU experts travelling to the member countries for organising these national workshops.

## **11.0 DISCUSSION ON FUTURE ACTIVITIES, MEETINGS, TRAINING PROGRAMMES, STUDY TOURS, FELLOWSHIPS, CONSULTANCIES**

Discussion on the future activities were held concurrently with the review of the activities of the Technical Coordinator Units and the planning of workshops, requirement of consultants and providing indepth training to fellows were finalised. The PMC having felt that the workshops being organised by the TCUs are of high quality in terms of technical content and organisation and that these group programmes are more cost effective than individual fellowships, recommended that the workplan may include more of group trainings and indepth trainings to be organised by the TCUs in preference to individual fellowships, particularly in view of the fact that many member countries hosting the TCUs are offering free of cost training. The National Coordinators of the eight FARM member countries were specifically requested to pay special attention for integrating the various training and other activities with the other sub programmes for achieving the overall objectives of the FARM programme.

The comprehensive work plan finalised during the last meetings for the full duration of the project was thereafter reviewed. Based on the proposals from the member countries necessary changes were incorporated to meet the growing needs and the workplan was finalised and approved (Annexure III).

## **12.0 CONCLUSIONS**

- 12.1 The meeting unanimously concluded that based on various deliberations and discussions the member countries have shown excellent commitment to RENPAP in the form of offering their various facilities for the benefit of the member countries and also in continuing some of the workshop activities and recommendations in their own countries.
- 12.2 Having taken into account the history of RENPAP and taking into consideration that the objectives have changed according to various developments in the field of pesticides, the meeting concluded that the design of the sub-programme with emphasis on plant safety, workers' health and environment protection (SHE aspects) application of user/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.
- 12.3 Having considered the need for the integration of the activities of this sub-programme with the other six sub-programmes of the FARM programme and having further noted that the National Coordinators are the members of the country coordination committees of the core members of the FARM programme the meet-

ing concluded that all efforts be made to achieve integration at the appropriate levels and in consonance with the integration matrix developed for the FARM programme, the main purpose of the linkage is to assess the beneficiary level of pesticides at the farm level and its relevance of compatibility in the IPM.

### 13.0 RECOMMENDATIONS

- 13.1 Having taken note of the successful organisation of workshops by the Technical Coordinator Units and having considered the keen interest of the member countries to follow up the recommendations adopted in these workshops, the meeting recommends that follow up of the effects of the group recommendations be expedited and augmented by an expert drawn out from the Technical Coordinator Units to visit selected member countries to assess the impact of the workshop on individual member countries and make necessary recommendations.
- 13.2 Having taken into consideration that the workshops had better value in the regional context, it is recommended that individual fellowships (e.g. for development of skills of trainers) should be arranged as far as possible within the region preferably at the Technical Coordinator Units by extending the stay of a few fellows following each workshops wherever possible.
- 13.3 Having seen the catalytic role played by the sub-programme in the setting up of the Technical Coordinator Units in the key areas of quality, safety and environment protection and creating an awareness to the development of local expertise in the selected areas, the meeting recommends further strengthening of the Technical Coordinator Units in the member countries of the network.
- 13.4 The meeting having realized that group training being more cost effective than individual fellowships and taking into consideration that tailor made workshops are being organised successfully by the Technical Coordinator Units recommends that more emphasis be given to group meetings than to individual fellowship. It further recommends that indepth training requisitioned by the member countries be undertaken within the region by the Technical Coordinator Units offering such programmes.
- 13.5 Having noted the keen interest of the member countries in the development of the neem (*Azadirachta indica*) and Bt based pesticides and having further noted that the progress made by some of the countries of the network in the commercial production of neem and Bt based pesticides and in order to expedite larger availability to the farmer to compliment the IPM programme the committee recommends that the RENPAP issues guidelines for the production and commercialization of neem and Bt based pesticides in the region in support of IPM. In this respect the meeting noted that the governments and the International Agencies

should support and strengthen the local capabilities in the development of bio/botanical pesticides.

13.6 Having discussed the status of the data collection work and having realized the usefulness of such a data base and having further noted the existence of hardware, software and specially trained data collection experts in the member countries of the network, the committee recommends that the activity may be pursued through providing appropriate support and take simultaneous steps to harmonize the REN-PAP and ESCAP Data bases.

13.7 Having taken into consideration the importance of the Brussels Guidelines on Integrated Safety in Pesticide Formulation in Developing countries and the need to cover the whole spectrum of production and user ends the meeting recommends full support to link UNIDO guidelines and the FAO Code of Conduct on Distribution and use of pesticides for promoting overall safety in the development of pesticides in the region.

