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**ECONOMIC COMMISSION FOR EUROPE**

**COMMITTEE FOR TRADE, INDUSTRY  
AND ENTERPRISE DEVELOPMENT**

**AD HOC GROUP OF EXPERTS  
ON THE CHEMICAL INDUSTRY**

Second session, 28-30 April 1999  
(Item 8 of the provisional agenda)

**ACTIVITIES OF OTHER UNITED NATIONS AND OTHER INTERNATIONAL BODIES  
CONCERNED WITH THE CHEMICAL INDUSTRY**

- (a) **Other United Nations bodies and specialized agencies**
- (b) **Other International organizations**
- (c) **Other Subsidiary Bodies of the Commission and of the Executive Body for the Convention on Long-range Transboundary Air Pollution**

**Note by the secretariat**

1. The present Note is designed to inform the ad hoc Group of Experts on the Chemical Industry about the activities of other bodies of the United Nations, other intergovernmental and international organizations and other subsidiary bodies of the Commission and of the Executive Body for the convention on long-range transboundary air pollution which relate to the chemical industry.

(a) **Other United Nations bodies and specialized agencies**

2. The following United Nations bodies and specialized agencies responded to our request for information, stating that it had no activities relevant to the chemical industry in its programmes:

Economic Commission for Africa (ECA)  
Food and Agriculture Organization of the United Nations (FAO)  
International Maritime Organization (IMO)  
The World Bank

## **ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA (ESCWA)**

3. The secretariat of the Economic and Social Commission for Western Asia has produced a 76 page report (E/ESCWA/ED/1997/6, published in 1998) on Challenges and Opportunities of the New International Trade Agreements (Uruguay Round) for ESCWA Member Countries in Selected Sectors: Crude Oil, Petroleum Products and Petrochemicals.

4. The following United Nations specialized agencies responded to our request for information, and provided reports on their activities. These reports are attached in the annex to this document:

International Labour Organization (ILO)  
International Programme on Chemical Safety (IPCS)

### **(b) Other intergovernmental and international organizations**

5. In the annex to this document reports will be found on activities of the following intergovernmental organizations:

International Rubber Study Group (IRSG)  
Organisation for Economic Cooperation and Development (OECD)  
Organisation for the Prohibition of Chemical Weapons (OPCW)  
World Trade Organization (WTO)

## **THE WORLD CUSTOMS ORGANIZATION**

6. The World Customs Organization forwarded several extensive documents concerned with Criteria for Distinguishing between Medicaments and Premixes Containing Antibiotics (42.195/SSC-3) and Classification of Certain Pharmaceutical Products and Intermediates (42.825/SSC-3) as well as the Draft Agenda for the 14th Session of the Scientific Sub-Committee (42.90/SSC-1).

7. In the annex to this document a report will be found on the activities of the following international organization:

The European Chemical Industry Council (CEFIC)

### **(c) Other subsidiary bodies of the Commission and of the Executive Body for the Convention on Long-range Transboundary Air Pollution**

8. For ease of reference and with the aim of avoiding duplication of effort, activities and projects of possible common interest are grouped under the three sub-programmes of the programme of work of the ad hoc Group of Experts on the Chemical Industry.

## **PROGRAMME ACTIVITY B.1**

### **Sustainable Development**

- B.1.1 Pilot project demonstrating the environmental clean-up of selected sites polluted by chemicals*
- B.1.2 Comparative data bank on chemical legislation in the countries of the UN/ECE region*
- B.1.3 Seminars and workshops on sustainable development in the chemical industry*
- B.1.4 Regional Environmental Management Centre for the Chemical Industry*

Environment

- 1.3 Implementation of the Convention on the Transboundary Effects of Industrial Accidents
- 1.6 Convention on Environmental Impact Assessment in a Transboundary Context
- 2.1 ECE Environmental performance Review Programme
- 3.1 Energy and the Environment
- 3.3 Sustainable consumption patterns

Human Settlements

- 10.1.2 Sustainable consumption patterns
- 10.1.6 Major trends characterizing human settlements development

Statistics

- 03.5 Environmental statistics
- 03.5.2 Environmental accounting
- 03.5.3 Environmental databases and reporting
- 03.11 Industrial statistics

Transport

- 02.7 Regulations on the Transport of Dangerous Goods by Road, Rail, Inland Waterways and Combined Transport
- .. Development of a globally harmonized system of classification and labelling of chemicals (in cooperation with OECD and ILO) by the ECOSOC Committee of Experts on the Transport of Dangerous Goods for which ECE provides secretariat services.

PROGRAMME ACTIVITY B.2.

Restructuring and privatization

- B.2.2 Restructuring and Modernization of the Chemical Industry of Countries in Transition*
- B.2.4 Directory of Chemical Producers and Products*
- B.2.5 Study tours in areas undergoing restructuring of their chemical industry*

Human Settlements

- 10.1.3 Land registration and land markets

PROGRAMME ACTIVITY B.3

Statistics and Information Services

- B.3.1 The Chemical Industry - Annual Review*
- B.3.5 Round Table Discussions on the Chemical Industry*

Energy

06.6      Analysis of significant new developments affecting energy demand and supply in the short- and medium-term, pricing policies and security of supply, in accordance with the programme of work of the Committee on Sustainable Energy adopted at its seventh session in November 1997

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**ACTIVITIES OF OTHER INTERGOVERNMENTAL  
AND INTERNATIONAL ORGANIZATIONS**

**Annex**

**INTERNATIONAL LABOUR ORGANIZATION (ILO)  
Chemical industries sector**

**BACKGROUND**

1. A very wide variety of products is encompassed by the term "chemical industries". They range from "commodity" petrochemicals such as ethylene, propylene and their associated polymers -- which are produced to standardized specifications and in large volumes -- to pharmaceuticals and fine chemicals, which are high value added, low-volume products with very specific characteristics. Also included are various industrial chemicals such as alkalis and chlorine; industrial gases; components for fertilizers and pesticides; paints and related products; synthetic rubber; dyestuffs; soaps and detergents; flavours and fragrances; synthetic fibres. They correspond to categories 351 and 352 in the International Standard Industrial Classification. In countries which are major chemical producers, the aggregate value of these products typically represents a major share of manufacturing output (12% in Western Europe), and/or of exports. Chemicals represent 12% of world exports of manufactures. World chemical output exceeds \$1.3 trillion and, in volume terms, 400 million tonnes.

2. Most chemical products are for industrial use. Most major sectors are heavy users of chemical inputs, including the chemical industry itself (it is its own best customer). Major end-users include the automobile, electronic, construction and textile industries. Traditionally three regions have accounted for the bulk (75-80%) of chemical output: Western Europe, North America and Japan. However, in recent years the geographical distribution of production has shifted somewhat, as chemical enterprises have followed the end-user industries, and these have been redeploying to fast-growing or middle-income regions such as Asia and Latin America. The Middle East has also become a significant chemical-producing region due to its abundant and inexpensive supplies of oil and natural gas, which are important feedstocks for many basic chemicals.

**EMPLOYMENT AND TRAINING**

3. Over the last two decades worldwide employment in the chemical industries has risen, but much more slowly than the rise in output; in industrial countries there has been a slow, steady decline in the absolute number employed, combined with a steady growth in output. The industries are generally capital-intensive and account for a smaller portion of employment than of output (that is direct employment; if indirect employment effects are considered, the impact is much greater). Total employment worldwide in 1991 was about 12.5 million. The geographical distribution of employment is quite different from that of output. Whereas Western Europe, the United States and Japan consistently accounted for between two-thirds and three-quarters of world chemicals output between 1970 and 1990, their share of employment over this period fell from just under one-half to just over one-quarter (27% in 1991). Most of the discrepancy can be attributed to China and the countries of the former Soviet Union. China's chemical industries employed about 4.2 million persons in 1991, or about one-third of the world total, whereas its output represented only about 5%. Similarly, the former Soviet Union, together with

the countries of Central and Eastern Europe accounted for about 20% of world employment but for only 5% of output. As these countries increasingly introduce modern production technologies and market-based principles, substantial reductions in employment can be expected.

4. In modern chemical enterprises a high proportion of employees consists of white-collar staff (marketing, sales and technical services personnel): e.g. about 45% in Finland, the UK and the United States. The portion of the workforce that is highly educated is also greater than in most industries. In Japan, for example, 34% of the chemical workforce is university-trained. In countries that have employment breakdowns by sex, women typically represent 20-35% of the workforce. Driven by concerns about productivity and competitiveness, the use of contract labour appears to have increased in many countries in recent years, although it is less common in production-related activities than in capital projects and site services (maintenance, office cleaning, transport/distribution, canteen, security, etc.). The same concerns are often leading to reviews of job design and job content, and to an emphasis on flexible, multi-skilled workforces. As plants are becoming more sophisticated and automated, changes in work organization and shift work are being introduced to allow equipment to be operated continuously or for longer periods. These technology-driven changes also tend to mean fewer jobs for unskilled or less skilled workers, while higher training is demanded for technicians and plant operatives. The key to successful training is a solid basic scientific education for the subsequent acquisition of more advanced techniques.

#### WORK ORGANIZATION

5. Continuous process operations are common in many parts of the chemical industries, in view of the difficulty and high cost of shutting down and restarting operations and the need to use expensive equipment continuously. In the production of basic chemicals, the proportion of workers on shift work is commonly between 20% and 35%, significantly higher than in other manufacturing sectors. Among production workers, and in such industry segments as rubber and plastics, the figures can be higher. Most of these are on continuous shift work, i.e. in plants which operate on a 24-hour, 7-day basis. Various work patterns have been devised to facilitate workers' adaptation to the requirements of shift work or to compensate them, financially or through time off, for the night and weekend work and the irregular work schedules involved. These rotas or allowances vary considerably over time and from one enterprise or country to another.

