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STANDING COMMITTEE ON
PETROLEUM & CHEMICALS
(1995-96)

TENTH LOK SABHA

INSTITUTE OF PESTICIDE
FORMULATION TECHNOLOGY

MINISTRY OF CHEMICALS & FERTILISERS
(DEPARTMENT OF CHEMICALS AND
PETROCHEMICALS)

TWENTY-SIXTH REPORT



LOK SABHA SECRETARIAT
NEW DELHI

February, 1996/Phalgun, 1917 (Saka)

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**INSTITUTE OF PESTICIDE FORMULATION
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(DEPARTMENT OF CHEMICALS AND PETROCHEMICALS)



*Presented to Lok Sabha on..... 7 MAR 1996
Laid in Rajya Sabha on.....*

**LOK SABHA SECRETARIAT
NEW DELHI**

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**COMPOSITION OF THE STANDING COMMITTEE ON
PETROLEUM AND CHEMICALS
(1995-96)**

Shri Sriballav Panigrahi — *Chairman*

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LOK SABHA

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1.	Shri G.C. Malhotra	—	<i>Joint Secretary</i>
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4.	Shri S.N. Dargan	—	<i>Assistant Director</i>

* Ceased to be Member of the Committee consequent upon their appointment as Ministers in the Council of Minister w.e.f. 19th September, 1995.

** Expired on 8th February, 1996.

INTRODUCTION

I, the Chairman, Standing Committee on Petroleum & Chemicals (1995-96) having been authorised to submit the Report on their behalf present this Twenty-Sixth Report on Institute of Pesticide Formulation Technology, Ministry of Chemicals and Fertilisers (Department of Chemicals and Petrochemicals).

2. The Committee took evidence of the representatives of Institute of Pesticide Formulation Technology on 23rd August, 1995 and 8th September, 1995. The Committee also took evidence for the representatives of Ministry of Chemicals and Fertilisers (Department of Chemicals & Petrochemicals) on 15th November, 1995.

3. The Committee considered and adopted the Report at their Sitting held on 26 feb. 1996.

4. The Committee would like to express their thanks to the officers of the IPFT and Ministry of Chemicals and Fertilisers (Department of Chemicals and Petrochemicals) who appeared and placed their considered views before the Committee on the subject.

SRIBALLAV PANIGRAHI,

New Delhi;

Chairman,

February 29, 1996

Standing Committee on

Phalgun 10, 1917 (Saka)

Petroleum & Chemicals.

REPORT

PART-I BACKGROUND ANALYSIS

CHAPTER I

OBJECTIVES OF INSTITUTE OF PESTICIDE FORMULATION TECHNOLOGY (IPFT)

A. Setting up of IPFT

1.1 In order to provide the Indian farmers with safer and user friendly pesticide formulations, the Government of India decided in June 1981 to launch a country project assisted by the United Nations Development Programme (UNDP)/United Nations Industrial Development Organisation (UNIDO). With the end of the first phase of the programme entitled "Pesticide Development Programme India" (PDPI), the second Phase started in September 1989 under the banner of "Strengthening of Pesticide Development Centre Phase II".

1.2 For ensuring effective utilisation of the various outputs of this project, it was considered necessary by the Government to involve the pesticide industry in the management and financing through sponsoring of projects and obtaining various services available in the Institute. This step was taken after a series of consultation with the pesticide industry association, the UNDP and the UNIDO and a society named the "Institute of Pesticide Formulation Technology" (IPFT) was registered in May 1991 under Societies Registration Act.

B. Transfer for Assets to IPFT

1.3 During the course of examination of IPFT, the Committee pointed that even though the Institute had been set up in 1991, the legal transfer of assets etc. has not taken place so far. The Committee enquired about the reasons for non-transfer of assets etc. in favour of the Institute so far. The Chairman, IPFT replied as follows:

"A Government order delineating the assets of the Institute which comprised of three categories of elements was issued. The first category is instruments and equipments which were purchased with the UNDP funds. The second category is the land and building.

The third category is some equipments, furnitures and fixtures brought from the public sector undertaking i.e. M/S Hindustan Insecticides Ltd. (HIL) which was hosting this Institute prior to its formation in June, 1991.

These details were gone into by a duly constituted Committee in the Department of Chemicals and Petrochemicals which submitted its report and based on that report , an order was issued in the month of March 1995 transferring the assets to the Institute. We understand that in the last Board meeting of the M/s Hindustan Insecticides Ltd. decisions have been taken in this regard and we are awaiting their formal communication and once the assets are received, then the Institute would be on sound footings".

1.4 During the course of examination of Department of C&PC, the Committee enquired about the follow up action on the Government Committee's Report on transfer of assets in favour of IPFT. The Department of C&PC in written note stated that the issue of demarcation of assets and liabilities between IPFT and HIL was discussed in various fora including the Governing Body of IPFT.

1.5 When asked further by the Committee as to whether any time frame had been envisaged to complete all the formalities including the legal one regarding the transfer of assets in the favour of IPFT, the Department of C&PC stated in a written note:

"A decision was taken that some particular assets would be transferred to IPFT w.e.f. 01.04.95.

1. The equipments/ instruments received from UNDP for the project.

2. Buildings/equipments/instruments/fixtures and furniture of other assets created out of the Govt.'s assistance for the project along with the liabilities, duly certified by HIL's auditor in respect of the loan and the interest due thereon as on 1.4.95 on the funds obtained from the Govt. for creating these assets.

3. Equipments/instruments/furniture and other assets purchased by HIL and which were in use of PDC/PDPI as on 31.5.91 and were still in use by the IPFT. The book value of these items to be paid by IPFT based on the certificate given by HIL's Auditors as on 1.4.95.

4. 17 acres of land in R&D complex, for which no liability to be created in the Books of accounts of the IPFT.

5. Certain facilities like security, chilling plant, street lights, etc. to remain in common use on 50:50 basis for a period of two years.

Both IPFT and HIL were informed of the Govt.'s decision on 31.3.1995.

Based on the orders of the Govt., HIL and IPFT will take further necessary action in respect of the transfer of ownership of the land with State Govt. authorities covering all legal aspects".

1.6 When asked about the latest position in the matter, Chairman, IPFT apprised the Committee (November, 1995):

"We would like to reiterate that the division of assets has been settled; and the Hindustan Insecticides Limited needed the approval of the Board of Directors which had been done now. It is expected that the legal procedures will now be expedited for the transfer of land. The identification of the land of 17 acres had been completed. Therefore, we do not expect any further delay except the legal procedure which will be pursued both by the IPFT and the Hindustan Insecticides Limited and also the State Government of Haryana".

C. Organisational Structure of IPFT

1.7 The Institute is headed by a Part-time Chairman. Secretary of the Institute reports to him. The heads of various departments report to Secretary. The Institute has also got a Governing body with representatives of the Industry, representatives from the Ministries of Chemicals & Fertilisers, Agriculture, Health & Family Welfare, representatives of two State Governments and a representative from Public Sector organisation manufacturing insecticides/pesticides.

1.8 During the course of evidence of the representatives of IPFT, the Committee enquired about the latest composition of Governing Body and its effectiveness to run the Institute smoothly. Chairman, IPFT stated as follows:

"The Governing Body of the Institute which administers the Institute of Pesticide Formulation Technology has 10 Members and these Members have been drawn from the Department of Chemicals and Petrochemicals. The Joint Secretary in-charge of Chemicals is a member, the Joint Secretary in the Department of Agriculture dealing with agricultural inputs, particularly pesticides is a member, the Joint Secretary and the Financial Advisor of the Ministry of Chemicals and Fertilisers is a member and then the Director of the Institute of Chemical Technology, Hyderabad, which is a premier Institute in the field of drugs and pesticides, is a member.

Then, the Joint Secretary, Ministry of Health dealing with malaria control and utilising the pesticide chemicals as input is a Member; the Chairman and Managing Director of the public sector undertaking dealing with pesticides is a Member; the Director (Agriculture), Government of Bihar is a Member; the Secretary (Industries), Government of Haryana is a member because the Institute is located in Haryana, and the General manager (Research and Technology) of the Hindustan Insecticides is the Member Secretary. We have been having good participation in this forum from the industry as well as from the Members. In the initial stages, in order to have a much wider coverage, we had been holding the meetings in the good offices of the Secretary, Department of Chemicals and Petrochemicals and we had been requesting him to preside over the proceedings of the meetings. This was primarily aimed to bring in more industries and to get much stronger support from the various Government Departments and to lay down the ground rules of the Institute at the initial stages. Our experience has been very good so far in terms of participation, in terms of support from the different Government Departments and the industry. The day-to-day working at initial stages had been looked after by a Committee comprising mainly of the Members of the Governing Body, called the Finance and Administrative Committee. It is Headed by the Joint Secretary (Chemicals) in the Ministry of Chemicals and Fertilisers and this Committee has held 20 meetings since the inception of the Institute. In Fact, the meetings had to be quite frequently held because we had to deal with a number of developing situations including framing the rules, the staffing pattern, the financial regulations and drawing of more support from the industry."

1.9 During the course of examination of the Department of C&PC, the Committee enquired about the experience of the Ministry in regard to the management of IPFT through the Governing Body. The Department of C&PC replied in a note:

"The bye-laws of the society provide for a Governing Body to oversee the functioning of the Institute. The membership of the Governing Body Comprises of representatives from various concerned Ministries like Ministry of Health, Ministry of agriculture, representatives from the Industry, etc. The rich and varied experience of the members of the Governing Body has been very helpful in ensuring that the Institute functions in an effective manner. The representatives of various Ministries in the Governing Body have taken keen interest in the functioning of the Institute. They have contributed positively to the functioning of the Institute".