#### 14.0 NEXT MEETING

The meeting accepted with thanks the offer made by Vietnam to host the next PMC meeting during November, 1995.

**LIST OF PARTICIPANTS OF THE TRIPARTITE REVIEW MEETING AND PROJECT MANAGEMENT COMMITTEE MEETING OF THE REG REGIONAL NETWORK ON SAFE PESTICIDES PRODUCTION AND INFORMATION FOR ASIA AND THE PACIFIC (RAS/93/061) HELD ON THE 27-29 OCTOBER 1994 AT NANSHEN CHEMICAL R&D CORPORATION, NANGTONG, JIANGSU, PEOPLES REPUBLIC OF CHINA**

**PEOPLES REPUBLIC OF CHINA (HOST COUNTRY)**

**Madam Gu Xiulian,  
Minister,  
Ministry of Chemical Industry**

**Mr. Yu Xinde,  
Vice Provincial Governor of Jiangsu Province**

**Mr. Yang Renyuan,  
Mayor of Nangtong city.**

**Ms. Xu Yan,  
Vice Director of Foreign  
Economic and Trade Committee, Jiangsu Province**

**Present during the formal inauguration  
Session only.**

**Mr. Sun Jie,  
Deputy Director General,  
CICETE,**

**Mr. Ming Yalin,  
Division Director,  
CICETE**

**Mr. Wang,  
Deputy Director,  
Min. of Chemical Industries**

**UNDP**

**Mr. Romulo V. Garcia  
Deputy Resident Representative, UNDP  
P.R. China**

**Mr. F. von Mallinckrodt,  
Principal Technical Adviser for Sustainable Agriculture, BPPS,  
UNDP, New York**

**Mr. Vivek Rae,  
Asstt. Resident Representative,  
UNDP, New Delhi**

**UNIDO**

**Dr. B. Sugavanam,  
Sr. Industrial Development Officer, UNIDO, VIENNA**

**FAO**

**Mr. AD. Spijkers,  
Deputy Resident Representative, FAO PR China**

**ESCAP**

**Mr. Edgar Dante,  
Technical Project Coordinator, Bangkok**

**Country Delegates**

**P.R. China  
Mr. Hong Chuanyi**

**India  
Mr. Vinay Kohli**

**Indonesia,  
Ms. Bate Lestari**

**Iran  
Mr. Mohammad Hossein Sharifi Yazedi**

**Malaysia  
Ms. Shamsiah Muhammad**

**Nepal  
Mr. Ram Sundar Lal Karna**

**Pakistan  
Dr. Umar Khan Baloch**

**Philippines  
Mr. Francisco Comejo**

**Rep. of Korea  
Mr. Young Koo Kim**

**Thailand  
Dr. Sathorn Sirisingh**

**Vietnam  
Mr. Tran Quang Hung**



**TRIPARTITE REVIEW AND THE PROJECT MANAGEMENT COMMITTEE  
MEETING OF THE REGIONAL NETWORK ON PESTICIDES FOR THE ASIA  
AND THE PACIFIC**

**RAS/93/061**

**Venue**

**Nanshen Chemical R&D Corporation, Nantong, Jiangsu,  
Peoples Republic of China**

**AGENDA**

**27 Oct. 1994 (Thursday)**

- |                 |   |
|-----------------|---|
| 1400 - 1500 hrs | Opening Session<br>Technical Review Meeting   |
| 1500 - 1540 hrs | Tea/Coffee break  |
| 1530 - 1540 hrs | Adaption of the Agenda  |
| 1540 - 1740 hrs | Reports of the National Coordinators of P.R. China, India,<br>Indonesia, Iran, Malaysia, Nepal & Pakistan |

**28 Oct. 1994 (Friday)**

- |                 |  |
|-----------------|--|
| 0900 - 1045 hrs | Continuation of report presentation by National Coordinators,<br>The Philippines, Rep. of Korea, Thailand and Vietnam. |
| 1045 - 1115 hrs | Tea/Coffee break   |
| 1115 - 1230 hrs | Reports from Agencies  |
| 1230 - 1400 hrs | Lunch  |
| 1400 - 1430 hrs | Report on programme of Data Collection System  |
| 1430 - 1500 hrs | Implementation of International Brussels Safety Guidelines<br>for Pesticide Formulation in Developing Countries.       |

- 1500 - 1530 hrs            Tea/Coffee break
- 1530 - 1700 hrs            Discussion on activities of the Pesticide Production and Information sub-programme and integration of activities with the other components of the FARM programme in People's Republic of China, India, Indonesia, Nepal, Philippines, Sri Lanka, Thailand and Vietnam.

