

Strengthening National Information Systems and Information Exchange for the Sound Management of Chemicals

Observations and Conclusions of an
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Final Report



IOMC

INTER-ORGANIZATION PROGRAMME FOR THE SOUND MANAGEMENT OF CHEMICALS
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About the Series of Thematic Workshops on Priority Topics of National Chemicals Management Capacity Building...

The Series of Thematic Workshops on Priority Topics of National Chemicals Management Capacity Building provides a forum to facilitate an exchange of experience and to identify practical steps which interested countries can take to systematically address certain chemicals management priority topics. The series addresses priorities which have been identified by countries through National Profiles and in the context of National Programmes for the Sound Management of Chemicals and which have also been highlighted through the Intergovernmental Forum on Chemical Safety (IFCS). Many of these topics (e.g. chemicals legislation) are inter-sectoral in nature and cut across the activities of various ministries and interested parties at the national level. For this reason, integrated and co-ordinated approaches, which take into consideration the perspective of all interested parties and build upon existing international experience, are considered of great importance.

The workshops are co-ordinated by UNITAR and involve interested countries, IOMC Participating Organizations, industry, public interest groups, and other interested parties. Thematic workshops on the following topics have been held:

- * Strengthening National Information Systems and Information Exchange for the Sound Management of Chemicals, September 1998
- * Strengthening National Awareness Raising and Education for Chemicals Management, October 1998
- * Developing and Strengthening National Legislation and Policies for the Sound Management of Chemicals, June 1999
- * Strengthening National Capacities for Risk Management Decision-Making for Priority Chemicals, October 1999

The reports of the workshops are meant to serve as practical inputs to country-based initiatives in the respective areas and may also highlight certain issues which may require further attention at the international level.

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Executive Summary

The thematic workshop on *Strengthening National Information Systems and Information Exchange for the Sound Management of Chemicals* was the first in a Series of Thematic Workshops on Priority Topics of National Chemicals Management Capacity Building and took place in Geneva, Switzerland, from 2-4 September 1998. It was organized in the context of the *UNITAR/IOMC Pilot Programme to Assist Countries in Implementing National Action Programmes for Integrated Chemicals Management* in which Argentina, Ghana, Indonesia, and Slovenia are participating. The event brought together 30 representatives from national governments, international and regional organizations, industry associations, labour organizations, and public interest groups.

The workshop concluded that in many countries, knowledge about the existence of, and access to, certain chemicals information is weak, and the flow of information between different levels and groups in society is often inadequate. Similarly, there is often reluctance by national stakeholders to co-operate and share available information. A more co-ordinated and integrated approach to information systems for chemicals management appears to be warranted. A number of key themes were identified which were considered to be of key importance towards the strengthening of national information systems. These included: improving the exchange and flow of information among national stakeholders; ensuring that national information systems address countries' needs and realities; and strengthening national information systems in a systematic way.

In a series of plenary discussions and working group sessions, the workshop explored various aspects of strengthening national information systems for chemicals management which addressed the aforementioned themes. More specifically, the workshop recommended that countries should:

- raise awareness on the benefit of enhanced co-operation between various parties in developing and maintaining a national information system;
- strengthen co-operation and improve the sharing of information;
- make effective use of both nationally generated chemicals information and internationally available chemicals information;
- consider focussing on a selected number of priority topics requiring improved information and/or improved access to such information;
- assess and address the needs of users (e.g. what specific information do the users require; what format or what type of information products would be most suitable; under what constraints do users operate?);
- consider and address local and national realities (e.g. political and administrative organization, level of public awareness and education, resource availability); and

- consider how to ensure the viability and sustainability of the information system.

Recognizing the importance of a multi-stakeholder and systematic approach to developing and implementing a national information system on chemicals management, the workshop generated some ideas on this matter. For example, taking a step-wise approach to ensure that complex issues are dealt with a pragmatic way; using, where possible, a National Profile and defining national priorities in the field of chemicals management as an important starting point for an information system; ensuring that all stakeholders are given opportunities to participate.

1. Introduction

1.1 Background and Problem Statement

Availability of and timely access to chemicals information are essential elements.

The availability of and timely access to chemicals information can be considered essential elements in supporting the sound management of chemicals throughout their life-cycle. Depending on the various groups and individuals which are handling and using chemicals on a day-to-day basis or which are responsible for the management of chemicals, relevant information may include, inter alia, safe handling and use information, information on emergency response measures, toxicity data, sound disposal information, residue data in food, environmental quality data, production and trade statistics. With regard to communities and the population at large, it can be said that without access to relevant information these groups are at a greater risk of being exposed to adverse effects of chemicals and are less able to take preventive measures.