1.10 When asked about the periodicity of meetings of Governing Body of the Institute, IPFT in a note stated:

"As per rules and regulations of the Institute, at least two meetings of the Governing Body are to be held every year.

The Governing Body has been holding its meetings regularly and in order to ensure quick decisions at the early formative stages of the Institute constituted two committees, namely a Finance & Administrative Committee and a Technical Committee comprising members of the Governing Body to meet more frequently. The Finance & Administrative Committee has met 20 times since June 1991".

1.11 As regards of Chairing the Governing Body IPFT stated:

"Every meeting of the Governing Body has to be presided by the Chairman and in his absence, by a member chosen by the meeting, can chair the meeting.

In the initial stages, when many important decisions on administrative, financial and policy matters were required to be taken, which involved interaction with industry and other Ministries, it was considered necessary to use good offices of Secretary (C&PC) and accordingly all four meetings of the Governing Body were conducted in his room and he presided over the meetings of the Governing Body.

Existing arrangements are considered quite satisfactory".

D. Objectives of the Institute

1.12 The objectives of the Institute are as under:

"To undertake research in pesticide formulation technology, encourage in the broadest and most liberal manner, the advancement of pesticide formulation research and development; the promotion and transfer of pesticide formulation technology to the industrial sector, the improvement of the qualifications and usefulness of pesticide formulation chemists and engineers through high standards of professional ethics, ~~education~~ and attainments; to increase and diffuse pesticide formulations knowledge; and by its meetings, professional contacts, reports, papers, discussions and publications to promote scientific interests and inquiry; to promote the utilisation of technology developed in pesticide formulation research and to enhance public awareness of improved technology and its value and thereby fostering public welfare and education; aiding the development of industries and adding to the material prosperity and happiness of people".

1.13 During the course of examination, the Committee asked as to what extent the above objectives have been achieved by the Institute so far. IPFT in a written note stated:

- (i) **Advancement of pesticide formulation research and development:** The institute has successfully developed suspension concentrates, water dispersible granules, micro-emulsions and slow release formulations using indigenously available raw materials.
- (ii) **Promotion and transfer of pesticide formulation technology to the industrial sector:** The Institute has been making efforts to inform the pesticide industry of the new technologies being developed by it and the industry in turn sponsoring projects for development of tailor-made formulations for specific pesticides of their choice. Accordingly, the Institute since its inception, has been successful in developing and transferring the following formulations to the respective industries who sponsored these projects.

<i>S. No.</i>	<i>Technology</i>	<i>Sponsors</i>
1	2	3
1.	Isoproturon 50 SC	Gharda Chemicals
2.	Sulphur 52 SC	AIMCO pesticides
3.	Monocrotophos 36 SL	Bhaskara Agro
4.	Chlorpyriphos 40 EC	EID Parry
5.	Endosulfan 50 SC	Excel Industries
6.	Malathion 50 WP	United Phosphorous

(iii) **Improvement of the qualifications and usefulness of pesticide formulation chemists and engineers through high standard of professional ethics and trainings:**

With the help of facilities provided by the UNDP/UNIDO project, about 60 scientists/chemists and engineers were sent for training abroad in the world famous institutes/laboratories/companies since the inception of UNDP/UNIDO Project.

Having been trained abroad, the chemists and engineers working at the Institute are rated amongst the best in the Asia pacific region.

(iv) To increase and diffuse pesticide formulations knowledge by its improving professional contacts, meetings, reports, papers, discussions and publications to promote scientific interests and enquiry. In order to diffuse the knowledge of new generation pesticide formulations, the Institute had been regularly conducting training programmes, organising workshops, seminars and publishing reports for large scale spread of the technological attainment of the Institute. 17 training programmes,

seminars/workshops have been organised by the Institute during last three years and 426 participants from industry and Govt. bodies were benefited by these programmes.

(v) Impact on Pesticide Industry

Response from the industry has been very encouraging. They have Sponsored projects for development of formulation technologies, development of analytical methods, sample analysis, bio-assay (lab. and field) studies of pesticide formulations and semi-commercial production of pesticide formulations. Industry's response to various training programmes/seminars/ workshops conducted by the Institute has been encouraging. Most of these programmes have been over-booked".

1.14 During the course of evidence of the representatives of IPFT, Chairman, IPFT elaborating the activities of the Institute also stated:

"It has been one of the major tasks of the Institute to manufacture these products by developing proper technologies using indigenously available raw materials and to provide these technologies to the Indian industries so that they can produce these at the commercial scale and make these available to the farmers. The problem in India is compounded by the fact that most of the farmers are not literate enough to read the instructions which are written on the pesticide packages to how to use, etc. Therefore, if we succeed in providing them with safer products, their safety is taken care of significantly besides teaching them, how best he should use. By this, we can tackle the problem right at the root level itself.

The other area where we are concentrating is the area of quality assurance. Unless the quality of a product that is coming out of the factory premises is guaranteed, it is very difficult to safeguard the interests of the farming community at the grassroot level. The pesticide molecules, which are presently popular are

highly complex. These cannot be analysed using an ordinary chemical laboratory because these need fairly sophisticated analytical facilities for analysing the active ingredient content.

The third area where we are concentrating our efforts is the training of those who are engaged in the production, quality control and those who are in charge of framing up the quality standards. For them all, we had been carrying out well-designed and well-structured training programmes. These Programmes are very popular with the industry and with the Government officials. We always have a waiting list for the candidates who undergo these training programmes.

This Institute also is a focal institute in the Asia and the Pacific region of the United Nations programme on pesticide development in the Asia and the Pacific. It caters to the pesticide formulation and quality control aspects of the Regional Network programme on Pesticides for Asia and the Pacific (RENPPA). It organises Training Programmes for the Personnel of the Member States. It also organises group training. It also sends out its experts to the Member-States for assisting them in the specific areas of their requirement. Therefore, this Institute is not only serving the very vital need of India but also by virtue of its capabilities in terms of equipments and expertise the entire South-East Asian countries are depending on this Institute for solving their problems pertaining to pesticide formulation as well as quality control".

1.15 During the course of examination of the Administrative Ministry viz. Department of Chemicals & Petrochemicals (C&PC), the Committee wanted to know whether they had made any assessment in regard to achieving the objectives by the Institute, Secretary, C&PC stated as follows:-

"Sir, a formal study of this Institute has not yet been made because, as you would be aware, this Institute came into being only

in 1991. It has just done about four years of work. Of course, in the Governing Body's meetings, a representative of the Department of Chemicals and Petrochemicals is always associated, and the last three of four meetings of the Governing Body have invariably been held in the Chamber of the Secretary, Chemicals and Petrochemicals. So, obviously, the Secretary of the Department has always been associated from time to time. Apart from other officials of the Ministry, like the Joint Secretary, Chemicals, the Secretary Chemicals & Petrochemicals is also in intense touch with the Institute".

1.16 When asked further whether a formal study of the working of IPFT would not be better, the witness replied:-

"Initially, when any institute or any such organisation with a fairly high degree of sophistication is envisaged, the first one or two years are really the period of teething trouble and doing the spade work. If the historical background and the progress of this Institute is seen since the time it was first conceived and put on ground in 1991, I think the first two years or so went in organising various things, making available the land which has been promised by HIL, and also ensuring that there should be a kind of five year requirement and year-wise requirement of funds, what sort of equipment would be necessary, what sort of personnel they would have, etc. etc. So, in my perception, the time when the Institute started functioning properly is only about two years ago".

.....I think after another two years when the Institute works at full swing we should really carry out an in-depth study to recommend whether the deficiencies are noticed, where we should improve, what should be the instrumentation etc.".

CHAPTER II

ACTIVITIES OF IPFT

2.1 The major areas of operations of the Institute are as under:-

- (i) Development of technologies for the production of user and environmentally friendly pesticide formulation.
- (ii) Analytical facilities for pesticide industry.
- (iii) Training.
- (iv) Institute as Technical coordinator unit on "Pesticide Formulations Development and Quality Control" of RENPAP.

The above activities of the Institute are detailed in succeeding paragraphs.

A. Pesticide Formulation Technology

2.2 Explaining the activities undertaken by the institute in the area of developing pesticide formulations technology, IPFT in a note informed the Committee that one of the major objectives of the Institute was to develop and provide the pesticide formulation industry with user and environmentally friendly pesticide formulations so that the Indian farmers would have access to the user friendly products like the farmers of the developed countries

2.3 When asked about the achievements made in this regard particularly for making the country self-reliant in the area of pesticide formulation technology, IPFT replied in a written note: .

"Institute of Pesticide Formulation Technology is regarded as a Centre of Excellence in the field of pesticide formulation and quality control by the UNIDO/UNDP in the Asia and the Pacific region. This Institute is equipped with instruments, pilot plants

and trained manpower to develop the latest varieties of pesticide formulations which are user and environment friendly. Mostly technologies of the safer varieties of pesticide formulations are closely held by the multinational companies of the developed world. IPFT has succeeded in developing many of these latest types of the new generation pesticide formulations namely Suspension Concentrates (SC), Water Dispersible Granules (WG), Concentrated Emulsions (CW), Capsulated Suspensions having controlled release characteristics (CS) Ultra Low Volume formulations (ULV), Micro-Emulsions (ME) and certain prescription formulations specifically designed to suit the need of the users, using indigenously available raw materials. These technologies are being transferred to the Indian pesticide industry through contract project for large scale production and usage in the field. The Institute has also succeeded in developing a novel self-spreading oil based formulation for bio-pesticides namely *Bacillus Thuringiensis* and *B. Sphaericus*. The Institute is constantly updating its technological capabilities so as to remain in the forefront and provide and Indian industry with the latest pesticide formulation technologies."