#### HEALTH, SAFETY AND ENVIRONMENT

6. By far the most important labour issue facing these industries is how to produce and use their products in a manner that is safe for the persons involved and for the environment. Close to 10 million natural and man-made chemical substances have been identified, and at least 1,000 new substances are added to the list each year. Approximately 100,000 substances are produced in significant industrial quantities. Although most new chemicals cannot be marketed until they have had a minimum amount of testing, data on existing chemicals is often insufficient to ensure proper hazard control. Only some 3,000 chemicals have undergone proper hazard assessment; even less information is available concerning mixtures of chemicals.

7. Workers engaged in the production of chemicals are not the only, or perhaps even the main, group at risk. Modern chemical enterprises in industrialized countries usually have the means and infrastructure to put in place and apply appropriate procedures and standards to ensure that chemical risks are kept to a minimum. However, enterprises in developing countries and/or smaller enterprises may not have such means. Or they may face other problems, such as literacy and language problems which prevent available manuals and training materials from having the intended effect. Much of the

problem concerns those who use the chemicals. Agricultural workers, exposed to pesticides and herbicides, are a particularly vulnerable group.

## ILO ACTIVITIES

8. Labour issues related to the production of chemicals have long been under review in the Sectoral Activities Department and its tripartite sectoral meetings: the Chemical Industries Committee met 11 times between 1948 and 1995, and in the new arrangements put into effect in 1996 the chemical industries are one of 22 sectoral groups that will get continuing attention. A tripartite meeting on voluntary initiatives affecting education and training in safety, health and the environment in chemical industries was held in February 1999.

9. Extensive standard-setting and operational activities related to the health, safety and environmental aspects of chemicals are carried out by the Working Conditions and Environment Department. A major part of this work has consisted of the adoption and promotion of the Chemicals Convention, 1990 (No. 170) and accompanying Recommendation, and the Prevention of Major Industrial Accidents Convention, 1993 (No. 174), and accompanying Recommendation. Technical cooperation projects, and regional training seminars and symposia, have been held in all the developing and transitional regions. The emphasis has been on establishing and strengthening national capacities related to chemical safety. In particular, assistance is provided in developing legislation; strengthening of national institutions through training and through networking with relevant authorities in other countries; and helping establish and run safety and health information centres. The Conventions are backed up by codes of practice and manuals which provide practical guidance for putting them into effect.

10. ILO participates actively in broader international efforts related to chemical safety, such as the International Programme on Chemical Safety (IPCS) in which it is joined by the World Health Organization and the United Nations Environment Programme; and the Inter-organization Programme for the Sound Management of Chemicals (IOMC) in which other agencies also participate. In these activities the ILO plays a lead role with respect to the international harmonization of systems for the classification and labelling of chemicals. Standardization of classification is essential for proper labelling, which in turn is basic for improved safety systems.

11. Operational activities will be further developed in 1998-99 through the proposed Global Programme on Occupational Safety, Health and the Environment.

### **Tripartite Meeting on Voluntary Initiatives Affecting Training and Education on Safety, Health and Environment in the Chemical Industries, Geneva, 22-26 February 1999**

12. This meeting is one of a regular series of tripartite sectoral meetings - comprising representatives of governments, employers and workers - under the auspices of the International Labour Organization held to discuss current employment and labour issues of importance in the industry concerned and to provide guidance for action, at national and international levels, by employers' and workers' organizations, governments and the ILO itself.

13. The participants represent the governments, employers and workers from a cross-section of countries with chemical industries, including most of the major producers. In addition, the International Organisation of Employers, the relevant international trade union confederations, and a number of other non-governmental organizations (NGOs) concerned with this sector are expected to be present.

14. Most sessions of the meeting are open to the general public, but the right to take the floor is restricted to the official delegates, to technical advisers accompanying them, and to representatives of invited intergovernmental and non-governmental organizations.

15. The official delegates will comprise equal numbers of employer, worker and government representatives (23 for each group).

16. The purpose of the meeting is to exchange views on voluntary initiatives affecting training and education on safety, health and environment in the chemical industries; to adopt conclusions that include guidance and proposals for further action; and to adopt a report on the discussion. The meeting may also adopt resolutions. The "conclusions" embody the consensus of the meeting on the topic being considered and on the kind of policy actions that are appropriate at national and international level. The "resolutions" express the sense of the meeting on labour and social issues, other than those covered by the title of the meeting, related to the chemical industries. The report of the discussion is contained in the Note on the proceedings, a published document issued after the close of the meeting, that is the record of its deliberations and outcome.

#### SELECTED ILO PUBLICATIONS

17. The following are some selected ILO publications:

- Voluntary initiatives affecting training and education on safety, health and environment in the chemical industries, 1998 and Note on the proceedings (available in 1999), Reports for and of the Tripartite Meeting, Geneva, 1999.
- Munn, Kevin. Responsible Care and related voluntary initiatives to improve enterprise performance on health, safety and environment in the chemical industry, Sectoral Activities Programme Working Paper, SAP 2.59/WORKING PARTY.109, Geneva, 1997
- Recent developments in the chemical industries; The implications of structural change for employment and training in the chemical industries; and Note on the Proceedings. The Reports for and of the latest meeting of the Chemical Industries Committee, Geneva, 1995.
- Obadia, I. "Chemicals: Benefits and dangers", in World of Work, No. 7, 1994.
- Watfa, N. "Safety in the use of chemicals at the workplace", in Chemical Safety: International Reference Manual (VCH Publishers, Weinheim), 1994.
- Safety and health in the use of chemicals at work: A training manual, Geneva, 1993. Guidance on applying Convention No. 170.
- Prevention of major industrial accidents (Code of Practice), Geneva, 1993; and Major hazard control: A practical manual, Geneva, 1988. These two volumes provide guidance on applying Convention No. 174, which is aimed at preventing major incidents such as Bhopal or Seveso.
- Conclusions and resolutions adopted by the Chemical Industries Committee (1948-1982), Geneva, 1988. Texts containing the agreed tripartite consensus on various labour issues (hours of work, training, industrial relations, safety and health, etc.) that the Committee had on its agenda over the years.



- Shift work in the chemical industries, Geneva, 1988. This technical report for the Tenth Session of the Chemical Industries Committee remains valuable as a guide to the issues involved in shift work.

## THE INTERNATIONAL PROGRAMME ON CHEMICAL SAFETY (IPCS)

### INTRODUCTION

18. The International Programme on Chemical Safety was formally launched in 1980. It is a joint collaborative programme of the International Labour Office (ILO), the United Nations Environment Programme (UNEP) and the World Health Organization (WHO). WHO is the Executing Agency of the Programme, and the IPCS is implemented by the WHO Programme for the Promotion of Chemical Safety (PCS) on behalf of the three Cooperating Organizations.

19. Since the establishment of the IPCS, it had two overall roles. The first is to provide a forum for establishing an international consensus assessment of the risks to human health and the environment of chemicals (**normative functions**), and the second is to promote the use nationally of these assessments and to strengthen the capabilities of Member States to deal with chemical safety matters including chemical accidents (**technical cooperation**). There is a close link between both types of activities, and they are largely interdependent. As a net result, the IPCS provides the scientific basis for Member States to develop and implement their own chemical safety activities.

20. Based on this overall mandate, the work of the IPCS is targeted towards a number of areas of activity:

- to carry out and disseminate evaluations of the risk to human health and the environment from exposure to chemicals and to produce health- or environment-based guideline values for exposure to the agents evaluated;
- to promote the development, improvement, validation, harmonization and use of methods for laboratory testing and ecological and epidemiological studies and other methods suitable for the evaluation of health and environmental risks and hazards from chemicals;
- to promote research to improve the scientific basis for health and environmental risk assessment to ensure a sound management of chemicals;
- to promote technical cooperation with Member States, in particular developing countries to:
  - (a) facilitate the use of available evaluations of health and environmental risks and hazards from chemicals;
  - (b) improve the capabilities of national authorities in conducting their own evaluations of health and environmental risks and hazards from chemicals;
  - (c) strengthen infrastructures for safety aspects relating to chemicals - their production, importation, transportation, storage, use and disposal;
- to promote effective international cooperation with respect to emergencies and accidents involving chemical;
- to support national programmes for prevention and treatment of poisonings involving chemicals;

- to contribute to the harmonization of classification and labelling of chemicals; and
- to promote development of human resources required in the areas above.

## NORMATIVE FUNCTIONS

21. Chemical risk assessment is an essential prerequisite for sound management of chemicals. It is, however, a resource intensive process which requires significant scientific and technical infrastructure to generate and assess the necessary data, and to further develop and validate methodologies. Few countries possess such an infrastructure, however. In addition, there is no generally accepted methodology for risk assessment, and this fact hampers mutual acceptance and use of the results of risk assessment at national or regional level.

22. The normative type of work conducted by the IPCS encompasses the areas of evaluation of chemical risks to human health and environmental integrity, and of methods for risk assessment. The overall aim of this work is to promote the effective use of available resources, enabling all countries, independently of their individual risk assessment capabilities, to access the available scientific information and to set up the necessary infrastructure. The documents published by IPCS provide an authoritative scientific and objective basis that national authorities may use for planning and for the development of regulatory actions and control measures.