Strengthening national information systems is a priority concern.¹

While in all countries, various actors, including government agencies, industry and non-governmental organizations (NGOs) as well as individuals, possess different types of chemicals information, evidence suggests that knowledge about the existence of, and access to, certain information sources is weak, and the flow of information between different levels and groups in society is often inadequate. Similarly, there is often some reluctance by national stakeholders to co-operate and share available information. One main reason for these deficiencies is likely to be rooted in a still predominantly sectoral approach to chemicals management and a lack of awareness among stakeholders of the value of existing information to others. A more co-ordinated and integrated approach to information systems for chemicals management appears warranted.

Through the preparation of their National Profiles, a number of countries have identified the strengthening of their national information systems for chemicals management² as a priority concern. The initiation of activities in several countries to strengthen this aspect in a co-ordinated manner, and with the involvement of all stakeholders, represents a concrete step towards addressing existing shortcomings in a systematic way. At the same time, these country-based activities are a contribution towards the implementation of Chapter 19 of Agenda 21 and the recommendation of the Intergovernmental Forum on Chemicals

¹ The term “information systems for chemicals management” is used in various contexts and often carries a different meaning and scope for different people. As a working definition for the purpose of this document, a national information system for chemicals management is defined as a *network of institutions and sources of*

Safety (IFCS) that “As a longer term objective, chemicals information systems should be in place in all countries...” (Priorities for Action, IFCS, 1994).

1.2 Organization and Aim of the Workshop

“How can countries best organize themselves to ensure that the right information gets to the right users at the right time?”

The workshop on *Strengthening National Information Systems and Information Exchange for the Sound Management of Chemicals* was held in Geneva, Switzerland from 2-4 September 1998. Thirty participants from national governments, international and regional organizations, industry associations, labour organizations, and public interest groups took part in the meeting. The event was organized in the context of the *UNITAR/IOMC Pilot Programme to Assist Countries in Implementing National Action Programmes for Integrated Chemicals Management* in which Argentina, Ghana, Indonesia, and Slovenia are participating.

The aim of the thematic workshop was to provide a forum for countries and experts to exchange experiences, discuss innovative approaches and provide practical guidance to countries on how to strengthen national information systems for chemicals management in a systematic manner. Given the potentially wide scope of the topic of “national information systems for chemicals management” and the varied challenges which countries are facing in this context, the core question around which the thematic workshop centred was: “How can countries best organize themselves to ensure that the right information gets to the right users at the right time?”

To structure these discussions in a pragmatic way, the workshop started off with a series of twelve country and expert presentations on Day 1. These presentations aimed at providing a broad overview and the various perspectives of stakeholders on the topic. A brief summary overview of these presentations is provided in Section 1.3 below. A more comprehensive summary of the presentations is provided in Annex A. On the basis of these presentations and initial discussions, participants identified a number of key themes which were considered to be of key importance towards the strengthening of national information systems and which were addressed through working groups and plenary discussions on Day 2. Results and main conclusions of

information (e.g. databases, libraries) to support the sound management of chemicals, including dissemination of chemical safety information to users. The scope of this working definition is fairly broad and puts particular emphasis on the concept of a network, i.e. the exchange of information which is collected and managed in a decentralized manner among various institutions at the national level.

these discussions are provided in Chapters 2-6. On the basis of presentations and discussions, draft conclusions were compiled and tabled for review and discussion on Day 3.

1.3 Country and Expert Presentations

Country Presentations

Chemicals information is a tool to support chemicals management; not an end in itself.

Country representatives involved in task force activities towards strengthening information systems for chemicals management, including, Dr. Ernesto de Titto and Mr. Guillermo Zucal (Argentina), Ms. Angelina Bainiah and Mr. Frank Antwi (Ghana), Dr. Agus Wahyudi and Dr. Thompson Sianipar (Indonesia), Ms. Darja Bostjancic and Mr. Vladimir Ban (Slovenia), Dr. Enock Masanja (Tanzania), and Dr. Adham Ramadan (Egypt), shared experiences and some main challenges which are being faced in their countries. As a first step, the task forces in several of the countries have or were in the process of conducting assessments of existing chemicals information in the country as a basis for further action. These introductory presentations underscored, inter alia, the following points:

- There is a wide range of issues which a country may decide to address towards strengthening its information system and any country would need to set priorities on the basis of its particular needs and circumstances;
- Chemicals information should be considered a tool to support chemicals management throughout the various stages of the chemical life-cycle and not an end in itself; and
- The involvement of various stakeholders in task force activities has been particularly beneficial, raised mutual awareness on each others activities, and built a valuable basis for medium- and long-term collaboration.