2.4 When asked further as to whether the pesticide formulations technology in the country was comparable to other developed countries, IPFT replied in a note:-

"No, Sir. The Formulations, *viz.* Wettable Powder (WP), Dust (D) Granules (G), Emulsifiable Concentrates (ECs) which are the major formulation products available in the country are not user and environment friendly. In contrast the formulations extensively used in the developed countries comprise water Dispersible Granules (WG), Suspension Concentrates (SC), Concentrated Granules (CW), Micro Emulsions (ME), and Controlled Release Formulations (CR), which are far more safe and environment friendly, although these are slightly costly."

2.5 In reply to a further question IPFT stated:–

"Major institutes and private companies engaged in R&D in pesticide formulation development were Indian Agricultural Research Institute (IARI), National Chemical Lab., Pune, Gharda Chemicals, United Phosphorous Ltd., Excel Industries and some multinational companies, viz. Bayer Indian Ltd., Zeneca, Hindustan Ciba Geigy, Cyanamid, Rhone Poulenc. The multinationals were having their comprehensive R&D facilities in their parent companies located outside India."

2.6 When asked further about the steps taken to develop new pesticide molecules in the country. IPFT stated in a note:–

"So far none of the Indian R&D laboratories have been able to develop a new pesticide molecule. This is primarily because of the non-availability of infrastructural facilities as well as financial backing needed for undertaking such developmental work. Presently for developing one molecule for commercial use an expenditure of about US \$ 50-60 million is involved as it needs screening of 15,000-20,000 new molecules and takes about 15-20 years for synthesizing, screening and commercialising a new product. To the best of our knowledge no step has so far been taken to develop new pesticide molecules in the country."

2.7 Explaining it further, Chairman, IPFT stated during evidence:–

"It is a very extensive process to develop new molecules. Besides, it costs 50 million dollars and roughly it takes 10 to 15 years to develop. That is an area where America is leading."

2.8 The Committee enquired whether some of the pesticides/ chemicals which were banned in the developed countries could be supplied by multi-national companies to our country for use in large quantities, the Chairman, IPFT stated that it was not possible. When pointed out by the Committee that DDT was banned abroad and was still being produced/

used in the country, the witness replied:–

"DDT has been banned in United States many years ago. It has been banned in many of the developing countries, but due to economic considerations and due to certain extra-ordinary scientific considerations it is still in use in India for control of mosquitoes and malaria."

He added:–

"It is true that the organo-chlorine-compounds have been banned in the developed countries and that we are still continuing with those products. We have good scientific reason for using those products like DDT. Here in our country the agro-climatic conditions are very well-matched favouring use of DDT. Here we have got plentiful sunshine which is known to breakdown organo-chlorine compounds. So, we have to look specifically to our climatic conditions which cannot be compared with those of many of the developed countries."

2.9 The Committee further wanted to know whether Government/ Indian Industries were spending as much money on developing pesticide molecules suitable for Indian conditions as the developed countries, the Chairman IPFT stated:–

"We do not. That is why we have not been able to develop a single molecule of our own. Now, the molecules are coming from the multinationals, mainly from USA."

2.10 In reply to a question about self-sufficiency, the witness stated:–

"We are in a very happy position as far as the pesticides are concerned. We meet 98 per cent of our requirement from our own production. Only very small quantities of pesticides are imported like DDT. from Russia."

2.11 The Committee further pointed out that majority of the farmers in the country were illiterate and asked about the action taken for safe handling of the pesticides by the farmers, IPFT in a note stated:-

" In India use of pesticide is regulated through Insecticides Act 1968 and Insecticides Rules 1971. Keeping in view the literacy status of our user farmers, it has been made mandatory to use a colour scheme in the form of a triangle conspicuously printed on the label or the container in order to enable the user to recognise the extent of hazard involved in the handling of the product. The extremely toxic pesticides are marked with a red triangle, a bright yellow triangle is used in case of highly toxic products, bright blue colour triangle is used in case of moderately toxic and bright green colour triangle is used in case of slightly toxic pesticides.

The attractive containers often used by the manufacturers is yet another hazard needing specific attention as the user farmers are attracted to re-use the container for storing food articles and even drinking water. This practice invariably leads to contamination as many of the toxic pesticides are water insoluble, therefore, cannot be removed from the containers just by washing with water. use of water soluble bags for storing pesticides is getting popular in the developed countries and needs to be encouraged in India in view of the large percentage of illiterate farming community handling and using pesticides.

Safe use also includes use of safe applicators so that the farmers do not unduly expose themselves to the spray particles. Improvement in the quality of sprayers suiting the specific needs of the safer formulations is yet another area needing special attention.

Protection against unwanted exposure to the farmers require the use of protective clothing. The clothing available presently are more suited to the temperature climatic conditions and there is an urgent need for designing and popularising protective clothing suiting our hot and humid field conditions.

Lot more attention and work needs to be done for providing the farmers with safer pesticides and their formulations, protective clothing that could be worn under hot humid conditions, good applicators for the reduction of exposure and training the farmers on safe use of pesticides to come up to the standards of the developed countries.

2.12 On being further pointed out by the Committee that it should be made compulsory for the industry to produce safer and eco-friendly pesticides, Chairman IPFT stated that there was a need to bring a piece of legislation for the purpose.

He added:-

"Everybody feels that this is a right course of approach in which we will get safer products by which we safeguard the health of the farmers and the environment but it may not come here so soon voluntarily because in countries where it has come fast, it has come through some legislation."

2.13 In reply to a specific query about developing new pesticides based on indigenous inputs. The witness stated:-

" Our work is concentrated on the development of Neem because it is very well-known for ages to be a very good repellent and also anti-feedent and we have now developed a good formulation for this. Recently we have taken up implementation of sponsored project for a new formulation of Neem. You might be knowing that there are only six countries in the Asia-Pacific Region where Neem can be grown. It has become a very popular in Myanmar, Thailand, Sri Lanka, India and to some extent in Indonesia. India has the largest potential as far as Neem is concerned. A lot of Kernel is being exported to the United States of America where they have few products which are registered as derivatives of Neem and this is an area where we are trying to move ahead, because we have plentiful availability of Neem and it can be used which will

be absolutely harmless and will leave no toxicity in nature."

2.14 During the course of examination of Department of Chemicals and Petro-Chemicals the Committee enquired whether there was any law meant for enforcing the safe use of pesticides. The Secretary, Department of Chemicals and Petro-Chemicals replied:-

" As far as legislation to control the person who is using it is concerned, the answer is that we do not have a legislation to enforce the users adhering to this particular thing."

2.15 Asked whether the Government had issued any guidelines in this regard so as to make it compulsory for the industry to produce safer and water based formulations which would be environment friendly, Deptt. of Department of Petro-Chemicals replied in a note that the Government had not so far issued any guidelines to make compulsory for the industry to produce safer water based pesticides which were environment friendly.

2.16 on being asked further as to whether any efforts were being made to involve industry/voluntary organisations in educating farmers for using safe and environment friendly pesticides, the Department of Chemicals and Petro Chemicals, replied in a note:-

"The Governing Body includes members of the industry and the institute has been interacting with the industry in general who in turn are getting water based formulation technologies of the pesticides through sponsored projects . These water based formulations are meant for the farmers for ensuring safety to the farmers themselves and the environment . However, the major task of educating farmers for safe use of pesticides rests on the Ministry of Agriculture and the respective State Government."

2.17 The Committee also enquired whether a piece of legislation stipulating production and use of only quality pesticides in the country like USA would not be a better solution. The Department of Chemicals and Petrochemicals stated in a note:-

"The replacement of the petroleum and organic solvent based pesticides formulations with those of water based formulations would certainly lead to reduction in the exposure and environmental pollution hazards. It is also known that the water based formulations are being increasingly produced in the developed countries. With this experience, it would be worthwhile to take up the matter with the Ministry of Agriculture and the Industry for considering ways and means of ensuring promotion of water based pesticides formulations production and usage. A closer coordination may also have to be worked out for a more positive, intense and unified approach."

2.18 The Committee also enquired from Ministry of Agriculture about their views on bringing a piece of legislation to regulate the use of eco-friendly and safe pesticides in the country. The Ministry of Agriculture stated in a note that the use of eco-friendly and safe pesticides were already being regulated under the existing Insecticides Act, 1968 and the rules framed thereunder. Therefore, there was no need for bringing another Act for this purpose.