### (i) Evaluation of Chemical Risks to Human Health and the Environment

23. The IPCS, in recognition of its own objectives and its global mandate in risk assessment of priority chemicals, and in response to the recommendations of UNCED and the IFCS, conducts a number of activities aimed at providing consensus scientific evaluations of risks posed by priority chemicals to human health and environmental integrity. Some of these evaluations are comprehensive by nature, covering all aspects of risk assessment including hazard identification, dose-response evaluation, exposure assessment and risk characterization (EHC, CICAD). Other evaluations are more targeted to given exposure media (food, drinking-water, air) or to given outcomes.

24. International assessments, conducted within the framework of IPCS include:

- Environmental Health Criteria Documents (EHCs), which provide comprehensive assessments of chemicals and their effects on human health and the environment for scientific and technical experts. More than 200 documents have been produced to date.
- Concise International Chemical Assessment Documents (CICADs), which are produced on the basis of existing national/regional documents (or those under preparation) and undergo the same type of thorough review, providing a possibility to accelerate international assessments and making use of limited resources both at the national/regional as well as at the international level. 9 CICADS have been published to date (November 1998), and two are in press.
- Health and Safety Guides (HSGs), which provide concise information on risks from exposure to chemicals with practical advice on medical and administrative issues. More than 100 documents have been issued to date.

- Toxicological evaluations of food additives and contaminants, and of residues of veterinary drugs in food, within the framework of the WHO/FAO Joint Expert Committee on Food Additives (JECFA). Some 1200 chemicals have been evaluated so far.
- Toxicological evaluations of pesticide residues in food within the framework of the WHO/FAO Joint Meeting on Pesticide Residues (JMPR). Over 300 pesticides have been assessed to date.

25. To facilitate regulation of environmental levels, the results of risk assessment of chemicals need to be translated to health (and environment) based guidelines for exposure through air, drinking water, food, the workplace, consumer goods, and other environmental media. With food additives, contaminants and residues of veterinary drugs on the one hand, and residues of pesticides in food on the other hand, acceptable/tolerable intakes are being provided by JECFA and JMPR, respectively. WHO, with major involvement of the IPCS, has developed documents providing health-based environmental guidelines, the WHO Drinking Water Quality Guidelines (GDWQ) and the WHO Air Quality Guidelines for Europe (AQG). These guidelines are subject to periodical review, and have served as a basis for the development of national standards and for setting up national control measures.

26. A number of products provide validated information on chemicals, including pesticides. These include the following:

- International Chemical Safety Cards (ICSCs), which provide information for individuals at the workplace on the shop floor. Some 1300 cards have been produced so far. The cards are translated into a variety of languages.
- Data Sheets on Pesticides (DSPs), which contain health and safety information on pesticides. Nearly 100 sheets have been finalized to date.
- The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification, in which pesticides are classified according to their potential toxicity, taking into account acute oral or dermal toxicity, whichever is higher, but also any irreversible effect that might be recognized. This document has been formally adopted by the UN Committee of Experts on the Transport of Dangerous Goods (UNCTDG).

27. In the following section, more detailed information on some of these products is provided.

(a) Environmental Health Criteria (EHC) Monographs

28. The criteria monographs are intended to provide critical reviews on the effect on human health and the environment of chemicals and of combinations of chemicals. As such, they include and review studies that are of direct relevance for the evaluation. However, they do not describe *every* study carried out. Worldwide data are used and are quoted from original studies, not from abstracts or reviews. Both published and unpublished reports are considered and it is incumbent on the authors to assess all the articles cited in the references. Preference is always given to published data. Unpublished data are only used when relevant published data are absent or when they are pivotal to the risk assessment. A detailed policy statement is available that describes the procedures used for unpublished proprietary data so that this information can be used in the evaluation without compromising its confidential nature (WHO (1990) Revised Guidelines for the Preparation of Environmental Health Criteria Monographs. PCS/90.69, Geneva, World Health Organization).

29. In the evaluation of human health risks, sound human data, whenever available, are preferred to animal data. Animal and *in vitro* studies provide support and are used mainly to supply evidence missing from human studies. It is mandatory that research on human subjects is conducted in full accord with ethical principles, including the provisions of the Helsinki Declaration.

30. The EHC monographs are intended to assist national and international authorities in making risk assessments and subsequent risk management decisions. They represent a thorough evaluation of risks and should be used by national authorities in establishing their own control measures, including appropriate regulations or standard setting. These latter are obviously the exclusive purview of national governments.

31. All EHC monographs undergo a thorough peer-review process, and are finalized at task group meetings attended by international experts on the chemical reviewed, attending in their individual capacity.

(b) Health and safety Guides (HSG)

32. The purpose of a Health and Safety Guide, which is generally produced upon completion of an EHC, is to facilitate the application of these guidelines in national chemical safety programmes. The first three sections of a Health and Safety Guide highlight the relevant technical information in the corresponding EHC. Section 4 includes advice on preventive and protective measures and emergency action; health workers should be thoroughly familiar with the medical information to ensure that they can act efficiently in an emergency. Within the Guide is a Summary of Chemical Safety Information which should be readily available, and should be clearly explained, to all who could come into contact with the chemical. The section on regulatory information is extracted from the legal file of the International Register of Potentially Toxic Chemicals (UNEP) and from other United Nations sources.

33. The target readership includes occupational health services, those in ministries, governmental agencies, industry, and trade unions who are involved in the safe use of chemicals and the avoidance of environmental health hazards, and those wanting more information on this topic.

(c) Concise International Chemical Assessment Documents (CICAD)

34. The concept of the CICADs was developed in response to the call by UNCED Agenda 21, Chapter 19 for an accelerated international assessment of a large number of priority chemicals. It provides a model for the use of existing national/regional reports (or those under preparation) to develop globally accepted risk assessments. The CICADs provide a concise evaluation of risks to human health and/or environmental integrity resulting from exposure to a given chemical, with an extensive summary of key studies supporting the evaluation as well as more practical advice for risk management (as in the HSGs).

35. CICADs follow the general format of the EHC documents with emphasis on key studies and primary conclusions. The latter would be presented in sufficient detail permitting the readers to draw their own conclusions. Though being concise, the CICADs are comprehensive in terms of the information reviewed and the provision of all information relevant to the risk assessment of the chemical(s) investigated. Adequate national/regional reports would serve as the sources and supporting documents for the CICADs. The source reports need to be comprehensive regarding end-points addressed including a critical assessment of the data, sufficient level of detail on individual studies, and a comprehensive reference list. They should reflect a transparent review process, be written in English and be publicly available.

36. The CICADs are subjected to a thorough, international peer-review process. Several documents are reviewed at a Final Review Board meeting for the accuracy of the contents and the conclusions, and for the adequacy of the peer-review process.

(d) WHO/FAO Joint Expert Committee on Food Additives (JECFA)

37. The Joint FAO/WHO Expert Committee on Food Additives (JECFA) serves as the scientific advisory body to two general subject committees of the Codex Alimentarius, the Codex Committee on Food Additives and Contaminants (CCFAC) and the Codex Committee on Residues of Veterinary Drugs in Foods (CCRVDF). The recommendations of JECFA are used by the Codex Alimentarius for establishing international food standards and they underpin the safety of these standards. In addition, the recommendations of JECFA are used directly by many countries in their food regulatory activities. JECFA has been operational since 1959. Four meetings of JECFA are held per biennium, two of which are devoted to food additives and contaminants, and two to veterinary drug residues.

38. JECFA evaluates food additives, contaminants, and residues of veterinary drugs in food. To date, more than 1000 food additives (including flavouring agents) 25 contaminants, and nearly 100 veterinary drugs have been evaluated. Acceptable daily intakes (ADIs) are allocated, when appropriate, to food additives and veterinary drugs, while tolerable intakes are established for contaminants. Specifications for identity and purity of food additives are developed and published, while maximum residue limits (MRLs) in animal tissues are recommended for veterinary drugs.

(e) WHO/FAO Joint Meeting on Pesticide Residues (JMPR)

39. The Joint FAO/WHO Meeting on Pesticide Residues (JMPR) has been meeting annually for more than 30 years to evaluate pesticide residues in food. In this capacity, it serves as the scientific advisory body to a general subject committee of the Codex Alimentarius, the Codex Committee on Pesticide Residues (CCPR). The recommendations of JMPR are used by the Codex Alimentarius for establishing international food standards and they underpin the safety of these standards. In addition, the recommendations of JMPR are used directly by many countries in their food regulatory activities. JMPR allocates acceptable daily intakes (ADIs), when appropriate, and maximum residue limits (MRLs) in various commodities.

(f) International Chemical Safety Cards (ICSC)

40. The main objective of the project is to make available, in as many languages as possible, internationally peer-reviewed essential safety and health information on chemical substances to workers and those responsible for safety and health at the workplace in a concise format and a language easy to understand. A collection expected to contain ultimately about 3000 ICSCs for the most common substances found in industry, agriculture and any other place of work is being produced, updated and disseminated worldwide. To date, about 1300 ICSCs have been produced. The current English collection has been translated, all or in part, in French, Spanish, Japanese, German, Russian, Chinese, Italian, Dutch, Finnish, Swahili, and Urdu. Ongoing or planned translations include Arabic, Thai and Singhalese.

41. The ICSCs are prepared and updated through an ongoing process of drafting and peer reviewing by scientists from specialized institutions designated by member states who contribute to the work of IPCS. Peer-review meetings are held twice a year. This process takes account of the advice and information provided by manufacturers, international workers' and employers' organizations, as well as Poison Control Centres and other national, regional and international institutions specialized in chemical safety, toxicology,

and medicine. Similarly, translation of the ICSCs in different languages is carried out in part by the European Commission and by a number of participating national institutions.