**29 Oct. 1994 (Saturday)**

- 0900 - 1030 hrs            **Activities of the Technical Coordinator Units**  
\*India - Environment and User Friendly Pesticide Formulation Technology Development/Quality Control  
\*Islamic Republic of Iran - Prospecting of Raw Materials  
\*Indonesia - Effluent Protection through Effluent Treatment / Waste Disposal / Pollution Control  
\*Malaysia - User Friendly Pesticide Application Technology  
\*Philippines - Industrial Hygiene and Occupational Health Safety  
\*Thailand - Development of Environment Friendly Bio-pesticides and Botanical Pesticides
- 1030 - 1100 hrs            \*Tea/Coffee break
- 1100- 1230 hrs            \*Commitment from the member countries towards effective implementation of the activities  
\*Training programmes  
\*Study tours / Fellowship training  
\*Consultants requirements  
\*Participation in meetings  
\*Consultations/ communications between National Coordinator / Regional Coordinator/ Programme Support Unit.  
Support from UN Agencies  
Finalisation of the Workplan and project revision  
Other business
- 1230 - 1600 hrs            Lunch
- 1600 - 1700 hrs            Recommendation - Adaption of Report
- 1700 - 1730 hrs            Closing session.

## 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	6 days Sep. 03 1995	Malaysia	Application Technology	1 m/m 1995	CIPAC	France 1993	Afghanistan	Safe use of pesticides			
Safe Use of Pesticides	1995 Sept. 1994(FAO) 1996	Malaysia India (Hyd) Philippines			CIPAC/IUPAC	USA 1994 1995 1996 1997					
Workshop on user and environment friendly IPM compatible pesticide formulation and quality control	Jan. 1995 Nov. 1996	India India			PMC Meetings	India 1993 China 1994 Vietnam 1995 Sri Lanka 1996 Pakistan or Nepal 1997/98	Bangladesh	Residue Analysis, Quality Control**			
Workshop on Eco toxicology	7 days 27-31/3/94 1996	Pakistan Pakistan	Eco Toxicology	1 m/m Thailand 1995. 1/2 MM Pakistan 1996.			Myanmar Sri Lanka				
Workshop on Upgrading of Laboratory Facilities for monitoring pollutants in air, solid and water	6 days 1996 Aug.	South Korea South Korea					Pakistan	Eco-toxicology Management			
Workshop on Occupational Safety and Industrial Hygiene	6 days 5/9/2004	Philippines	Pesticide Poisoning	1 m/m 1984							

- \* Delegates from Philippines and Vietnam would stay on for two more weeks for in-depth training.  
 \*\* Training will be provided by Pakistan/ Thailand.

 Activities carried out in 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 effluents	5 days 1995 July 1997	Indonesia Indonesia	Waste Disposal	1 m/m each 1995 & 1997			South Korea	Environmental Toxicology			
Bio-Botanical Pesticides	6 days 1-3/9/1994 1997	Thailand Thailand	Bio- botanicals	1 m/m 1994			Thailand				
**** Biopesticides	14 days 1995	China	Pest Control Operations	1 m/m (Sri Lanka)			Vietnam				
							Malaysia				
			Disposal of Pesticides	2 m/m 1995 Sri Lanka Philippines Pakistan			Sri Lanka				

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

\*\*\*\* Subject to the approval of the Government. Wherever possible individual training should be linked to group training on a selective basis.

**UNIDO'S SUBSTANTIVE COMMENTS ON THE TECHNICAL REPORT**

**DP/RAS/93/061**

The report is self-explanatory in the sense that RENPAP within the framework of the FARM programme has become a very mature programme providing services to member countries in a highly decentralized way. The links established has become strong over the years and with emphasis moving towards quality, safety, environment protection all in consonance with risk reduction/elimination in pesticide development in the region. Being a mature project, it is leading the way in the FARM programme for full participation of member countries to make use of the expertise available in the region. With linkages well established with national programme, RENPAP will put emphasis on sustainable development in the future and also support the demonstration sites in the FARM programme. It will support bio-technology and IPM sub-programmes so as to make best use of the limited budgetary resources. The TCDC concept has been fully utilized by the project and as an outreach will spill over into certain aspects of Agenda 21 covering sound management of toxic/hazardous chemicals, sustainable agriculture and bio-technology/biodiversity.