2.19 The Committee further asked about the efforts being made by the Ministry of Agriculture to enforce the use of only-eco-friendly and safe pesticides (including the safety aspects in consuming end crops by the human being). The Ministry of Agriculture in a note stated:

"The chemical pesticides by their very nature are hazardous and poisonous to human health and environment. Due to their indiscriminate, liberal and overuse, several associated ill-effects of pesticides have surfaced in the form of human and animal health hazards, environmental pollution, residues in food, fodder and water, ecological imbalance etc. in view of our experience about the ill-effects of pesticides at home and global concern, the Government of India have reoriented its plant protection policy recognising Integrated Pest Management (IPM) as cardinal principle and main plank of plant protection technology. In order to minimise the use of chemical pesticides as also to popularise

use of eco-friendly and safe pesticides, the Government of India is implementing IMP programme in collaboration with State Department of Agriculture to educate extension functionaries and farmers by organising Farmer's Field Schools (FFSs). In these FFSs, main emphasis is given on the use of non-chemical and alternative methods of pest control and pesticides are advocated only as a last resort and that too comparatively safer pesticides are recommended having minimum effect on environment and human health. The farmers are also educated in the agro-eco-system analysis and identification of friendly insects (Biocontrol agents)."

2.20 Asked about the steps taken for educating the farmers for safe use of pesticides, the Ministry of Agriculture in a note furnished to the Committee stated as follows:

"The Government had allocated a sum Rs. 45 crores during VIII Plan for implementing the IPM programmes. The Government of India had established 26 Central IPM Centres in the States/UT to popularise IPM technology among the vast farming community and extension functionaries through IPM field training and demonstration programmes (Farmers' Field Schools). In these Farmers' Field Schools, on-farm training and education was imparted to the farmers on whole village concept basis."

B. Analytical facilities

2.21 The Institute is providing analytical facilities in the form of pesticide analytical services, method development, method validation and verification and analysis of impurity profile of technical pesticides to various Indian pesticide industry and Bureau of Indian Standards. The Analytical facilities of the Institute are being utilised by over 30 Indian pesticide industries besides the Bureau of Indian Standards which is utilising the facilities to the maximum extent possible.

2.22 During course of examination, the Committee enquired whether the analytical facilities being provided by the Institute to Indian pesticide industry and Bureau of Indian Standards (BIS) were adequate for the pesticides requirements of the country. IPFT in a note stated:

"No sir. The analytical facilities provided by the Institute to the Indian Pesticide Industry and Bureau of Indian Standards (BIS) are not adequate for the pesticide requirements of the country. The main reason is that some more analytical facilities are still needed to fill up the gap."

2.23 Asked about the steps taken or proposed to be taken by the Institute to provide more analytical facilities to pesticide industry with a view to serving the interests of Indian farmers in the coming years, IPFT replied in a note:

"The analytical facilities in the Institute are not adequate enough to provide all services needed by the pesticide industry and BIS in the form of sample analysis, method development, impurity profile analysis and reference standards materials. Action has already taken to upgrade and expand the existing laboratory facilities including additional manpower and with availability of some funds from the Government of India, activities would be started within the next 3 months. This will greatly expand the analytical facilities to the pesticide industry for serving the interests of the Indian farmers in the years to come."

2.24 When asked further about the basis of fixation of rates/charges for providing analytical facilities to other organisations/ Institutes and whether the rates were comparable with other Research Institutes both in terms of quality and financially, IPFT replied in a note:

"To start with a comprehensive survey on the rates/charges fixed by organisations providing analytical services was carried out. Thereafter the actual cost of analysis and the overheads of

the Institute was calculated for providing similar analytical services. Thereafter rates were fixed in a manner so as to meet the cost of analysis and also earn a little margin while keeping the services comparable in costs with the other institutions."

2.25 The Committee also wanted to know whether the Institute received requests for analytical facilities from the other countries covered under UNDP/UNIDO schemes. IPFT in a note replied:

"Yes Sir. The Institute receives requests for analytical facilities from RENPAP countries in terms of method development, method validation and method verification as well as indepth training and hands on experiences on quality control and quality assurance."

C. Training Programmes

2.26 One of the objectives of the Institute is promotion and transfer of pesticide formulation technology to the industrial sector. To achieve this objective the IPFT had been conducting training programmes for the nominees of the industry, the regulatory authorities of the Central and State Governments and the Officers of the Bureau of Indian Standards. Elaborating the nature of training programmes, IPFT in a note stated:

" The training programmes conducted by the Institute are tailor made to meet the specific requirements of the organisations/ the industry sponsoring the trainees. The duration also depends on the contents of the training and the level of participation of the trainees. The training programmes cover all aspects of pesticide formulation viz. pesticide formulation development, pesticide analysis, safety and waste disposal, industrial investments, and project preparations appraisal and financing, packaging and registration. The fees collected for these trainings generates surplus after meeting all expenses for conducting these trainings and adds to the income of the Institute."

2.27 During the years 1992-93, 1993-94 and 1994-95 the Institute conducted 17 training programmes where 426 participants undergone such trainings. The duration of training programmes ranged from 1 day to 12 days. The Committee pointed out that considering the size and magnitude of the country the number of people undertaking the training was too low. Asked whether there was any plan to educate the farmers on scientific and safe use of pesticides the Chairman, IPFT stated during evidence:

"We are concentrating our efforts in the training of those who are engaged in the production, quality control and those who are in charge of drawing up the quality standards. For them all, we had been carrying out well-designed and well structured training programmes. These programmes are very popular with the industry and with the Government officials. We always have a waiting list for the candidates who undergo these training programmes."

2.28 It came out during the course of examination that the subject relating to use of pesticide was within the jurisdiction of Ministry of Agriculture. Asked whether the Ministry of Agriculture had ever approached the Institute to conduct training programmes for the farmers in some selected areas, IPFT replied in a written note as under:

"No Sir. Institute would be very happy to associate itself with the Ministry of Agriculture for conducting any training programme for promoting safety while using the pesticides. However, it would need additional funds for such additional activities."

2.29 In reply to a question about the need for educating the farmers in a big way, Chairman, IPFT stated during evidence:

"We have a very large farmers' community and therefore the education of illiterate farmers is a very big task. The agricultural extension programmes undertaken by the State Governments and the Central Government are fairly comprehensive ones. But what could be additionally done is to enthuse the manufacturers be-

cause they also have a very big role to play in assisting the existing machinery with their know-how to train the farmers and the extension workers on the right use of the crop protection chemicals which they are selling in the market etc."

2.30 During the course of evidence of the representatives of Department of Chemical and Petrochemical the Committee enquired about the views of the Ministry in regard to IPFT's role in training the farmers for safe use of pesticides. The Secretary, C&PC stated:-

"Sir, I would also like to say that apart from the Ministry of Agriculture, I think the IPFT can also play a very significant role in this kind of education to farmers. Just now, some of the large manufacturers are already associated with this Institute in terms of their membership and in the coming years when this membership is extended to a much larger cross section of the manufacturers, I think the IPFT should be in a position to give sufficient training not only to the main people in those manufacturing concerns but also to the farmers, in educating them to use the products through extension network. It will prove successful gradually, may be, in two to three years time."

D. IPFT as a Technical Coordinator Unit on Pesticide Formulation Development and Quality Control of RENPAP

2.31 Explaining the nature of activities being undertaken by the Institute as Technical Coordinator Unit of RENPAP, IPFT in a note stated:-

"A. The Pesticide Development Centre/Institute of Pesticide Formulation Technology was selected by the UNDP/UNIDO as a Technical Coordinator Unit for Pesticide Formulation and Quality Control of the Regional Network on Safe Pesticides production and Information for Asia and the Pacific(RENPAP). This selection was based on the availability of comprehensive laboratory, pilot plant, training and other associated facilities backed by skilled and trained scientists. As Technical Coordin-

tor Unit, the IPFT has been successfully rendering the following assistance to the RENPAP member countries:

Training in the field of safe and user friendly pesticide formulation development and quality control;

(a) In groups

(b) Individual indepth training.

So far a number of Government officials/industry representatives nominated by the respective Governments of the 15 countries of the RENPAP, *viz.* Afghanistan, Bangladesh, People's Republic of China, India, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Republic of Korea, Islamic Republic of Iran, Sri Lanka, Thailand and Vietnam have undergone training in groups and indepth training has been provided to representative from People's Republic of China, Indonesia, Iran and Sri Lanka.

B. IPFT has been nominating its scientists and engineers through the UNDP/UNIDO to serve as experts in the developing countries. So far three experts of the IPFT have served Sri Lanka, Thailand, India and Africa.

C. The IPFT is the Secretariat of the Regional Pesticides Analytical Council for Asia and the Pacific (REN PAC) in which 6 countries *viz.* People's Republic of China, Philippines, Indonesia, Thailand, South Korea and India are collaborating. The purpose of this collaborative testing programme is to standardise the analytical methods of testing for specific pesticides in order to facilitate trading of pesticides in the member countries of Asia and the Pacific, since acceptance of standards methods is vital for quality control in the export and import of pesticides. Also REN PAC is the associate of Collaborative International Pesticides Analytical Council Ltd. (CIPAC) and by virtue of this, IPFT has been included in the select list of internationally recognised laboratories engaged in pesticides analysis and quality control.

D. Besides functioning as the Regional Database Centre(RDC) for Economic pesticide Data collection work, IPFT has also taken up the responsibility as a Central Coordinating Unit (CCU), for coordinating the activities of Data Collection, Storage and Dissemination of Economic Pesticide Data in the 15 countries Network of the RENPAP ."

2.32 During the course of examination the Committee enquired whether the Institute had made any study to know the qualitative strength of the pesticides in the countries covered under UNDP/UNIDO Programmes vis-a-vis India particularly the China and Korea. IPFT in a note stated:-

"Quality control in Republic of Korea is very stringent and products in the market essentially meet the minimum quality standards. In India and China, however, due to large percentage of small scale formulators operating in the market using highly complex pesticide molecules, lot more is desired in terms of quality pesticides to safeguard the interests of the farmers."