42. A computer programme holding a set of continuously updated standard phrases (available in about 20 languages) and a phrase selection system is used to compile the ICSCs and to translate them quasi automatically. A Compiler's guide for the preparation of International Chemical Safety Cards provides a detailed procedure for preparing the Cards and the necessary criteria for selecting standard phrases. The Guide is available in all the languages of the EU.

### **(ii) Methodologies for Risk Assessment**

43. In the field of methodology development, the work of the IPCS aims at promoting the development, improvement, validation, harmonization and use of generally acceptable, scientifically sound methodologies for the evaluation of risks to human health and the environment from exposure to chemicals. In addition, the results of such work should enhance mutual acceptance of risk assessment products. This would lead to an avoidance of unnecessary duplication of efforts, and to an increase in the volume of information made available to countries. Finally, this work provides the scientific basis for safe use of chemicals and will enhance, thus, the capabilities of countries in risk assessment and management.

44. The work encompasses the development of Environmental Health Criteria monographs on general principles of various areas of risk assessment, the validation of test methods, and a project aiming at harmonising methodologies for the assessment of risk from exposure to chemicals. IPCS and OECD have developed a framework for cooperation in the field of risk assessment methodologies, which ensures complementary, mutual support and mutual involvement in the projects conducted by each organisation. This will ensure that duplication of effort is avoided, and that both organizations can benefit from the work of the other. Work is being coordinated at the planning stage already.

#### **(a) General Principles**

45. International consensus Environmental Health Criteria documents covering various aspects of risk assessment (general principles, different health endpoints, exposure assessment) are developed. They present state-of-the-art information on relevant aspects of risk assessment methodology.

46. Description of general principles included monographs on Principles for the Safety Assessment of Food Additives and Contaminants in Food, on Principles for the Toxicological Assessment of Pesticide Residues in Food, and on Assessing Human Health Risks of Chemicals: Derivation of Guidance Values for Health-Based Exposure Limits. A document describing the scientific basis for health risk assessment and approaches to their applications has just been finalized. In addition, several monographs address the principles of assessment of toxic effects in various organs, including the kidneys, the nervous system, the immune system and the reproductive system. Finally, several monographs deal with the principles for the evaluation of health effects in susceptible population groups, for example infants and young children as well as the elderly.

47. The following EHC monographs are currently at various stages of preparation:

#### **Human Exposure Assessment**

**Allergic Hypersensitivities Associated with Exposure to Chemicals**

**Principles for Evaluating Health Risks to Reproduction Associated with Exposure to Chemicals**

**Principles and Methods for Assessing Respiratory Tract Injury Caused by Inhaled Substances**

**Principles and Methods for assessing Human Health Risks from essential Elements**

48. The EHC monographs are prepared, peer-reviewed and finalised according to the general procedures outlined for the chemical-specific EHCs. Generally, draft chapters/sections are prepared by different authors. Working Groups are often convened to discuss and prepare a consolidated draft before its circulation to IPCS contact points.

49. In addition to the preparation of monographs, a number of related activities are conducted. Consensus Toxic Equivalency Factors for polychlorinated dibenzo-p-dioxins, dibenzofurans and dioxin-like PCBs are being developed and are subjected to a periodic evaluation. This work is conducted in cooperation with the WHO Regional Office for Europe, European Centre for Environment and Health (Bilthoven Division). Several workshops addressing specific issues related to risk assessment methodologies are carried out. Examples of past activities include "Risk assessment of chemicals in relation to susceptible and special "at risk" human groups and to sensitive species in the environment" and "Variations in susceptibility to toxic response". Finally, IPCS has been involved in the evaluation of new methodologies for the assessment of particular endpoints. Most recently, methods for screening chemicals for neurotoxicity have been evaluated.

(b) Harmonization of Approaches to the Assessment of Risk from Exposure to Chemicals

50. In 1993, the International Programme on Chemical Safety (IPCS) embarked on a project to harmonize approaches to the assessment of risk from exposure to chemicals. The overall goal of this project is to globally harmonize approaches to risk assessment, through increased understanding, focusing on specific issues and to strive for agreement on basic principles. Such harmonization should not be perceived as standardization, but is defined as an understanding of the methods and practices used by various countries and organizations so as to develop confidence in and acceptance of assessments that use different approaches. It further involves a willingness to work toward convergence of these approaches or methods as a long-term goal. Progress through all stages of this project will result in efficient use of resources and consistency among assessments.

51. Achieving harmonization of approaches will afford a number of opportunities including a framework for comparing information on risk assessment, an understanding of the basis for exposure standards for specific chemicals in different countries, progress toward common classification and labelling schemes for hazardous chemicals, savings of time and expense by sharing information leading to a potential non-requirement to repeat assessments, and credible science.

52. The IPCS project is being pursued on two levels. The first focuses on sound scientific principles. The second bridges the gap (often wide) between policy/decision-making and scientific considerations. The initial focus of this endeavour will be on approaches to the assessment of risk to human health. So far, scientific workshops have been convened on reproductive and developmental toxicity, carcinogenicity, mutagenicity (germ cells), and uncertainty/variability issues in risk assessment.

53. This project considers qualitative, and quantitative risk assessment methodologies (following acute, subchronic and chronic exposures to chemicals) on an endpoint-specific basis focussing initially on reproductive and developmental toxicity, carcinogenicity, mutagenicity, neurotoxicity, immunotoxicity and systemic toxicity.

54. In addition, the process to link disciplines, media and biological endpoints be they related to the environment or specific organisms, as well as cross-cutting issues (uncertainty/variability, use of epidemiological data in risk assessment) are addressed. Two joint activities with OECD are underway. The first is a project on harmonization of terms used in risk assessment. In the first phase, generic terms are being reviewed. The second project aims at developing an inventory of risk assessment methods used

by agencies in different countries and the availability of guidance documents. In a pilot phase, a pointer database has been developed and circulated for review and evaluation.

(c) Emerging Issues

55. Environmental health issues emerge that cause public concern and need adequate attention, e.g. exposure to endocrine disrupting chemicals, or effects of environmental chemicals on children. They often require the development of a harmonized scientific basis for risk assessment to permit effective risk management decisions to be taken. The IPCS addresses some of these issues from a global point of view.

56. The IPCS has embarked on a project with a number of national/regional agencies to establish and maintain an inventory of research activities on endocrine disruption. In addition, the IPCS will provide an international report on the state of the science based on existing reviews. A steering group overseeing both activities has been established. The Steering Group discussed the structure and content of the global inventory of research and agreed on criteria for inclusion of research projects. The inventory will be based upon the existing research inventories, and will be hosted by the Environment Institute of the European Commissions Joint Research Centre in Ispra. The Group also defined the objectives and scope of the international assessment. An annotated outline was developed and a process to develop, review and finalize the document was agreed on. Authors and chapter coordinators have been assigned. It is envisaged to finalize the document in two years. By comparing the state of the science report with ongoing research efforts, research gaps can be identified globally, and coordinated efforts to advance our knowledge on the subject may be launched.

57. Other activities include efforts to provide a scientific basis for integrated health and ecological risk assessment of chemicals, and to evaluate and further develop approaches for risk assessment in vulnerable population groups, notably children, women and the aged population.

## TECHNICAL COOPERATION

58. Work in the field of technical cooperation encompasses global activities relevant to all countries, and individual, country-specific activities. These activities aim at:

- Strengthening National Chemical Safety Programmes;
- Promoting the establishment of Chemical and/or Poisons Information Centres;
- Promoting public awareness campaigns and prevention of toxic exposures;
- Providing international evaluation of antidotes;
- Promoting the harmonized collection of data and multi-centre research; and
- Providing training courses in different areas of chemical safety.

(a) Strengthening National Chemical Safety Programmes

59. In the context of strengthening national capabilities and capacities for sound management of chemicals (part of the UNCED Agenda 21, Chapter 19 Strategy for Sound Management of Chemicals), the Intergovernmental Forum on Chemical Safety (IFCS) proposed that all countries develop, through intersectoral cooperation, a national profile on national infrastructures for the sound management of chemicals. Such profiles would be examined in a national workshop at which needs would be identified and actions proposed for strengthening and/or setting up the required structures and generating longer term technical cooperation support to the country. IPCS is cooperating, along with the other organizations of the IOMC, with UNITAR in support



of developing countries in the national profile development and review process. IPCS is developing Guidelines on Chemical Safety, as a framework document for all countries wishing to establish and strengthen their chemical safety programmes, and organizing workshops on National Profiles.

(b) Promoting the establishment of Chemical Safety and/or Information Centres

60. Access to evaluated information on chemicals and chemical risks and establishing infrastructure for chemicals information in countries was recognized by UNCED and the IFCS as an important requirement for sound management of chemicals. IPCS is promoting the establishment in developing countries of chemical information centres, accessible on a round-the-clock basis to users of information. These centres are often part of the poisons information structure in a country. IPCS Guidelines for establishing such centres have been prepared. IPCS has developed during 1995/6 two chemicals information databases available on CD-ROM. One, the IPCS INTOX CD-ROM, is directed towards providing the medical profession with evaluated data on prevention of exposure, diagnosis and treatment of exposures to chemicals. Currently, some 500 documents are available on this CD-ROM, including the Poison Information Monographs (PIMs), which provide guidance on diagnosis and management of toxic exposures. The other, the IPCS INCHEM CD-ROM consolidates all the relevant chemical safety documents produced by the IPCS Collaborating Organizations (WHO, ILO, UNEP) and currently contains over 2000 documents, provides a library of evaluated information on chemicals for a wide range of uses. Both the CD-ROMs have a powerful software search mechanism and other user friendly support tools. They are each issued twice a year.