Expert Presentations

Strengthening of national information system is an ongoing process.

Mr. Alain Pasche, independent consultant for the Swiss Agency for Development and Cooperation (SDC), provided details on an on-going project with Egypt and Dr. Brian Hirsch, US Environmental Protection Agency, shared some of the challenges of operating a national information system in a country with long-standing experience in operating a chemicals information system. Some key ideas put forward by these presentations included:

- the potential value for a country in following a systematic step-by-step process and using decision-aid procedures for getting organized and setting realistic targets and priorities;
- the fact that strengthening of a national information system should be seen as an on-going process, where efforts constantly need to be adapted to new challenges, rather than a fixed target which can be fully achieved within a certain period of time; and
- the potential value of the Internet as a powerful medium for disseminating chemicals related information to a wide range of users.

Presentations by Non-governmental and International Organizations

Effective co-ordination and networking among national stakeholders is a key factor.

Mr. Ronald Macfarlane, Pesticides Action Network, Ms Karon Armstrong, Chemicals Manufacturer's Association (CMA), and Dr. Sabine Dorf, European Council of Chemical Industries (CEFIC) shared experiences, perspectives and concerns of their organizations with regard to national information systems for chemicals management. These were followed by presentations by international organizations, including Dr. Michael Ruse, International Programme on Chemicals Safety (IPCS), Ms. Fatoumata Ouane, United Nations Environment Programme (UNEP), and Dr. Christophe Nuttall and Mr. Jocelyn Fenard from UNITAR. Some main issues highlighted by these presentations included the following:

- the potential value of involving non-governmental stakeholders in national discussions on information systems and making effective use of their expertise, networks, and resources;
- the importance of effective co-ordination and networking among national stakeholders as a key factor for achieving effective and sustainable results at the country level; and
- the need to exchange and make effective use of information and information management tools made available through international organizations, industry, and other non-governmental organizations, in order to make efficient use of available resources.

More comprehensive summaries of the presentations on Day 1 of the thematic workshop are provided in [Annex A](#).

2. Key Themes/Questions for Strengthening National Information Systems for Chemicals Management

Several key themes emerged during the presentations on Day 1, which appeared to be of major importance for countries and which provided a general framework for more detailed discussion during the remainder of the event. The five key themes which emerged can be clustered around the following headings:

Improving the Exchange and Flow of Existing Information Among National Stakeholders

Awareness of existing information is often low.

While a wealth of chemicals information is in principle available at some institution in a country, evidence suggests that mutual awareness of existing information among national stakeholders is often low and that the exchange, circulation, and use of information could be improved. Similarly, awareness and use of information, information management tools, and databases which have been developed at the “international” level, i.e. outside the country, are often inadequate. Two key themes which emerged in this context and which are covered in more detail in Chapters 3 and 4 included the following:

- How can a country ensure that national stakeholders are involved and co-operate in the exchange of information at the national level?
- What steps can be taken to ensure that nationally generated and internationally made available information is used in an effective manner?

Ensuring that National Information Systems Address Countries Needs and Realities

The exchange, circulation, and use of information could be improved.

Examples and experiences from countries indicate that the information needs of certain user groups are often not, or not adequately, addressed, and past efforts to strengthen (elements of) a country’s existing information system have in many cases not resulted in the desired outcome and have been abandoned. The importance of adapting a national information system to local needs and realities was highlighted and two main themes emerged; discussions on which are summarized in Chapters 5 and 6:

- How can a country ensure that a national information system is effectively addressing the needs of the various user groups?

- How can institutional, technological and financial aspects of a national information system be designed to ensure its sustainability?

Strengthening National Information Systems in a Systematic Way

Start with an assessment of existing information sources.

Over the past years, several countries have set up multi-sectoral task forces to strengthen their information systems for the sound management of chemicals. One main starting point for activities has been to conduct an assessment of existing information sources and the relevant infrastructure. Given the complexity of the topic, however, it has proven to be a challenging task to set pragmatic and short-term targets which would generate immediate results and to obtain the continued commitment of stakeholders. A further theme which therefore emerged and which is covered in Chapter 7 concerned the following:

- How should a country best get organized and what steps could be taken to strengthen national information systems in a pragmatic and systematic way, while maintaining a broad-based approach to the issues at hand?