2.33 When asked as to what extent RENPAP is becoming helpful to replace the hazardous pesticides through mutual sharing of experience among the member countries of this network, IPFT in a note replied:-

" RENPAP has been organising expert group meetings, workshops and training programmes to consider technologies and products being used in the developed and in the developing countries and has been fielding experts to assist in the replacement of hazardous pesticides with more user and environment friendly ones through mutual sharing of experts among the member countries of this Network."

2.34 The Committee further enquired whether UNDP/UNIDO have reviewed and their programmes being implemented by the Institute. IPFT in a note stated:-

"Yes, Sir, UNDP/UNIDO reviews the programmes on annual basis. To start with a Project Performance Evaluation Report is prepared based on a standard format which is assessed by various

authorities. This assessed report is thereafter circulated to the members of a Tripartite Committee comprising the Government of India officials of the Ministry of Chemicals and Fertilizers and Ministry of Finance, Department of Economic Affairs, UNDP/UNIDO and the project authorities. Reports are prepared based on this TPR review. The activities of the IPFT have been assessed positively throughout including in the last meeting of the TPR held on the 26th of July, 1995."

In this connection Secretary, C&PC also stated during evidence:—

"Actually, Tripartite Review is carried out. It is done between Government of India, that is, my Department, DEA, UNIDO and UNDP. The last review was done in July this year. To the best of my knowledge, the two foreign agencies—UNIDO and UNDP—were satisfied with the working of this Institute."

2.35 However, from the Conclusions and Recommendations of Tripartite Review held on 26th July, 1995 it is observed that there are certain areas where Institute has been advised to take action. These are as under :

1. The meeting concluded that except for outputs 2 and 3 under which progress is slow, progress towards achievement of other outputs and objectives is satisfactory.
2. The meeting emphasized the need for expeditious action for the setting up of microbiology laboratory and pesticide application technology laboratory in order to ensure timely achievement of outputs 2 and 3 respectively (Action:PA).
3. Action for the reorganization of IPFT presently in hand should be expedited (Action:PA).
4. The TPR meeting emphasised the need for the project to have a demonstrable impact in areas relating to occupational health and environment pollution both of which are interlinked. The meeting suggested that immediate attention should be paid to these

aspects and detailed proposals including plan of action and cost estimates should be prepared for approval and implementation including (i) comparative testing of sprayers & dusters by CERC, Ahmedabad (ii) holding of 3-4 workshops regarding applications in collaboration with RENPAP (iii) addressing occupational health and safety issues by establishing model units in industry clusters and holding workshops in collaboration with RENPAP (iv) play a catalytic role in establishing common effluent treatment plants in industry clusters in collaboration with Ministry of Environment. (Action:PA, Deptt. of Chemical)

5. The TPR meeting recommended that an end-user survey should be carried out under sub-contract arrangements to enable the project to respond effectively to industry needs. Detailed TOR should be prepared and arrangements made for carrying out this exercise in September-October 1995.(Action: PA/UNDP/UNIDO)

CHAPTER III

Manpower Planning

3.1 During the last three years, the total manpower strength of the institute was as follows :

	As on 31.3.93	31.3.94	31.3.95
Analytical	8	8	8
Formulation Lab.	8	8	8
Pilot Plant	9	9	9
Bio-Science	7	7	7
Administration/Finance	12	12	12
Total	44	44	44

(Some officers of Hindustan Insecticides are common with IPFT)

3.2 During the course of examination of the Institute the Committee pointed out that manpower strength of the Institute was stagnated at 44 and enquired whether the present strength was based on any O&M/Scientific study. IPFT in a written reply stated that an internal Committee headed by a Retd. Joint Secretary of the Ministry of Industry carried out a study to ascertain the manpower requirement of the Institute and the present manpower strength was based on this study.

3.3 On being asked further whether the growing activities of the Institute did not call for increase in manpower strength, the IPFT in a written note stated:

"The permanent set up of the Institute which was proposed quite some time ago has just been approved by the Ministry of Finance and is under implementation. It would indeed be necessary to strengthen with additional staff in some key areas including formulation development and analytical services. However, any increase would be made keeping in view the economic viability

of the Institute. Also state of art equipments needing less of manpower are being utilised in the Institute with comprehensive computer back up facilities."

3.4 In the context of common cadre of Hindustan Insecticides Ltd. with IPFT the Committee asked about the plans for having a separate cadre for the Institute. The Chairman, IPFT stated during evidence:

"We have been pursuing it from the day the Institute was created in the month of June 1991. I am very happy to inform you that last month, we have got clearance for the creation of the posts and the pay scales which was under the consideration for a very unusually long period of time. The final approval has come last month and we are in the process of having our own substantive staff."

3.5 When asked about the basis of present approved strength, Chairman, IPFT stated during evidence:

"As far as manpower is concerned, it has been decided after series of deliberations with the U.N. agencies as well as the Department of Agriculture, Ministry of Chemicals and Fertilisers and the Ministry of Finance to have the particular strength of manpower. The grant from U.N. come through the Department of Economic Affairs in the Ministry of Finance. If you see anywhere outside the country you will find that an institution of this sort in the research sector dealing with development of new technologies is not rated by the number of employees etc. but by the quality and training of the people and the degree of instrumentation. I would like to assure this hon. Committee that in the formulation technology development group we have highly trained manpower and equipments as a result of which we have been able to develop water-based formulations like suspension concentrate, water dispersible granules etc. These are of great technological value and are used in many of the EEC and developed countries. They are not looking for any other formulation to be purchased now because these are user-friendly and environment-friendly pesticide formulations."

3.6 During the course of examination of Department of Chemicals and Petro-Chemicals, the Committee enquired about the new sanctioned strength of the IPFT's Independent Cadre and whether it was adequate to carry out the activities of the Institute efficiently. The Department of Chemicals and Petro-Chemicals stated in a written note:

"The new sanctioned strength of the IPFT as approved by the Government is 40. The strength has been decided after considering the various activities identified for achieving the various objectives of the Institute which is confined to the development of newer, user and environment friendly pesticide formulations. In fact, an Institute of this kind in the research sector dealing with development of new technologies is not rated by the number of employees etc. but by the quality and training of the people and the quality of instrumentation it possesses. In view of this, the existing manpower sanctioned strength is considered adequate at present."

3.7 In this context, Secretary, Chemicals and Petro-Chemicals stated during evidence:

"This IPFT has been envisaged not as an extension agency but as a research agency, as an agency doing some fundamental R&D work in terms of using pesticide formulation in a better way. Most importantly we have been giving training to those who are going to train others. The Institute envisages that it will train those who are going to the field and train the farmers."

3.8 The Committee further enquired whether the new approved pay structure for scientists of the Institute was comparable with the best available in the chemical industry to attract experienced and talented people. Department of Chemicals and Petro-Chemicals in a note stated:

"The Institute receives funds from the Government. It attracts the provisions of Government rules pertaining to the fixation of

pay scales. According to the existing rules for similar societies like this Institute, it is mandatory to follow the Government pay scales structure including the Government pattern of DA. Therefore, the pay structure for the scientists of the Institute is not comparable with the best available in the chemical industry. However, since the Institute provides outstanding facilities for conducting research work needed for the development of latest varieties of pesticide formulations, it has been able to attract and retain well experienced and talented people."

CHAPTER IV

Financial Position of the Institute

4.1 United Nations Development Programme (UNDP) and United Nations Industrial Development Organisation (UNIDO) have been providing funds for the Country Project "Strengthening of Pesticide Development Centres Phase II" under three specific heads namely recruitment of consultants, training of personnel and purchase of instruments and equipments. The utilisation of funds under these three heads since the inception of the IPFT in 1981 are give below:

Utilisation of Funds

S.No.	year	Experts	Training	Equipment	Misc	Total
Phase- I		In Us\$				
1.	1982	42,556	—	579,599	1600	623,755
2.	1983	63,347	46,889	4,480	1944	116,660
3.	1984	47,101	64,970	26,916	1899	140,886
4.	1985	75,180	64,36	74,394	4085	218,026
5.	1986	98,059	38,894	170,197	2939	310,089
6.	1987	156,571	76,700	50,826	3056	287,153
7.	1988	49,445	133,45	172,026	4217	359,139
Phase-II						
8.	1989	6061	17,860	130,141	1054	155,116
9.	1990	69,305	31,556	485,171	4541	590,573
10.	1991	109,742	18,010	76,382	370	204,504
11.	1992	75,860	30,640	4,511	59109	190,112
12.	1993	73,900	108,357	124,878	10913	318,048
13.	1994	74,933	71,500	155,000	500	301,933
		942,060	525,157	20,54,521	96,219	38,15,994

4.2 In Addition to the above grants the Institute has received the following contributions from the Government and the industry during the last three years:

Year	Govt	Industry	Total	(Rs. In lakhs)
1992-93	38.00	6.00	44.00	
1993-94	64.00	4.00	68.00	
1994-95	39.59	15.20	54.59	

4.3 Explaining the funds position of the Institute, IPFT in a note stated:

"The Institute has received UNDP inputs in the form of machiery, equipments, training abroad, services of consultants, etc. and Government of India funds for salary of staff, construction of premises, contingencies, etc. The total of such assistance received from Government is Rs. 161 lakhs. It has also received contributions from pesticide industry totalling Rs. 42.20 lakhs. With a view to broadbase the Institute and to make it self-sufficient membership of the Institute is now open to the pesticide industry and others on payment of prescribed fees. Gradually the Institute is registering increasing income form the services rendered to the industry and other sources. Net incomes earned in the past 4 years are as follows:

1991-92	Rs. 0.71 lakhs
1992-93	Rs. 4.27 Lakhs
1993-94	Rs. 8.83 lakhs
1994-95	Rs. 20.00 lakhs (provisional)

With the help of Government grants and contributions received from industry a corpus fund has been set up and is being

augemented gradually to help the Institute to become self-sufficient as early as possible."