(c) Promoting Public Awareness Campaigns and Prevention Activities

61. UNCED Agenda 21, Chapter 19 recognized that risk communication to various segments of the society coming into contact with chemicals is a prerequisite for risk reduction. Public and community awareness about risks and information in safe use and prevention of exposures to toxic chemicals is an important component of risk communication. Guidance material on prevention of toxic exposures is under preparation, and a number of countries have been advised on the preparation and implementation of prevention activities based upon toxicovigilance.

(d) International evaluation of antidotes

62. The evaluation of antidotes and other substances and techniques used in the treatment of cases of poisoning and the exchange of information on their field use and availability have been undertaken by the IPCS. Principles for the evaluation of antidotes have been agreed upon, and the preparation of a series of monographs on antidotes and other substances and techniques used in the treatment of cases of poisoning undertaken.

63. A preliminary list of classified antidotes and other substances and techniques used to prevent the absorption of poisons, to enhance their elimination and to treat their effects on body functions has been drawn up and disseminated, and monographs on individual antidotes, substances and techniques, presenting an international evaluation and a consensus opinion on specific therapeutic uses, are being developed. Of the approximately 100 antidotes and agents identified for possible evaluation, work has been completed on 14, and evaluation of a further 18 is in preparation, plus evaluation of techniques used for prevention of absorption and enhanced elimination of poisons. The availability of antidotes for response to chemical emergencies is being promoted.

(e) Promoting the harmonized collection of data and multi-centre research

64. In order to develop the scientific basis for establishing comparability of poisoning case data and the mechanism for collecting harmonized data nationally and internationally, activities are undertaken on the

harmonization in the collection of observational and other data. In the context of the IPCS INTOX project, common formats and controlled vocabulary for reporting calls to poisons centres have been established and work is in hand to develop harmonization of data on hospitalized poisoning cases. Work is also in hand on defining controlled vocabulary in English, French, Portuguese and Spanish. A simple Poisoning Severity Score for grading poisoning cases has been developed and tested (in press). Work is in hand to test a quantified severity grading scheme for hospitalized cases (TOXscore) and results will be examined at a Meeting of Investigators. A harmonized format is being developed for annual reports of poisons centres, including reporting of statistical data on cases. This work is being pursued through the IPCS INTOX project.

65. A tool for the harmonized collection of data on poisoning by pesticides has been developed and is being tested in a number of countries. It will help estimate the incidence of poisonings/adverse effects and mortality related to the use of pesticides in defined occupationally exposed target populations, and in individuals registered by medical facilities and poison control centres. This will help to assess the association of poisonings/adverse effects, morbidity and mortality due to pesticide exposure with relevant explanatory data, and set the basis for recommending specific preventive and educational activities, with the use of pesticides. The protocol is being tested and will be followed by an international review meeting to be held in the second half of the year and at which plans for a full survey in a variety of countries will be examined. As a follow-up, technical assistance to countries from different regions where epidemiological studies are going to be undertaken will be provided; training and other support will be given to countries.

(f) Training Courses

66. Human resource development is an important part of capacity building for sound management of chemicals. The different types of training courses which have been developed by the IPCS include the following:

- *National Training for Developing Countries on Toxic Chemicals, Environment and Health* (Assessment and management of risks to human health and the environment from exposure to chemicals).
- *Poisons Control Programmes* (Setting Up and Management of Poisons Centres (Roles and responsibilities of poisons centres, infrastructure and equipment, human resources, interaction with other sectors involved in chemical safety, management of information, harmonized collection of data (clinical cases, chemical incidents, product records), analytical support, clinical services, research activities, library resources).
- *Use of the IPCS INTOX Package* (Installation of the software, communication records, product records, organisation records, auxiliary databases, importation of data, use of the CD ROM database, preparation of annual reports).
- *Diagnosis, Prevention and Management of Toxic Exposures* (Characteristics of pesticides, classification by use and chemical structure, WHO classification, characteristics of exposure to pesticides, epidemiological data, main toxindromes, decontamination, use of antidotes).
- *Women and Chemicals* (Characteristics of toxic exposures according to gender, epidemiological data, exposure to chemicals *in utero* and at birth, during childhood, adolescence, adulthood and senescence, toxic chemicals in the households, exposure at work).

- *Prevention of Toxic Exposures: Public Awareness* (Definition and purposes of prevention and toxicovigilance, identification of toxicological problems in the community, opportunity for prevention, organisers and partners, strategy and methodologies, tools and techniques, case studies, evaluation).
- *Chemical Emergency Preparedness and Response* (To provide guidance on health aspects of chemical accidents, to raise awareness about the importance of preparedness, to catalyse local intersectoral activities involving emergency and rescue services and other partners involved in the response to chemical incidents).

#### **INTERNATIONAL RUBBER STUDY GROUP (IRSG)**

67. The International Rubber Study Group held its 38th Assembly in Bali in October 1998 by invitation of the Government of the Republic of Indonesia. The Assembly was opened by the Honourable Minister for Forestry and Estate Crops of the Republic of Indonesia, H.E. Dr Muslimin Nasution and was chaired by Dr Rosediana Suharto, representing the host country. The Heads of Delegations were able to note continued improvement in the Group's financial position. They extended the term of office of the Secretary-General by one year to 31 January 2000 and approved a timetable for the recruitment of his successor. At the third Plenary Session, the Russian Federation was elected Chairman of the Group in succession to Indonesia for the period 1998-2000, and India was elected as Vice-Chairman.

68. The First Plenary Session received reports from the Secretary-General, Mr Maurice Cain, the Executive Committee and six International Organizations connected with the rubber industry. In his report, Mr Cain briefly reviewed the current economic situation and the downward spiral in natural rubber prices. He referred to the recent INRO Council meeting in Kuala Lumpur, where no resolution of the disparity between physical prices and the Indicator Price, which controls market intervention, had been achieved. He repeated his 1994 forecast that the natural rubber price in 2000 would not be significantly different from the INRO 'may-buy' level. He also pointed out that with the proposed installation of additional synthetic rubber capacity in Asia, where Thailand and Indonesia had already joined the ranks of synthetic rubber producers, the prospects for synthetic rubber prices were scarcely better.

69. In its second plenary session, the Assembly heard a review of the outlook for elastomers by the Group's Chief Economist, Dr Prachaya Jumpasut. His assessment of the world rubber economy noted in particular the steady growth of the industries in North America and Europe. This made Dr Jumpasut quite optimistic about the prospects for reasonable growth rates in both rubber demand and supply for 1999, although he repeated his view that there would be a failure of natural rubber supplies to meet demand, perhaps now delayed until the end of the next decade. However, after hearing statements on their rubber industries by fourteen Member Governments, the Statistical Committee of the Group took a less optimistic view. The major synthetic rubber producing and elastomer consuming countries (USA, Belgium, France, Germany, Italy, United Kingdom and Japan) were all cautious about economic growth in 1999, with Japan predicting GDP growth of only 0.5% after a fall of 1.1% in 1998. The natural rubber producing countries (Côte d'Ivoire, Nigeria, India, Indonesia, Malaysia, Sri Lanka and Thailand) all reported setbacks resulting from the currency depreciation and low prices. The setbacks were regarded as essentially temporary, with economic recovery within a year or two. Thailand, the major natural rubber producer, expects output to reach 2.55 million tonnes by 2003, with the share of smoked sheets falling from the current 53% of production to roughly parity with Standard Thai Rubber at about 43% of production in that year. All the natural rubber producers expressed concern at the failure of INRO to stabilize prices at remunerative levels.

70. The Statistical Committee reviewed the figures for the consumption and production of rubber submitted by the Committee of Expert Rubber Statisticians (CERS), which had met in Bali just before the Assembly. Some Member Governments made corrections to their provisional figures, and the Committee revised some of the growth rates projected by the CERS. The agreed figures are shown in the accompanying Tables. They

forecast a growth of total world elastomer demand in 1999 by 1.7% to 16.9 million tonnes. This will comprise 6.7 million tonnes of natural rubber (2.1% up on 1998) and 10.2 million tonnes of synthetic rubber (up 1.5%). Natural rubber production is expected to increase by 1.5% to 6.8 million tonnes and synthetic rubber production to fall by -0.5% to 10.3 million tonnes. Total world elastomer production will rise by only 0.8% in 1999 to 17.1 million tonnes. Within the accuracy of the statistical data, supply and demand for both elastomers will again be roughly in balance. The Group was thus able to forecast continuing positive growth for world total elastomer consumption and production in 1999.

71. The Group's Economic Committee, on the advice of its Industry Advisory Panel, approved the publication of five Secretariat Papers and reviewed the Secretariat's Work Programme. Concern was expressed at the slow progress on commercialization of the new packaging system for TSR developed in a project financed by the Common Fund for Commodities. The importance of the proposed project on the evaluation on smallholder marketing systems was re-emphasized, and it was agreed to continue to pursue sources of funding it.

#### **ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD)**

72. The principal objectives of the Environmental Health and Safety Programme are to work on the safety of Chemicals by assisting OECD Member countries' efforts to protect human health and the environment through improving chemical safety; making chemical control policies more transparent and efficient; and preventing unnecessary distortions in the trade of chemicals and chemical products.

73. The programme develops and co-ordinates environmental health and safety activities on an international basis. Such activities include harmonizing chemical testing and hazard assessment procedures; harmonization of classification and labelling; developing principles for Good Laboratory Practice; co-operating on the investigation of existing chemicals (high production volume chemicals); work on Pollutant Release and Transfer Registers (PRTRs), as well as sharing and exploring possible co-operative activities on risk management from chemicals. While this work is focussed primarily on the production, processing and use of industrial chemicals, these activities are closely co-ordinated with other work in OECD, particularly with regard to work on pesticides, chemical accidents, and biotechnology.