3. Ensuring Co-operation of Concerned and Interested Parties

Stakeholders need to be persuaded of the benefits of co-operation.

Various groups or individuals at the country level who are dealing directly or indirectly with chemicals make use of information on a day-to-day basis in order to safely use and manage these substances. A national information system is a tool to ensure that the right information gets to the right person at the right time and ultimately relies on an efficient flow and exchange of information among stakeholders. To achieve effective co-operation, stakeholders will need to be persuaded of the benefits of co-operation and effective mechanisms have to be put into place for sharing information.

As experienced by many countries, gaining access to essential information can be a difficult exercise, even from within separate divisions of the same institution. Not knowing about the existence of certain information may be one obstacle, but in many cases, even once information has been located, there often appears to be a certain reluctance on the part of stakeholders to share available information. Reasons for such reluctance may be manifold, and include legal or administrative barriers, the unwillingness to make available time and/or resources to supply information, and fear of a potentially damaging impact to an organization's interests and activities. Thus, political, institutional as well as personal impediments might pose obstacles for accessing information at the country level

3.1 Raising Awareness on the Benefit of Enhanced Co-operation

Recognizing that an effective chemicals information system depends on extensive co-operation between various parties, raising awareness on the overall benefits of enhanced cooperation may provide, in many countries, a valuable starting point for addressing this issue. Some important first steps in this context may include the following:

- Discuss and identify the likely benefits which various stakeholders should expect from strengthened co-operation and exchange of information. An open discussion among concerned parties could provide a valuable basis for identifying key benefits; and
- Explore options of how key stakeholders could be persuaded of the benefits which should result from increased co-operation. Experiences suggest that partners in an information system will become interested and provide support only if they are convinced that they are likely to benefit from improved co-operation.

Decentralized versus Centralized Elements/Functions within a National Information System

When strengthening and developing a national information system for chemicals management, the question of having a “centralized” versus a “decentralized” system has emerged in many countries. Interestingly, evidence shows that no single country, whether developed or developing, has a fully centralized information system for chemicals management, meaning that no one single institution is responsible for the collection and management of chemicals information. Rather, all countries have various institutions which collect and manage certain information and data relating to chemicals management. Discussions highlighted that the real issue which will need consideration is how decentralized elements within a system can best be co-ordinated and how the exchange and flow of information can be organized most effectively. The potential need for establishing a network hub in order to facilitate co-ordination and information flow was raised, which might need formal endorsement in national legislation. Responsibilities of the hub may include:

- to maintain an inventory of all stakeholders, providing information on contact details, areas of activity, and data sets they hold;
- to strengthen co-operation between participating stakeholders by developing a data access protocol;
- to promote the harmonization of data collection methods, formats, terminology, and classification; and
- to broker financial support to enable stakeholders to fulfil their roles.

3.2 Strengthening Co-operation and Improved Sharing of Information

Begin with only a small network.

Once key stakeholders are persuaded of the benefit of increased co-operation, experiences from countries indicates that it will still remain a challenge to maintain commitment and to set up a mechanism for improved sharing and exchange of information. In many cases, establishing such a mechanism will require that many stakeholders commit at least some time and resources for the benefit of others and in many cases a minimum degree of trust will be necessary that information provided will not be misused or misappropriated by others. In order to “put improved co-operation into practice”, countries will have to carefully analyse a suitable mechanism which will take into account the country’s specific situation and circumstances. Some general issues which have been highlighted and which a country may want to consider in this context include the following:

Clearly define the roles and responsibilities of various stakeholders for accessing and making available information. The development and endorsement of a protocol or memorandum of understanding for the exchange of information could be considered so that all stakeholders are clear about their responsibilities. Due consideration should be given to possible concerns regarding data confidentiality;

Start possibly with only a small network of committed institutions and document progress as a way to gradually build and expand a national network of stakeholders. Documenting benefits and progress might be an effective means to overcome initial reluctance or scepticism of stakeholders. Starting small might also make it easier to address, at an early stage, specific weaknesses of an existing mechanism for the exchange of information;

Clearly recognize each institution’s contribution and efforts in supporting exchange of information as well as its specific mandate in this domain. An acknowledgment of the contribution or ownership of information may, in many cases, become an important factor in ensuring commitment of stakeholders to the network in the medium-term. Countries may want to discuss possibilities to provide such acknowledgment and respect ownership rights, while ensuring that the latter are not used to unnecessarily regulate access and hinder the legitimate use of information and data sets by third parties; and Build and improve an information system upon on-going activities and procedures as stakeholders will more likely contribute to a more co-ordinated system rather than be willing to completely abandon or change their current way of working.