4.4 The Committee wanted to know whether present funds were adequate to carry out the activities of the Institute in an efficient manner and whether the matter was being pursued with the Ministry of Chemicals and Fertilisers for higher allocations IPFT stated in a written note:

"The Institute continued to make best efforts to strengthen its activities through the funds released by the Government of India. However, the need for upgrading the experimental and analytical laboratories for obtaining ISO recognition, installation of the biopesticides production facility which has been made available be the UNIDO and the furnishing of the hostel building could not be undertaken due to inadequacy of funds. This matter is being taken up with the Government."

4.5. The Committee further pointed out that Government grant to the Institute had come down from Rs. 64 lakhs in 1993-94 to Rs.39.59 lakhs in 1994-95. Asked whether the reduced grant had any adverse effect on the working or the Institute, Chairman, IPFT stated during evidence:

"We have been getting Rs. 37 lakhs from the Government annually over the last three years and that was just adequate to meet the salary, wages and recurring costs. We could not invest money for capital expenditure and we have with us the fermentor which is a very delicate equipment in which we can regulate the pressure, temperature and humidity, but we could not instal it because for the installation we need three rooms and special sterilization facilities so that dust etc. does not come in. We need sterile environment. It would require Rs.20 rsakhs. We have been waiting for almost three years, but unfortunately due to budgetary constraints of the Government, we could not get it. While

we got fairly costly equipment from abroad, we could not get the counterpart funding from the Government. We have been pursuing this and we are hopeful that some funds will come out of the Government to utilise for this purpose."

4.6 At a subsequent sitting of the Committee explaining the position regarding non-use of equipment, Chairman IPFT stated:

"There is only one equipment about which we had to face such a problem. The reason for it, is that the budgetary support which was committed by the Government of India was limited to Rs. 1.14 crore and this was based on the prevailing prices of construction, cost of material and salaries as in 1985. It was also based on the price of consumables in the year 1985. Although it was sanctioned by the U.N.D.P and the Government of India in 1989, the prices were as in 1985. Therefore, if you kindly see the escalation of cost of civil construction, salaries and wages and increase in the value of consumables you will find that there was no money left after meeting the initial commitment. There was no money left for modification of a room to make it sterile for installing this fermentor. We had been seeking escalation of the provision of Rs. 1.14 crore. But there had been constraints in the Government of India because there were other important projects than ours for approval. But I am very happy to say that we have now generated our own resources through the selling of our technology and through the analytical services that we are rendering and through training to those who need it. This year we are commissioning this instrument. I would also like to assure this august Committee that the equipment is in a very good order and it has been a part of the consignment received from the UNIDO and it will be commissioned by early next year and the research programme will start simultaneously."

4.7 It also come out that as against the original estimates of Rs. 1.14 crores, the final cost of the project went upto Rs. 3.62 crores. (other than UNDP's assistance).

4.8 In reply to question IPFT stated in a note that the requirement of funds made to the Government and the actual allocation made for the last three years were as follows:

Demand by IPFT Release by Min. (Rs. In lakhs)		
1994-95	Rs. 64.00	Rs.37.00
1995-96	Rs. 120.00	Rs.95.00
1996-97	Rs. 300.00	Rs.150.00 (Tentative)

4.9 During the course of examination of Department of Chemical & Petro Chemicals, the Committee wanted to know whether the Ministry analysed the funds requirements of the Institute and proposed to give sufficient funds to the Institute to enable it to function in an efficient manner. Department of Chemicals and Petro Chemicals stated in a written note:

“The Institute projects its requirements of funds to the Minstry at the time of the annual plan discussions. Efforts are made by the Ministry to meet the requirements of the Institute within the overall availability of funds to the Ministry. During the current year. The budgetary support of Rs. One crore has been approved. The Planning Commission is likely to recommend enhancing the budgetary support to Rs. 1.5 crores in 1996-97 to meet the requirements of the Institute for meeting its day-to-day costs, support to RENPAP and the CWC matters.

The grants given by the Government to the Institute during the last four years are as follows:

1992-93	Rs. 43 lakhs***
1993-94	Rs. 69 lakhs *
1994-95	Rs. 42 lakhs***
1995-96	Rs. 1.0 crore **

* Rs. 27 lakhs for the corpus fund.

** Includes grants for IPFT/RENPA/CWS matter.

*** Includes grants for RENPA.

4.10 Explaining it further, Secretary, Chemicals & Petro-chemicals stated during evidence:

“Since 1991-92 our endeavour has been to see that the budgetary support from the Government in that shape of grants should be in an ascending order, with a slight exception in the year 1994-95. In 1992-93, the Institute was given a grant of Rs. 43 lakh by the Government; in 1993-94, a grant of Rs.69 lakh was given in 1994-95, as I said, there appears to have been some sort of aberration when only Rs. 42 lakh was given; in 1995-96, we have made a provision of Rs. One crore for the Institute. For the last year of the Eighth Plan, that is 1996-97 recently my colleagues have had a detailed discussion with the working group in the Planning Commission, where they have projected a demand of Government support to the tune of Rs. 1.5 Crore.”

CHAPTER V

Review by the Government

5.1 The Secretary (C&PC) Ministry of Chemicals and Fertilisers oversees the functioning of the Institute through participation in the Governing Body Meetings and Annual General Meetings. Spelling out the nature of control being exercised by the Ministry over the Functioning of Institute, the IPFT in a note stated:

“The Institute is being run in accordance with the Memorandum of Association and Rules and Regulations framed by the Government. General Superintendence, direction and control of the affairs of the society and its income and property is vested in the Governing Body of the Institute constituted by the Government. The Chairman and the Director/Secretary are appointed by the Central Government. The Society is rendering reports to the Government. On its activities at regular intervals and Government Also reviews activities of the Institute and utilisation of funds by the Society while releasing Government grants. There is a Finance and Administrative Committee headed by the Joint Secretary (Chem) with Dy. Financial Advisor, Ministry of C&F as one of the members which oversees the finance and administration matters of the Society. The release of funds for the Society is based on analysis of its utilisation by the Ministry in accordance with the approved budget.”

Approval of the Ministry is required in all matters relating to the pay structures of the officers' set allowances, creation of posts and making appointment to posts the maximum of the scale of which exceeds Rs. 4.500.”

5.2 During the course of examination of the Department of C&PC, the Committee enquired about the *modus aperendi* excercised in reviewing the working of the IPFT. The Department of C&PC stated in a note:

“The working of the Institute is periodically reviewed in the meetings of the Finance and Admn. Committee which is headed

by the Joint Secretary (Chemicals) and through Tripartite Review (TPR) and the Governing Body, which *inter-alia* have representatives from the Department of Chemicals and Petro-chemicals.”

5.3 On being pointed out by the Committee that the Institute was in establishing stage and its services were that need of the hour, and as such it required more support from the Government, the Department of C&PC stated that:

“They had been giving all the necessary support in terms of allocation of funds, guidance and co-ordination with the concerned departments and the Ministries.”

5.4 In reply to a further question, the Department of C&PC stated that the working of the Institute has so far not reviewed by C&AG or any other agency.

5.5 The Committee further pointed out that there was a need for establishing close co-ordination between the Ministries of Chemicals, Fertilisers and Agriculture to work towards safer use of pesticides. The Department of C&PC replied in a note:

“The Joint Secretary, Ministry of Agriculture is the member of the Governing Body of the Institute. It is through the representative of the Ministry of Agriculture in the Governing Body the Ministry has been interacting for the promotion of safe use of pesticides. The representation in the Governing Body of the Institute of Pesticide industry and a major public sector undertakings i.e HIL, provides on interface with the industry thereby enabling them to promote safe use of pesticides.”

5.6 On being further asked as to whether IPFT had ever been directed to take specific action after having consultations with Department of Fertilisers and Ministry of Agriculture particularly to deal with specific pests etc., the Department of C& PC stated in a note:

“The resistance of pests to some pesticides and the resurgence is known particularly for the cotton crop. This is on account of unscientific use of the pesticides and is being dealt with by the Ministry of Agriculture through their extension network in collaboration with the State Governments. IPFT in various review meetings has been advised to take up the production of bio pesticides and botanical pesticides including Neem for larger benefit of the farming community.”

PART II

Recommendations/Conclusions of the Committee

1. With the aim of providing the Indian farmers with safer and user friendly pesticide formulations, the Government had undertaken two projects with the help of United Nations Development Programme (UNDP) and United Nations Industrial Development Organisation (UNIDO) in 1981 and 1989 respectively. In order to ensure effective utilisation of various outputs of these projects, the Government decided to set up an institute. Accordingly Institute of Pesticide Formulation Technology (IPFT) was Registered in May 1991 under Societies Registration Act. Despite the short tenure of the Institute, the committee decided to examine its working keeping in view the needs of country's farming community for safer and eco-friendly pesticides. The committee's findings are detailed in succeeding paragraphs.