74. Below follows a brief overview of the achievements of the various activities undertaken to implement the objectives of the Environmental Health and Safety Programme in 1998 (including the activities of the Special Programme).

#### **Test Guidelines**

75. Major achievements in 1998 included the adoption by Council of the **tenth Addendum to the Test Guidelines publication**. This Addendum comprises seven new and revised Guidelines on environmental toxicity in crustacea, fish and honeybees and health effects in mammals. In addition, the tenth Addendum also included a third alternative test to the conventional acute toxicity test. Furthermore, the National Co-ordinators of the Test Guidelines Programme approved new test guidelines for fish and soil micro-organisms.

76. Work on **endocrine disrupters** has expanded considerably with the establishment of an Expert Panel on Endocrine Disrupters Testing and Assessment (EDTA) to achieve international consensus on the preferred approach to testing and assessing the risks of endocrine disrupting chemicals. The EDTA met twice in 1998. In addition, an Expert Consultation was held in Washington, DC on the selection of tests to be further developed for the testing of endocrine disrupters. At their second meeting, EDTA selected two new methods and one existing but enhanced test guideline to be validated. A Validation Management Expert Panel was established by

the end of the year to co-ordinate and manage the validation work. Government and industry laboratories in North America, Europe and Asia will participate in the work.

### **GLP and Compliance Monitoring**

77. The activities related to Good Laboratory Practice and Compliance Monitoring were primarily concerned with implementation of the revised Principles of GLP, adopted in 1997, and the pilot phase of the project for mutual evaluation of national GLP compliance monitoring programmes based on-site visits by evaluation teams from the Working Group on GLP. Ten such visits took place in 1998, and the reports from these evaluations will be reviewed by the Working Group in the course of 1999. Two non-Member countries have been invited by Council to provisionally adhere to the Council Acts related to the Mutual Acceptance of Data in the Assessment of Chemicals in accordance with the 1997 Council Decision C(97)114/Final: South Africa and Slovenia will take part in activities related to Test Guidelines and GLP.

### **Risk Assessment**

78. The work on risk assessment focuses on improving hazard and risk assessment procedures, promoting harmonization among countries and encouraging mutual use and acceptance of the assessments of chemicals. The outputs of the work include:

- resolution of all remaining issues concerning the aquatic hazard classification of metals and metal compounds was achieved, with the exception of pH;
- two databases were finalised and made available on the EHS web site in November 1998, i.e. the Database on Use and Release of Industrial Chemicals and the New Industrial Chemicals Information Directory;
- a workshop on the better use of monitoring data in the environmental exposure assessment of industrial chemicals was held in Berlin in May 1998. Participants have commented on a draft report, but the need for further work in this area has not yet been agreed;

79. Further work is being undertaken in two projects which are carried out jointly with IPCS. These concern:

- the harmonization of generic terms used in the hazard/risk assessment of chemicals;
- the development of an inventory of risk assessment methods - the structure of the database has been finalized, but countries have not yet provided the data.

### **Risk Management**

80. The goal of OECD's risk management activities is to assist Member countries manage risks posed by chemicals in the most effective and efficient way possible. This can take two forms: one, support for national programmes aimed at managing the risks posed by particular chemical exposures; and two, identification and evaluation of new and innovative approaches that can assist countries manage a wide variety of chemicals. Work on both types of risk management support continued in 1998. With respect to specific chemical exposures, a workshop was held in which participants agreed on a proposal for a uniform labelling system for nickel-cadmium batteries that should facilitate the collection and recycling of these batteries. Also, an analysis was conducted on how industry was implementing a voluntary commitment they made to take certain risk management actions on brominated flame retardants. Finally, a major survey was conducted to determine how Member countries (and industry) are implementing the elements in the 1996 Ministerial Declaration on Lead Risk Reduction; the report documenting the results will be available in 1999. As for the development of innovative risk management

approaches, a workshop was held to identify ways governments and industry could establish programmes which promote the development of, among other things, environmentally-benign chemical products. A workshop was also held on identifying ways to integrate socio-economic analysis into chemical risk management decision-making.

### **Harmonization of Classification and Labelling Systems**

81. In September 1998 a High Level Meeting of the Advisory Group on Harmonization of Classification and Labelling reached agreement on harmonized classification systems for the following endpoints:

- health hazards based on acute toxicity,
- health hazards based on irritation/corrosion to the skin,
- health hazards based on irritation/corrosion to the eye,
- health hazards based on skin sensitisation and sensitisation by inhalation,
- health hazards based on germ cell mutagenicity,
- health hazards based on carcinogenicity,
- health hazards based on reproductive toxicity,
- environmental hazards based on aquatic toxicity and degradation/accumulation.

82. In November 1998, the Joint Meeting endorsed the agreement reached on the Integrated Harmonized Classification System, which includes technical details of the classification systems for the eight endpoints for which the work has finished, as well as chapters on general considerations, all of which were submitted to the IOMC as the OECD contribution to the Globally Harmonized Classification System (GHS). Detailed Review Documents on all agreed endpoints have been separately published in the Environmental Health and Safety Monograph Series on Testing and Assessment.

83. Additional work is still needed on **Target Organ Oriented Toxicity** and **Chemical Mixtures**. Both these activities are well underway and the Detailed Review Documents (DRD), being the first major step towards agreement on a harmonized system, will most likely be approved for both endpoints early in 1999.

84. In 1998, the work on a comprehensive Guidance Document on Classification of chemicals based on their hazards to the Aquatic Environment was started

### **Co-operation on Existing Chemicals**

85. 1998 was a year of significant changes in the work on the co-operative investigation of High Production Volume chemicals. Member countries agreed to a significantly increased and refocused programme, which would make best use of the industry initiatives to fill data gaps and undertake initial hazard assessments on a large number of HPV chemicals in the next five years. Work to develop appropriate policies and modify procedures will continue in 1999, in parallel with the data generation work. A significant increase in the output of the programme (agreed hazard assessments of Screening Information Data Sets) is expected beginning in 2000.

86. The co-operative investigation of HPV chemicals continued, with Member countries, in co-operation with the chemical industry, carrying out information gathering and preparation of testing plans on 130 chemicals, actual testing on 34 chemicals and preparing assessments of 52 others. Fifteen assessments were agreed in OECD in 1998. 349 HPV chemicals are currently in the programme, with 122 having been assessed to date. Data bases supporting this and other work on existing chemicals were updated in 1998, notably the Exichem pointer data base. A new initiative aimed at making it easier to obtain the conclusions and recommendations of completed assessments as well as the supporting information using the Internet began in 1998 and is expected to be finalised in early 1999.

### Pesticides

87. Good progress continued to be made in all of the main activities of the Pesticide Programme during 1998 (i.e. data requirements, hazard/risk assessment, registration, risk reduction and biocides).

#### Outputs included:

88. Agreement and publication of harmonized formats for the structure and content of industry pesticide data submissions and country data review reports - an OECD Press Release was made since this agreement paves the way for significant resource savings for governments and industry in the area of pesticide registration. Activities are now underway to further promote the sharing of pesticide reviews among countries. Publication of the survey of countries' approaches to the protection of proprietary rights and confidential business information.

89. Initiation of work to develop pesticide risk indicators. An expert group was established to develop aquatic risk indicators. Good progress has been made and two reports have been submitted for review. This work is being done in co-operation with the Joint Working Party on agriculture and the environment. A work plan for activities on biocides (non-agricultural pesticides) regulation was approved by the Pesticide Forum in November 1998. Work has already begun.

90. Significant progress was also made with respect to an Agreement on a harmonized core set of data requirements for the registration of pheromones. Progress was made, but the Forum agreed that a workshop during 1999 would be needed to resolve remaining issues.

91. Development of a proposal for a core set of data requirements for microbial pesticides. However, significant progress towards this was made, including a survey of on the registration of microbial pesticides in OECD countries and an EU workshop in which the OECD Microbials Steering Group participated.

92. Development of a draft guidance document for conducting studies to measure post-application exposure to agricultural pesticides. This work has been delayed as the principle background document has not yet been completed by the United States.

93. Guidance for the analysis and evaluation of repeat-dose toxicity studies. The incorporation of comments from the review procedure has taken longer than expected.

94. Guidelines for the collection of pesticide use data. This will be published in early 1999.

95. A work plan regarding pesticide risk reduction through the increased use of Integrated Pest Management.

96. A successful workshop on this topic was held in Neuchatel in mid 1998, but the Pesticide Forum were not prepared to agree further work when they met in November. This will now be done in June 1999.

97. In 1998, new work on the development of minimum data requirements for Maximum Residue Limits (MRLs) was initiated.

### Chemical Accidents

98. The Chemical Accidents Programme addresses the issue of how to avoid major chemical accidents and how to respond appropriately to those which occur. During 1998, the major event was a workshop on *New Developments in Chemical Emergency Preparedness and Response*, which was hosted by the Government of Finland, 3-6 November 1998. This Workshop was held in co-operation with the United Nations Economic

Commission for Europe (UN ECE). In addition, a project was initiated to establish the feasibility of developing internationally accepted Acute Exposure Guideline Levels (AEGs). Also, as a result of increasing concerns about the potential impact of the millennium bug on hazardous installations, an Electronic Information Clearing House on Chemical Emergencies was made available on the Internet. This system is intended to assist in the exchange of information among stakeholders on the impact of Y2K problems on hazardous installations. There was also a continuation of the review and revision of OECD's Guiding Principles for Chemical Accident Prevention, Preparedness and Response.