4. Enhancing Use and Exchange of Existing Information

A wealth of chemicals information is available internationally.

Presentations by participants highlighted that a wealth of chemicals related information is currently available, both at the national and international level. At the country level, a wide range of actors “own” chemicals information, which might include toxicity data and emergency response information in the hand of poison control centres or import statistics in the hand of regulatory authorities. At the international level, a wealth of chemicals information is made available through international organizations as well as through non-governmental organizations.

When thinking about initial and practical steps to take to strengthen a national information system for chemicals management, a more effective use of *available or existing* information may need to be considered. In general, related activities are low-cost and can be expected to provide immediate benefits to stakeholders, avoid the duplication of effort, and provide a fertile basis on which more substantive and resource intensive activities could build, such as the setting-up of new databases. With regard to the type of chemicals information, a distinction can be made between nationally generated information and information which is generated or made available at the international level.

4.1 Making Effective Use of Nationally Generated Chemicals Information

A key characteristic of nationally generated information is that, in many cases, it can *only* be generated at the country level and might include, for example, production and trade statistics, chemical use data, poisoning statistics, environmental quality data as well as results from laboratory and field testing. Typically this information exists in various formats and in possession of one or several individuals or institutions within or outside of government.

Evidence from countries suggests that often this information is not effectively circulated at the country level and knowledge or awareness on the existence of certain data sources is often weak. Identifying and making effective use of nationally generated chemicals information can be considered an important basis for strengthening a national information system. Some key steps that countries may want to consider in this context include the following:

- Identify and assess all relevant data and information sources for

nationally generated chemicals information, including responsible institutions and/or individuals. Taking into account the particular circumstances of the country, such an assessment should provide for a fairly detailed description of each information source, including information on the type of data collected, the periodicity and accuracy of data collection, the format in which it is stored (e.g. hard copy, electronic format), current procedures for accessing the information, etc.;

- Explore options for raising awareness among concerned stakeholders of the existence of nationally generated data sources and their potential value for their activities. A list of stakeholders and relevant information may be developed as an information and reference document;
- Develop procedures or protocols to facilitate access to, and use of, available information by national stakeholders. A formal agreement for accessing and exchanging information might be a suitable way to clarify responsibilities and rights of the various stakeholders and thereby facilitate the actual exchange of nationally generated data; and
- Explore possible needs and opportunities for harmonizing data collection and classification methods of existing data sets in order to facilitate information sharing among stakeholders. In this context, the various needs of the stakeholders (e.g. in terms of accuracy and reliability of data or the periodicity of data collection) may be considered as well as international standards or procedures which have been adopted at the international level.

4.2 Making Effective Use of Internationally Made Available Chemicals Information

Internationally generated information is cost effective.

While a wealth of such internationally generated information is available, evidence suggests that chemicals-related information which is disseminated to national focal points is often not circulated and Presentations by international organizations, governments and industry underlined the wealth of chemicals related information which is made available at the international level, free of charge or on a commercial basis. Often such information has been peer reviewed by experts and might include, inter alia, chemical specific information regarding hazard characteristics and toxicity, entire databases on chemical specific data, information management tools (e.g. software, CD ROMs), information on legislation and administrative and institutional systems, and international conventions and standards. In the case of several

Making Use of Information Technologies

Information and communication technologies have experienced rapid developments over the last years and new technological options are likely to have a major impact on the effective organization of a chemicals information system. Although technological options will have to take account of countries particular circumstances (e.g. telecommunication infrastructure) or the need for a human interlocutor, it is likely to become more and more important for countries to explore how new technologies could be used to enhance information exchange, access, and dissemination.

One promising development, which might be of particular relevance to countries which aim to strengthen networking among stakeholders, is based on using Internet tools and services, such as electronic mail and the World Wide Web (WWW), as a primary means of communication and information exchange. Such systems can be used to promote access to databases and to solicit and facilitate input and feedback from various stakeholders and the public.

international organizations, such information is actively disseminated through focal points at the country level awareness of information sources which are made available by other governments or by industry is often weak. Making effective use of internationally generated information should be considered as a cost effective means for strengthening national systems and in pursuing relevant activities, countries should consider the following points:

Facilitate others' access to information received by focal points.