2. The Committee regret to note that even though the IPFT was formed in 1991. The Legal transfer of assets/ properties in its favour is yet to be done. The major areas of the assets which are in common with Hindustan Insecticides Ltd. (A PSU) are land and buildings and equipments/machines (purchased with UNDP funds). The Committee were informed by the representatives of IPFT as also of the Ministry during their evidence that the land and buildings and machines etc. which are to be transferred to IPFT had now been identified HIL has got its Board clearance for transfer of the identified assets. Since a clear title of land and buildings and other assets is essential for any organisation for its smooth working. The Committee desire that all legal formalities in this regard should be completed within a period of three months from the presentation of the Committee's Report.

3. The IPFT is being managed by a Governing body which consists of representatives from Ministries of Chemicals, Fertilisers, Agriculture, Health, PSUs manufacturing pesticides, two State Governments and from the Pesticide Industry. The Governing Body is required to

meet twice a year. Besides, two committees *viz.* Finance and Administration Committee and Technical Committee have been constituted to expedite taking the decisions. These committees consist of selected members of the Governing Body. The Institute has a part time Chairman and the next post of the Secretary to the Institute is in common cadre with Hindustan Insecticides Ltd. The Committee were informed by the IPFT that the present arrangements were adequate to run the Institute smoothly. The Committee however, feel that a full time Chief Executive (Chairman or Director) for the Institute is a must for its smooth functioning and for achieving its role and activities fully.

4. The objectives of IPFT as laid down in its bye-laws *inter alia* include undertaking research in pesticide formulations. Advancement of pesticide formulations, research and development, promotion and transfer of pesticide formulation technology to the industrial sector, increasing and diffusing pesticide formulations knowledge and by its professional contacts, meetings, reports, papers, discussions and publications promoting scientific interests and enquiry. The Institute has also been given the role of technical Coordinator Unit of the Regional Network on Pesticides for Asia and the Pacific (RENPAP) of the UNDP/UNIDO on Pesticides Formulation and Quality Control. The Committee were informed by the IPFT that the Institute had made quite considerable progress in the key areas *viz.* Pesticide formulations, training, analytical services. Reportedly the Institute has been performing its role as coordinator unit for UNDP/UNIDO assisted programmes. In reply to specific queries of the Committee about the assessment of the Ministry in regard to achieving the objectives by IPFT, the Secretary C&PC was candid in his admission that a formal study has not been conducted by the Ministry so far. He stated that the Institute was about 5 years old and out of which the initial 2-3 years were of formative stage. He however, agreed that after 2-3 years when the Institute starts working in full swing they would carry out an in depth study of the working of the Institute. The Committee would like the Government to have an in-depth review of the working of the Institute at regular intervals with a view to identify the weak areas

for taking timely remedial measures. The Committee also desire that quantifiable targets should be fixed for each of the objectives for achieving them in time bound programme.

5. One of the main functions of the IPFT is to formulate safer and eco-friendly pesticides. The Committee are distressed to note that the country is far behind in the matter of production and use of latest pesticides which are safer and eco-friendly. It came out during course or examination that developed countries are using Water Dispersible Granules (WG), Suspension Concentrates (SC), Concentrated Granules (CW) Micro Emulsions (ME) and Controlled Release Formulations (CR) which are far more safe and environment friendly. However, old generation pesticides viz. Wettable Powder (WP), Dust (D), Granules (G) etc. are still being used in our country. Admittedly the old generation pesticides are not user and environment friendly. It also came out that some of the pesticides/ chemicals which have been banned in developed countries are still being used in our country. The Committee were startled to find that none of the Indian industries/R&D laboratories has so far been able to develop a new pesticide molecule. This has not been possible, on account of high cost (i.e about US\$ 50-60 million for a molecule) and long period (about 15-20 years) required for developing a new molecule. The committee have been informed that apart from IPFT, several government agencies and private industries are engaged in R&D in pesticide formulations. IPFT has also informed that they have formulated some of the new generation pesticides. Since safe and eco-friendly pesticides are essential input for the growing needs of the food production in the country, the Committee would like the Government to ensure coordinated efforts by the various agencies including IPFT for developing new generation pesticides which are not only safer and eco-friendly but which suit our specific needs, keeping in view the local climate and specific pests. Needless to emphasise that the Government, would take necessary action for phasing out the old generation pesticides.

secticides Rules, 1971 and keeping in view the literacy status of Indian farmers a colour scheme to enable the user to recognise the extent of hazard involved in the handling of a particular pesticide has been made mandatory. In this connection, Chairman IPFT pleaded before the committee that as prevalent in developed countries like USA there was need for a piece of legislation to make it compulsory for the manufacturers to produce only safer eco-friendly and water based pesticides. The administrative Ministry viz. the Department of Chemicals and Petro-chemicals informed the committee that matter needs to be pursued with Ministry of Agriculture under which the subject of pesticides falls. However, when asked about the views of Ministry of Agriculture in this regard, the Committee were informed that the safer and eco-friendly pesticides were already being regulated under the existing Insecticides Act 1968 and there was no need for bringing another act for this purpose. The Committee would like the Govt./Dept. of Chemicals and Petro-Chemicals to examine this issue afresh in right earnest, in consultation with Ministry of Agriculture for taking effective measures to safeguard the interests of the Indian Farming community. After proper examination of the matter, if it is found that the present act is adequate enough to deal with the situation, then effective steps should be taken to implement the provisions, otherwise Government should not hesitate in bringing out comprehensive piece of the legislation on the subject. The committee would await specific Government reply in this regard.

7. Another area of operations of IPFT is to provide analytical facilities to pesticide industry and Bureau of Indian Standards (BIS) IPFT is providing this facility/service to about 30 Institutes/ Industries. Admittedly the analytical facilities of the Institute are not adequate for the pesticide industry and there is proposal to expand the activities. The Committee accordingly recommend that a time bound programme should be chalked out to expand and upgrade the analytical facilities of the Institute to meet the country's demand in this regard.

8. The IPFT has been imparting training to the nominees of the industry. Regulatory authorities of the central and state Government

and the official of the Bureau of Indian standards. During the last 3 years, the Institute has conducted 17 training programmes where 426 participants were imparted training. Presently the Institute is not giving training to the farmers. In Committee's view imparting training to some 400 persons (duration ranged form 1 to 12 days) in a big country like India over a period of 3 years is hardly impressive. The Committee would like the IPFT/Minstry to enhance the training programmes progressively. The Committee also desire that after stabilising the activities of the Institute, possibility of imparting training to farmers may also be explored.

9. The Committee find that the Institute has been selected by UNDP/UNIDO as technical coordinator unit for Pesticide Formulation and quality control of the Regional Network on safe pesticides production and information for Asia and the Pacific (RENPAP) under this programme, the Institute has so far provided training to the participants from 15 countries. The IPFT as also the Ministry informed the committee that the institute has performed this role to the satisfaction of UNIDO and UNDP, The Committee however, find from the Tripartite Review Report (July 1995 i.e, Review conducted by representatives of UNIDO, UNDP, Deptt. of Chemicals and Petro-Chemicals, Ministry of Finance and Institute of Pesticide Formulation Technology) that in certain areas, progress is slow and it was emphasised to expedite action on the identified areas. The committee would like to be apprised of the action taken on each of the observations/comments made in the Tripartite Review Report.

10. The Committee's examination has revealed that not to speak of the developed countries like USA, India is far behind even the countries like South Korea in the area of production of quality pesticides. The Committee feel that a lot of more efforts are needed in this direction. The committee would like to emphasise that to safeguard the interests of farmers and to maintain the fertility of the soil, joint efforts of the concerned agencies are required to improve the production and distribution of quality/safe pesticides.

11. During the last 3 years the total manpower strength of the Institute (including HIL officers working in common with IPFT) has been 44 only. The present strength which is considered adequate for the time being is based on the study conducted by an internal committee headed by a Retd. Joint Secretary of Ministry of Industry. According to the Institute, it would indeed be necessary to strengthen the staff in some key areas including formulation development and analytical services. The Committee regret to note that even after a period or 5 years since the formation of IPFT, many of its officers are in common with Hindustan insecticides Ltd. The Committee do not approve of the concept of dual responsibility of the concerned employees. Since the Ministry has now approved the independent cadre for the Institute, effective steps should be taken to strengthen it. Needless to emphasise that the pay structure of the organisation should be good enough to attract the qualified scientists etc. To maintain the standards of the services rendered by the Institute.

12. The Committee note that the Institute get assistance from UNIDO/UNDP in the form of equipments / machinery/consultants etc., and Government of India provided funds for salary of staff. Construction of premises etc. The total Government Assistance to the Institute so far has been Rs. 171 lakhs. It also got contribution for the pesticide industry totalling Rs. 42.20 lakhs. It came out during course of examination that due to paucity of funds, one costly equipment could not be installed as matching funds were not available for the premises for the equipment. The Committee were informed that this situation arose as the budget estimates for the project were based on 1985 prices. With the increase of annual grant of the Government. From Rs. 37 lakhs upto 1994.95 to about Rs. 1 crore in 1995-96 and proposed grant of Rs. 1.5 crores for 1996-97 the funds position of the Institute has now been improved. Besides the earnings of the Institute have increased from Rs. 4 lakhs in 1992-93 to Rs. 20 lakhs in 1994-95. The Committee have also been informed that in the matter of funds requirements, the Institute wants to become self-reliant as early as possible. Till that stage (i.e. becoming self-reliant) the committee would like the Government to ensure that activities of the Institute do not suffer on account of paucity of funds.