#### **Pollutant Release and Transfer Registers (PRTRs)**

99. In response to UNCED Agenda 21's call for governments to implement and improve databases about chemicals including inventories of emissions, OECD in co-operation with other relevant international organisations, undertook a project to prepare guidance and promote the development of pollutant release and transfer registers (PRTRs). A major conference on PRTRs was held in Tokyo to share lessons learned from existing and emerging PRTRs and to identify future directions and challenges nationally and internationally. This conference culminated five years work on PRTRs, in co-operation with UNITAR and UNEP Chemicals, to develop guidance and assist countries with the design and implementation of a PRTR. Delegates identified international actions needed (including those by OECD and its Member countries) to enhance the support and implementation of PRTRs over the next five years. A co-ordination group of the IOMC (Inter-Organization Programme for the Sound Management of Chemicals), supported by the Secretariat, and made up of representatives from relevant international organisations was formed in 1998 to co-ordinate the international work on PRTRs. Three meetings of this group were held in 1998.

#### **Harmonization of Regulatory Oversight in Biotechnology**

100. The work of the Working Group on Harmonization of Regulatory Oversight in Biotechnology has maintained momentum during the past year. This is shown through the publication of plant biology Consensus Documents for unclassified distribution; the work on drafts of fourteen other Consensus Documents is ongoing; the working relationship with UNEP and UNIDO on plant biology Consensus Documents continues, as does the established link with the Secretariat of the Convention on Biological Diversity; "Biotrack On-Line" continues to provide more and more easily accessed, information, including the "Product Database" which provides information on biotechnology products commercialised in Member countries. A new Task Group on the Safety of Novel Foods and Feeds focuses on food safety issues arising from modern biotechnology. The Task Group's initial work programme is to develop consensus documents on the food safety of specific crop plant species. These will be companion documents, or modules, to the environmental biosafety consensus documents developed and published by the Working Group.

### **ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS (OPCW)**

#### ***Introduction***

100. The Organisation for the Prohibition of Chemical Weapons (OPCW) was established upon the entry into force of the Chemical Weapons Convention (CWC) on 29 April 1997.

101. The CWC requires its States Parties to forego the development, production, stockpiling and use of chemical weapons. It also requires those State Parties, which possess such weapons or the facilities related to these weapons, to destroy them within 10 years of entry in to force of the Convention, i.e. by the year 2007. Among other obligations under the CWC, States Parties are further required to declare facilities producing, processing and consuming dual-use chemicals and accept inspection, if required, to eliminate any chemical weapons they may have abandoned on the territory of another state, not to use riot control agents as a method of warfare, and to declare all protective programmes for defence against chemical weapons to the OPCW.



102. All Permanent Members of the United Nations Security Council are members of the OPCW. Membership of the CWC currently stands at 121 States Parties. An additional 48 States have signed but have yet to ratify the Convention.

### *Chemical Industry*

103. All declared facilities producing Schedule 1 chemicals are routinely inspected and the aim is to inspect all declared facilities which produce or consume dual-use chemicals on Schedule 2 above a certain threshold value within a period of three years, as well as to oversee the destruction of all chemical weapons, and chemical weapons related facilities in States Parties within ten years.

104. Trade in specified high-risk chemicals with countries that fail to join the CWC is banned or restricted in gradual stages. Trade in Schedule 1 chemicals with non-States Parties is already banned. The CWC requires an end-user certificate as well as an undertaking by the recipient not to retransfer chemicals in Schedule 2 or Schedule 3. Starting on 29 April 2000, in less than fourteenth months time, trade in Schedule 2 chemicals with non-States Parties will be prohibited altogether. After 29 April 2002 States Parties to the CWC will decide whether to ban trade in Schedule 3 chemicals with non-States Parties. Sanctions may be imposed on those States Parties that breach the CWC's provisions.

105. On the economic and technological front, the CWC fosters international cooperation in the field of chemical activities not prohibited under the Convention. Economic and technological cooperation is the backbone of the developmental aspect of the Convention and is essential for achieving universal membership of the CWC. A host of initiatives like training courses, internships, upgrading laboratory capabilities, participation in seminars related to the peaceful uses of chemistry and access to information related data banks have been established.

### *Status of Implementation*

105. As of 1 March 1999 the OPCW had conducted 413 inspections at both chemical weapons and industry facilities and sites in 29 States Parties, including 43 inspections of Schedule 1 facilities and 96 Schedule 2 and Schedule 3 industrial plant sites.

106. Since entry into force of the Convention, the OPCW has received 90 initial declarations from its Member States. Nine States have declared current or past chemical weapons related activities, while eight others have declared old and abandoned chemical weapons on their territories. The inspection system under the Convention has proceeded smoothly, both at chemical weapons related facilities, and at civilian industry sites dealing with the chemicals listed in the Convention.

107. Sixty-one chemical weapons production facilities have been declared and inspected in all Member States. Of these, eleven have been certified as completely destroyed, a further ten-twelve are likely to be granted destruction certificates within the next twelve months. Two requests for conversion of such facilities for peaceful purposes have been considered and approved by the Conference of States Parties. The remaining thirty-six facilities must either be completely destroyed or, subject to approval by the Conference of States Parties, converted for use for peaceful purposes within ten years of entry in to force of the CWC, as required by the Convention. These facilities will be inspected on a regular basis until they are destroyed, or, in cases related to conversion, until the Executive Council determines otherwise.

108. All declared chemical weapons related facilities have received their initial inspections and in most cases their first subsequent inspection. OPCW inspection teams have counted and checked more than 8 million

chemical munitions and more than 25,000 bulk chemical agent containers. Furthermore, OPCW inspectors have visited 27 sites declared as holding old or abandoned chemical weapons in nine States Parties.

109. The United States of America had already started the destruction of its chemical weapons stockpile before the entry into force of the Convention, and OPCW inspectors have overseen the destruction of more than 250,000 chemical munitions and close to 2000 tonnes of chemical agents there. The other chemical weapons possessor states will shortly have to start their destruction, since this task must begin within two years of the entry into force of the CWC. The OPCW has already received destruction plans submitted by those States Parties.

110. The scope of the Convention is not limited to chemical disarmament and non-proliferation activities. It also provides for assistance and protection against chemical weapons for States who have foregone the chemical weapons option. This is particularly important for those Member States who have regional security concerns in relation to chemical weapons. The Secretariat is establishing a mechanism and appropriate procedures to ensure the effective coordination of offers of assistance from States Parties, and to ensure that these can be rapidly mobilised should the need arise. There is a voluntary fund for assistance under Article X of the Convention in the event of threat or actual use of chemical weapons against a State Party. The Fund's assets currently amount to roughly one million guilders. The OPCW has established an electronic data bank, which contains information concerning various means of protection against chemical weapons. In fact, the OPCW is making strenuous efforts to continuously expand and enrich the data bank. The Organisation is also actively encouraging States Parties to provide the Secretariat with data on their national programmes for protection against chemical weapons. As envisaged by the Convention, the Secretariat runs a programme for the provision of expert advice on the development and consolidation of national protective capacity against chemical weapons.

111. Having completed the specially designed training courses, 209 inspectors and inspection assistants from over 52 States Parties have been recruited by the OPCW. Approximately 480 fixed term staff from over 67 nationalities are currently working at the headquarters of the OPCW in The Hague. The current budget of the OPCW is approximately US\$ 70 million, and is expected to remain in this range for the near future. Already, the Organisation is seen as a model for a new generation of professional, lean and effective international organisations which save on costs at every available opportunity through innovative and collaborative means.

112. The CWC represents a major arms control accomplishment that breaks new ground in the international community's efforts to embody its norms against proliferation of unacceptable military technology. Consequently, the OPCW looks forward to the new century with confidence to take the world a great deal closer to the ultimate goal of making it free of chemical weapons.

## **WORLD TRADE ORGANIZATION (WTO)**

### **A. Uruguay Round market access results in the chemical sector**

113. The Uruguay Round multilateral trade negotiations resulted in a number of sectorial tariff initiatives, including one for harmonization of tariffs in the chemical sector. The initiative covers chemical products in Harmonized System chapters 28 to 39 and the harmonization of chemical tariffs at zero, 5.5 % or 6.5 % depending on the chapters. According to this initiative, rates below 10 % will be reduced to 5.5 % or 6.5 % over a period of 5 years, rates between 10.1 % and 25 % over 10 years, and rates above 25 % over a period of 15 years. As a plurilateral sectorial initiative, only certain WTO Members chose to participate, but as these commitments are undertaken as a binding commitment, the benefits accrue to all other WTO Members on an MFN basis. Currently, for those Members that are staging-in the concessions, the fifth reduction took place on

1 January 1999. Newly acceding countries to the WTO are normally requested to participate in the chemical harmonization initiative.

B. Trade-related aspects of intellectual property rights

114. Within the framework of the results of the Uruguay Round, an Agreement on the Trade-Related Aspects of Intellectual Property Rights (TRIPs) forms part of the Agreement Establishing the World Trade Organization, which was formally adopted on 15 April 1994 and entered into force on 1 January 1995.

115. The TRIPs Agreement is the most comprehensive multilateral agreement on intellectual property ever negotiated. It has three basic features. First, it contains minimum standards for the protection of seven categories of intellectual property: patents, trademarks, industrial designs, layout-designs of integrated circuits, undisclosed information (trade secrets), copyright and related rights and geographical indications. Second, it contains detailed commitments, to be accepted by all signatory Governments, to provide procedures applicable at the border and internally and remedies in national law which will ensure that these rights can be effectively enforced. Third, it contains procedures for the multilateral settlement of disputes between signatories within the framework of the new World Trade Organization in relation to obligations arising under the TRIPs Agreement.