- Identify what international literature and databases are available in the country and which specific offices hold, and regularly receive, such information from international organizations. In this regard, government, academia, research institutes, and non-governmental organizations should be consulted;
- Develop procedures to facilitate access and circulation of information received by focal points at the country level;
- Review international sources of chemicals information, including those made available by international organizations (e.g. IPCS, ILO, UNEP, FAO), regional and economic groupings (e.g. OECD, EU), national governments (e.g. US EPA, KEMI), and commercially available databases (e.g. Chemical Abstracts, Chem Tox);
- Examine other internationally generated materials which could assist in the development of a national information system. Such materials could include, for example, computer software, chemicals information management methodologies, and multi-lingual definition of chemical terms. Existing information management tools, such as those developed by IPCS for the collection of data on poisoning cases, could provide a ready-to-use framework for the collection of locally generated information; and
- Evaluate the potential benefits of harmonizing data quality standards, collection and storage methods with international conventions or with internationally adopted standards, in order to avoid possible costs of modifying procedures at a later stage and to facilitate comparison of data internationally.

5. Addressing Countries' Needs, Priorities and Realities

An information system for chemicals management is a tool to assist various institutions and individuals in the sound management of chemicals. In order to be effective, the information which is made available through a chemicals information system has to ultimately address users' needs. Similarly, the mechanism for exchanging, providing access or disseminating information, including relevant institutional, technological, and financial aspects, needs to be adapted to the particular situation in a country in order to provide a viable service. In effectively addressing the needs of various user groups and countries' realities, a number of issues emerged which a country may want to take into consideration.

5.1 Identifying Priority Issues Requiring Information

Focus on a selected number of priority topics.

Towards effectively strengthening the service function of an information system, it is often necessary that focus be given to a selected number of priority topics requiring better, or a better flow of, information, taking into account available resources. The entry point for selecting priorities could be particular concerns or problems which a country is experiencing due to a lack of readily available information to a certain group.

While there was consensus among participants that each country would have to decide on the priority it wants to address, taking into account its specific circumstances, it appeared difficult to provide conclusive guidance on when would be the best moment for setting priorities, i.e. based on a comprehensive assessment of available information sources or, prior to such an assessment, focussing resources from the outset on specific chemicals management priority areas, e.g. emergency response for chemical accidents. Some general issues which a country may want to consider in setting its priority(ies) include:

- priority problems identified in the National Profile, which could be addressed through improved quality and flow of information, such as information for emergency response, information for workers in industrial facilities, information for regulatory control agencies on chemical or pesticide residues in foodstuff or the environment, etc.;
- particular weaknesses with regard to the availability of specific information as identified through an assessment of existing information sources in the country, which a country might want to conduct in addition to the assessment provided in its National Profile;

- making use of decision-aid procedures to set priorities according to agreed-upon criteria;
- the amount of resources necessary for improving the information requirements and the degree to which resources can be mobilized for this task; and
- the severity of the problem, e.g. in terms of acute or high risk of human exposure, sensitivity of the environment.

5.2 Assessing and Addressing Needs of Users

As the purpose of a chemicals management information system is to serve information demands and needs of its users, it is important to assess these needs before embarking on concrete activities. Otherwise, valuable resources and time may be spent on preparing unnecessary information and information products. Towards identifying relevant needs, participants identified a number of basic questions which countries may want to carefully review prior to initiating new activities. These included the following:

Who are the main users of the information?

To enhance its utility, information needs to be tailored to the needs of specific groups. Thus for any particular issue, the users of the information need to be identified. These may include farmers, workers, communities, the general public, technical specialists, emergency personnel, industrial managers or senior officials in government. In this context, it might often also be useful to evaluate the educational background, age, language abilities, and other characteristics of the target group which might be relevant in providing adequate information and data.

What specific information do the users require?

The objective here is to specify the type of information that would assist the target group(s) in the safe management of chemicals. One approach is to ask the users of the information to articulate their information needs and difficulties they are experiencing with the information they are currently provided with. This can be done, for example, by convening workshops, conducting interviews or by preparing and administering questionnaires. Another approach may be to focus on the problems which are currently experienced due to a lack of suitable information.

What format or what types of information products would be most suitable?

Information should be adapted to the user group.