13. It also came out during the course of examination that as against the original estimates of Rs. 1.14 crores (other than UNDPs assistance) for setting up the Institute, the project cost went upto Rs. 3.62 crores. The Committee were informed that the initial estimates were based on 1985 prices and the cost of all inputs increased subsequently. As the Committee have not gone into item-wise details , they would like the Government to ensure that the increase was justifiable one.

14. The Committee have been informed that the working of the Institute is reviewed by the Ministry by Governing Body Meetings (held so far under the Chairmanship of Secretary of the Ministry) and through Finance and Administration Committee(headed by Joint Secretary of the Ministry) and through Annual General Meetings. The performance of the Institute is also reviewed through Tripartite Reviews. It appears to the Committee that the Institute is working as an extended unit of the Government. As recommend earlier in the Report, the Committee desire that the Institute should have a full time Chief Executive and he should be given a free hand to run to smoothly and efficiently. Thereafter the Government should review its functioning on regular basis as is the prevailing practice in regard to other autonomous Institutes/Organisations.

New Delhi:
February 29, 1996
Phalguna 10, 1917(Saka)

SRIBALLAV PANIGRAHI,
Chairman,
Standing Committee on
Petroleum and Chemicals.

APPENDIX

MINUTES OF THE SITTINGS OF THE COMMITTEE

Minutes of the Twelfth Sitting of the Standing Committee on Petroleum and Chemicals held on 23rd August, 1995

The Committee sat from 1530 hrs. to 1700 hrs.

PRESENT

Shri Sriballav Panigrahi — Chairman

MEMBERS

Lok Sabha

2. Dr. Ravi Mallu
3. Shri Surinder Singh Kairon
4. Shri C.P Mudalagiriyappa
5. Shri Gopi Nath Gajapathi
6. Shri Janardan Prasad Misra
7. Shri Kashiram Rana
8. Shri Ram Nihore Rai
9. Shri Uddhab Barman
10. Dr. Asim Bala
11. Shri Muhiram Saikia

Rajya Sabha

12. Shri Mohd. Masud Khan
13. Shri V. Narayanasamy
14. Shri Yerra Narayanaswamy
15. Shri Ramji Lal

SECRETARIAT

1. Shri Brahm Dutt	—	<i>Under Secretary</i>
2. Shri S.N. Dargan	—	<i>Assistant Director</i>

REPRESENTATIVES OF INSTITUTE OF PESTICIDE FORMULATION TECHNOLOGY (IPFT)

1. Dr. S.P Dhua	— <i>Chairman, IPFT</i>
2. Dr. S.Y Pandey	— <i>Head Analytical Division, IPFT</i>
3. Shri M.M Srivastava	— <i>Director (Chemicals)</i>
4. Dr. Kawal Dhari	— <i>Secretary, IPFT</i>

The Committee took oral evidence of the representatives of Institute of Pesticide Formulation Technology (IPFT) in connection with examination of working of IPFT.

2. The main issues which came up for discussion include level of Pesticide Technology in developed countries and *vis-a vis* in India. Control of Pests by applying safe pesticides impact of pesticides on ecosystem problems caused by fungal diseases, education and training of farmers for safe application of Pesticides etc.

3. A verbatim record of the proceedings of the Sitting has been kept.

THE COMMITTEE THEN ADJOURNED.

**Minutes of the Thirteenth Sitting of the Standing Committee on
Petroleum and Chemicals held on 8th September, 1995**

The Committee sat from 1030 hrs. to 1245 hrs.

PRESENT

Shri Sriballav Panigrahi — *Chairman*

MEMBERS

Lok Sabha

2. Shri Barelal Jatav
3. Dr. Ravi Mallu
4. Shri C.P Mudalagiriyappa
5. Shri Arvind Tulshiram Kamble
6. Shri Gopinath Gajapathi
7. Shri. K Ramamurthee Tindivanam
8. Dr. Laxminarain Pandey
9. Shri Rameshwar Patidar
10. Shri Somabhai Patel
11. Shri Ram Nihore Rai
12. Shri Surya Narayan Singh
13. Shri Simon Marandi
14. Shri Hari Kishore Singh

Rajya Sabha

15. Shri E. Balanandan
16. Shri Molhd. Masud Khan
17. Shri V. Narayanasamy
18. Shri Ramji Lal
19. Shri S.S Surjewala
20. Shri Dineshbhai Trivedi

SECRETARIAT

1. Shri G.R Juneja	—	<i>Deputy Secretary</i>
2. Shri Barn Dutt	—	<i>Under Secretary</i>
3. Shri S.N Dargan	—	<i>Assistant Director</i>

**Representatives of Institute of Pesticide Formulation Technology
(IPFT)**

1. Dr. S.P Dhua, Chairman, IPFT
2. Dr. S.Y. Pandey, Head Analytical Division, IPFT
3. Shri M.M. Sirvastava, Director(Chemicals)
4. DR. Kawal Dhari, Secretary, IPFT

The Committee took further evidence of the representatives of IPFT in connection with examination of working of IPFT which remained inconclusive at the sitting of the committee held on 23rd August, 1995.

2. The main issues which came up for discussion include financial position of the Institute, (including its requirement, its projection, response of the Government.) transfer of assets, manpower strength (its own cadre) user Friendly quality and water based pesticides, Intellectual Property Rights, balance of N., P& K, Cooperation of Agriculture Ministry in the working of larger programmes etc.

3. A Verbatim Record of the proceedings of the sitting has been kept

THE COMMITTEE THEN ADJOURNED.

Minutes of the Sixteenth sitting of the Standing Committee on Petroleum and chemicals held on 15th November, 1995.

The Committee sat from 1500 hrs, to 1715 hrs.

PRESENT

Shri Sriballav Panigrahi — Chairman

MEMBERS

Lok Sabha

2. **DR. Ravi Mallu**
3. **Shri Surinder Singh Kairon**
4. **Shri Sant Ram Singla**
5. **Shri C.P Mudalagiriappa**
6. **Shri V.S Vijayaraghavan**
7. **Shri Gopi Nath Gajapathi**
8. **Shri K. Ramamurthee Tindivanam**
9. **Shri Kashiram Rana**
10. **Shri Ratilal Kalidas Verma**
11. **Shri Sombhai Patal**
12. **Shri Ram Nihore Rai**
13. **Dr. Asim Bala**
14. **Shri Muhibram Saikia**

Rajya Sabha

15. **Shri Lakkhiram Agarwal**
16. **Shri E. Balanandan**
17. **Shri Mohd. Masud Khan**
18. **Shri Bhagaban Majhi**
19. **Shri V. Narayanasamy**

20. Shri Yerra Narayanaswamy
21. Shri Ramji Lal
22. Shri Chimandhai Haribhai Shukla
23. Shi S.S Surjewala
24. Shri Dineshbhai Trivedi

SECRETARIAT

1. Shri G.R Juneja — *Deputy Secretary*
2. Shri Brahm Dut — *Under Secretary*
3. Shri S.N. Dargan — *Assistant Director*

**Representatives of M/o Chemicals and Fertilizers, Deptt
of Chemicals & Petro-Chemicals**

1. Shri N.R. Banerjee, Secretary Chemicals & Petrochemicals
2. Shri P.C. Rawal Joint Secretary (Chemicals)
3. Shri M.M Srivastava, Director (Chemicals)
4. Dr. S.P Dhua, Chairman (IPFT)
5. Shri B.B.Goyal, Dy. Financial Advisor

2. The main issues which came up for discussion include need for conducting a study to identify the problems of the Institute at Government level functioning of the Governing Body, Manpower study implication of the General Agreement on Tariff and Trade (GATT) production and use of Neem products safer and friendly use of pesticides formulations, Farmers Training Programmes and comparison with developed countries.

3. A Verbatim Record of the proceedings of the sitting has been kept.

THE COMMITTEE THEN ADJOURNED.

**Minutes of the Twenty-second sitting of the Standing Committee on
Petroleum and Chemicals held on 26th February , 1996**

The Committee sat from 1600 hrs. to 1645 hrs.

PRESENT

Shri Sriballav Panigrahi — *Chairman*

MEMBERS

Lok Sabha

2. Shri Sant Ram Singla
3. Shri C.P. Mudalagiriyappa
4. Shri V.S Vijayaraghavan
5. Shri M. Krishnaswamy
6. Shri Ratilal Kalidas Verma
7. Shri Devendra Prasad Yadav
8. Shri Ram Nihore Rai
9. Dr. Asim Bala

Rajya Sabha

10. Shri Mohd. Masud Khan
11. Shri V. Narayanaswamy
12. Shri Ramji Lal
13. Shri S.S. Surjewala
14. Shri Dineshbhai Trivedi

SECRETARIAT

1. Shri Brahm Dutt — *Under Secretary*
2. Shri S.N Dargan — *Assistant Director*

The Committee considered the draft Report on the Institute of Pesti-

cide Formulation Technology, (Ministry of Chemicals & Fertilizers, Deptt. of Chemicals & Petro-Chemicals). After some discussion, the Committee adopted the Report.

2. The Committee also authorised the Chairman to finalise the Report after factual verification by the Department of Chemicals and Petro Chemicals and present the same to Parliament.

3. The Committee then adjourned.