116. The main features of obligations in two areas of particular interest to the chemical industry - patents and undisclosed information - are as follows. In regard to patents, the draft text requires that patents should be available for new inventions, whether products or processes, in all areas of technology, subject to a very short list of exceptions mainly in the biotechnology field. It also establishes a minimum of 20-year patent term and requires non-discrimination, whether as to the place of invention, the field of technology or whether products are imported or locally produced, in the grant of patents and the enjoyment of patent rights. It also lays down 14 conditions that governments would have to comply with when using patents without the authorization of the patent owner or when granting compulsory licences. In regard to trade secrets, the Agreement requires their protection against unauthorized disclosure, acquisition or use in a manner contrary to honest commercial practices, and provides that confidential data submitted to governments in order to obtain marketing approval for pharmaceuticals or agricultural chemicals must be protected against unfair commercial use.

117. The Agreement also contains transitional arrangements for the implementation of the new obligations member countries will be assuming. Developed countries had to bring their legislation and practices into conformity from 1 January 1996. For developing countries the transition period is five years from entry into force of the WTO Agreement (e.g. until 31 December 1999) and for least developed countries eleven years. Developing countries which do not presently provide product patents, in certain areas of technology have up to ten years to introduce protection in such areas of technology. However, in respect of pharmaceuticals and agricultural chemicals, they must make available patents at the end of this period not only for new inventions but also for inventions made during the transition period (Article 70.8). In the event that a pharmaceutical or agricultural chemical product invented during the transition period is authorized for marketing in such a developing country prior to a patent becoming available, it must, subject to certain conditions, benefit from an exclusive marketing right of up to five years (Article 70.9).

118. Since the TRIPs Agreement came into force, the Council for TRIPs has given much attention to monitoring its implementation and, in particular, compliance with the obligations under it. The Council has completed a detailed review of the implementing legislation of 36 WTO Members. In addition, 16 complaints have been made under the Dispute Settlement Understanding of the WTO on TRIPs matters. Several of these concern the protection of pharmaceutical and agricultural chemical products. There is a high tendency for complaints to be mutually satisfactorily resolved at the bilateral stage of the dispute settlement mechanism. However, in four cases, a panel was established. In three of these cases, the procedure has been terminated; two of these complaints related to pharmaceutical and agricultural chemical products. One of these is a United States

complaint against India concerning compliance with the provisions of Article 70.8(a) and 70.9, on which a Panel report as modified by the Appellate Body has been adopted by the Dispute Settlement Body. The other is a complaint by the European Communities and their member States against India concerning the same matter, on which a Panel Report has been adopted by the Dispute Settlement Body (DSB) as well. India has agreed to implement the DSB's recommendations in both cases by 19 April 1999. The pending panel case concerns a complaint by the European Communities and their member States against Canada concerning patent protection for pharmaceuticals in Canada. Article 27.3(b) of the TRIPS Agreement concerns the patentability of plant and animal inventions and calls for a review of the provisions of that sub-paragraph in 1999. In December 1998, the Council for TRIPS initiated this review with an information-gathering exercise.

### C. Investment and Competition Policy

119. The first Ministerial Conference of the WTO, held at Singapore in December 1996, established new work programmes on the relationship between trade and investment and on the interaction between trade and competition policy. Both these Groups have the mandate to study these areas and to report to the WTO General Council by the end of 1998, which will then decide how the work should proceed. It is explicitly stated in the Decision taken at Singapore that any future negotiations regarding multilateral disciplines in these areas will depend on a new consensus decision of WTO Members to this effect. In December 1998, the General Council received detailed reports from the Groups and agreed to the continuation of their work. These issues are also under consideration in the special sessions of the General Council that are preparing recommendations on future negotiations for decision at the Seattle Ministerial Meeting to be held at the end of 1999.

### **EUROPEAN CHEMICAL INDUSTRY COUNCIL (CEFIC)**

120. At its statutory General Assembly of 12 June 1998, CEFIC Members elected new President, Mr Bryan Sanderson of BP, and new Board in its new "Three Pillar" composition (Member Federations, Member Companies, Affiliated Groups). The current membership of CEFIC consists of 22 National Federations, 44 Member Companies and 99 sector groups and affiliated sectoral organisations. CEFIC represents directly or indirectly 40.000 large, medium and small chemical companies in Europe, which employ about two million people and account for more than 30% of world chemicals production.

121. On the occasion of the 1998 General Assembly, CEFIC presented the "1998 CEFIC Science Education Award" to Ms Sylvie Riou and her class of students from Collège Jean Moulin, Le Havre, France. This annual Award was created by CEFIC to promote excellence in the teaching of science.

122. The key priority of CEFIC in 1998 was to help maintain the competitiveness of the European chemical industry in accordance with the rules of free enterprise and fair trade and the principles of Responsible Care, thus contributing to Sustainable Development.

123. The major policy issue addressed in this respect has been the need to preserve the Internal Market for chemicals and to progress it in areas like crop protection products registration, biotechnology, etc. On the basis of a study on the Internal Market in Chemicals, the CEFIC Board confirmed the need to preserve the EU chemical law system, which is totally harmonised. This has been especially important in view of growing threats such as the development of purely national policies and the attempts to deviate from science-based risk assessment decision-making policies. A strategy based on the following messages was endorsed: absolute need to preserve the Internal Market and to use Community regulatory system; openness for dialogue on best possible risk management of chemicals; support for high HSE standards in line with Responsible Care; withdrawal of any nationalistic approach in "chemical policy" making; need for a pragmatic and effective science and risk assessment based approach to chemicals management; support for a reasonable application of the Precautionary Principle compatible with Agenda 21 of the Rio Declaration and with the EC Treaty; need for effective Commission management of harmonised laws with support of the Member States and the industry.

124. CEFIC advocacy on the need to preserve the Internal Market dimension was also reflected in the report on the recent DGXI/DGIII review of core Community chemical legislation (classification, packaging and labelling of dangerous substances and preparations, new chemical substance notifications, risk assessment of chemicals, restrictions on marketing and use). The report was to be discussed in the "Environment" and "Internal Market" Councils. CEFIC has been fully involved in the consultation process and particularly in the consultative meeting organised by the Commission on 24 and 25 February 1999.

125. CEFIC also maintained its focus on the legal harmonisation process in the countries of Central and Eastern Europe that subscribed for EU membership. CEFIC organised, co-sponsored and participated in various conferences, seminars and workshops in Central and Eastern Europe. On 8 to 11 June 1998, ChemCon 98, the conference on international chemical regulations, was organised in Vienna by Austrian Federal Economic Chamber in co-operation with CEFIC, VCI (German Federation of Chemical Industry) and FCIO (Austrian Federation of Chemical Industry). Day one of the conference was devoted to chemical legislation in Central and Eastern Europe. CEFIC continued to co-operate with its partners in Central Eastern Europe on harmonisation of chemical legislation, developed under 1997/98 CEFIC/PHARE Programme. The main attention was paid to the legislative developments in Poland, the Czech Republic, Slovakia, Slovenia, Estonia and Bulgaria.

126. In November 1998 CEFIC, Austrian and German Federations of Chemical Industry (FCIO and VCI) jointly organised the international conference "Chemical Transport Safety" in Vienna, Austria. More than 200 participants from 17 countries – among them 12 countries of Central and Eastern Europe – attended. The most recent findings in logistics and transport safety were dealt with as well as the legal framework and its practical implementation. CEFIC also pursued its efforts to further develop Safety and Quality Assessment Systems (SQAS) for logistic services. In co-operation with European Federation of Chemical Distributors (FECC) the CEFIC/FECC European Single Assessment Document (ESAD) for chemical distributors has been launched in January 1999. It offers the chemical suppliers a tool to evaluate the HSE performance of their chemical distributors and can at the same time be used by the distributors to measure the commitment to their Responsible Care programme.

127. On 30 November and 1 December 1998 the 9<sup>th</sup> Conference of the CEFIC initiative for Collaborative Research and Development in Sustainable Technologies for the Process Industries (SUSTECH) "R&D Collaboration for Competitive and Sustainable Growth" was organised in La Hulpe, Belgium. In anticipation of the Commission's "Calls for Proposals" from the Fifth Framework Programme for R&TD a "bourse" for new project proposals was organised. As a new item a mini-colloquium on how to generate good collaborations in R&TD and how SUSTECH can help and a major "Show-case" for top universities across Europe to display their capabilities as R&TD partners were also organised in the framework of the conference. 200 delegates attended the Conference, including delegates from Poland, Czech Republic, Hungary and Russian Federation.

128. In 1999, CEFIC will launch in co-operation with the European Commission two major programmes aimed at providing technical assistance to the chemical industry and support to the Federations of Chemical Industry in the Candidate Countries of Central and Eastern Europe (Poland, Czech Republic, Slovakia, Hungary, Slovenia, Estonia, Latvia, Lithuania, Romania and Bulgaria):

129. In co-operation with Directorate General III (Industry) and Technical Assistance and Information Exchange Office (TAIEX) of European Commission the 1999 Joint Programme of Technical Assistance to Chemical Industry in Central and Eastern Europe will be launched in May 1999. The programme of 12 workshops and seminars (3 multilateral and 9 bilateral) will be aimed at providing technical assistance in the approximation and implementation of legislation on dangerous chemical substances and preparations, pesticides, biocides and EU requirements on logistics and transport of chemicals.

130. In October 1999, in co-operation with Directorate General IA (External Relations) and Directorate General III (Industry), a new CEFIC/European Commission/PHARE project will be launched aimed at strengthening of

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Chemical Industry Federations in the Candidate Countries of Central and Eastern Europe and setting up support services to be provided to member companies in order to help them to adapt to the requirements of the “acquis communautaire”.

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