In order to be most effective, the information and the format in which it is provided (e.g. report, brochure, data sheets, labels, Internet) should be adapted to the user group. Key issues to consider are, inter alia, the language medium and education level of the user. In some cases, it is useful to base the information on, or follow, recognized scientific and/or international standards.

Under what constraints do users operate?

In order for information to be most useful, particular constraints under which certain target groups are operating might need to be taken into account. For example, information for emergency response and poisoning cases is of little use if it is not available in a timely manner. In other cases, it might not be the timely access to information but issues relating to the reliability of data or its confidentiality which might be important aspects to consider. Operational constraints of users or information providers need to be carefully examined as they can play a critical role for the effective functioning of the information system.

5.3 Addressing Local and National Realities

National Profile a good starting point for assessment.

Discussions among participants in the workshop revealed that it is unlikely that one approach or one technical solution exists towards establishing a chemicals information system in a country. In order to be effective, i.e. to serve its users in a cost effective manner, a chemicals information system needs to be adapted to the particular circumstances of a country whether developed, developing or in economic transition. In order to progress in a pragmatic manner, a task force may therefore take a close look at some specific characteristics of the country and constraints which need to be taken into account. In this context, it was highlighted that a country's National Profile would provide a good starting point for assessing some key features of the existing chemicals management infrastructure. Some specific issues which participants thought were likely to be of considerable relevance to ensure that a chemicals information system is adapted to the specific circumstances and needs included the following:

- the physical, geographic, and demographic structure of the country, as well as its political and administrative organization, including

Access and Dissemination of Information and the Right-to-Know

Easy access to chemicals information by various user groups can be considered an essential requirement of an effective information system while, at the same time, taking due consideration of legitimate concerns by industry and governments over the confidentiality of certain data. In order to provide communities and the public at large with chemicals-related information, a number of governments have in recent years promoted the principle of Right-to-Know, which has also been endorsed in Agenda 21. The Right-to-Know principle establishes the right of citizens to certain chemicals information, in general in relation to releases of chemicals into the environment, which might pose a potential risk to human health. In several industrialized countries, legal requirements with regard to the Right-to-Know principle have been a major driving force to collect and disseminate chemicals information to the public. The promotion of the Right-to-Know principle in developing and industrializing countries could similarly provide support for the strengthening of national information systems. Some issues which a country might want to consider include the following:

- Recognizing that cultural attitudes and governance mechanisms have an important bearing on public access policies, countries will need to assess how to implement Right-to-Know programmes while taking into account local realities.
- Although information sharing is a gradual process that evolves over time, it may nevertheless be useful to consider endorsing the Right-to-Know principle in legislation as a tangible measure to support demands for improved information access and dissemination.
- In order to build trust and confidence in the system, particularly during the initial set-up phase, it is important to address legitimate concerns over confidentiality raised by stakeholders. Relevant principles and criteria developed at the international level, e.g. by the European Union and the OECD, might provide useful guidance in this context.
- In order for Right-to-Know policies to have an impact, raising public awareness on chemical risks to health and the environment is a preliminary step, in order to create a demand for chemicals information.
- Additional reporting by industry, which might be necessary under a PRTR scheme, will not necessarily mean increased costs. Evidence suggests that in some cases, reporting of emissions has resulted in cost savings by helping companies identify process inefficiencies and implementing cleaner production options. In addition, industry reporting can be rewarded through improved public relations.
- Government may also stand to benefit by reducing its monitoring burden and compliance costs.
- Information should be tailored to user needs. Language, timing, and method of delivery should be designed so as to facilitate easy understanding. Multiple-dissemination formats may therefore need to be developed (e.g. CD-ROM, paper copies).

levels of centralization and decentralization between national, regional, and local governments;

- legal instruments and non-regulatory mechanisms for managing chemicals, including the effectiveness of their implementation and enforcement;
- the mandate, institutional set-up, and activities of government ministries and agencies as well as non-governmental bodies relating to the various aspects of chemicals management;
- technical and laboratory facilities available in the country to support programmes for the management of chemicals;
- the state of the country's telecommunications infrastructure and the technological equipment and services available to stakeholders (e.g. computers, Internet connectivity);
- the level of public awareness and education as well as that of other major target groups, such as farmers and workers, concerning the potential health and environmental risks of chemicals;
- overall national literacy levels as well as that of specific target groups in the country;
- resource availability (including human and financial) within government and non-governmental institutions relating to the various aspects of chemicals management. It may also be important to consider the extent to which professional staff turnover in government institutions is affecting national efforts in the area of chemicals management;
- the degree to which stakeholders are able and willing to co-operate in developing and strengthening the information system. Constraints may include difficulties in sharing data, use of incompatible data standards, concerns about data quality, and resource limitations; and
- the degree to which certain sources of information are trusted, as the identity of the information source can have a major influence on how the information itself is received by the target groups. For example, NGOs may dispute government press releases and vice-versa.

6. Ensuring Sustainability

When thinking about strengthening a national information system in the medium- and long-term, a key issue to address is how to ensure the viability and sustainability of the system. Experiences from a number of countries indicate that considerable resources can be wasted on projects and activities that provide no tangible results in the medium-term. While resource constraints were raised as an issue which might undermine the viability of a system, it was stressed that the key condition for sustainability was that a system must be seen to deliver immediate and long-term improvements to chemicals data management and benefits to all its partners. Some key considerations for ensuring the sustainability of a national information system included the following:

Explore
self-financing
mechanisms.

- Information providers and users, and indeed society at large, should be convinced that they stand to gain from the services provided by an information system. In this context it may be worthwhile to consider ways of actively promoting and advertising the information system to users and highlighting its benefits.
- Senior decision- and policy-makers should be made aware and be persuaded of the benefits of participating in an information system. At some point in the process, policy support for strengthening co-operation and networking among stakeholders should be obtained.
- Sufficient funds and expertise should be mobilized to enable stakeholders to fulfil their responsibilities as information providers. The resources required to set-up and maintain an information system and to allow all stakeholders to provide substantive input and fulfil their respective responsibilities need to be determined. Although donor assistance may help initiate a chemicals information system, it is important that countries explore self-financing mechanisms to keep the system running after such support has been withdrawn, (e.g. levying a fee on the use of data sets to recover costs, levying a fee on chemical use).
- Supporting an information system through legislative backing would assist efforts in soliciting funding for its upkeep. Other legislation and policies promoting information access, such as the Right-to-Know, may also be called upon to strengthen the case for maintaining a chemical information system.
- In order to ensure stakeholder co-operation in the information system, particularly that of industry, adequate data security and

confidentiality provisions should be set up to prevent illegitimate access and abuse of sensitive information.

Select information
technology in
light of local conditions.

- It is considered important that all stakeholders document their data sets, e.g. the type of information it contains, its structure, procedures for maintenance and operation. Evidence suggests that such documentation is important to create an institutional memory and avoid a situation where certain databases depend on a few individuals, who might leave their positions and thereby undermine the system. Clear documentation of data sets will also facilitate access to, and use of, information.
- Retention of trained staff is often cited as an important obstacle to sustaining the operation of an information system. Measures to alleviate high staff turnover therefore need to be examined or, alternatively, the establishment of a system that is fairly independent of staff turnover.
- The information technology selected to manage the information system needs to be assessed in light of local conditions. Some factors to consider in this regard include training requirements, the telecommunications infrastructure, resources needed for technical support and maintenance, etc.

Responsibilities of Industry

As a manufacturer and supplier of chemical products, industry has an important role to play in providing information to governments, workers, consumers, and other stakeholders. In most countries, industry is required by legislation to submit, inter alia, information to regulatory authorities on the health effects and environmental fate of its products for permitting and registration purposes and to satisfy emissions related reporting requirements.

Industry has embarked on various activities that have an important information component, such as implementation of responsible care systems (e.g. Responsible Care, Quality Care, Product Stewardship programmes), emergency response assistance, training activities for users of chemicals, and the organization of information flow within a company. Through these activities, industry has acquired substantial experience and technical expertise relating to the management of chemicals information, and thus has potentially an important contribution to make to strengthening national efforts in the area of chemicals information management. Possible responsibilities and contributions of industry in this context may include:

- Provide easily accessible information on the safe use, the health effects, and environmental fate of locally manufactured and distributed chemicals, as well as other chemicals of concern.
- Provide technical guidance for the classification and labeling of agricultural and industrial chemicals in transport, storage, and occupational use, consistent with the requirements set by globally harmonized classification and labeling systems.
- Market products labeled for transport and use in compliance with local stipulations.
- Assist in responding to emergencies involving chemical accidents or spills.
- Organize “train-the-trainer” programmes for regulatory authorities and the local chemical industry, especially for Small and Medium Enterprises (SMEs), relating to chemicals information management.
- Report emissions as stipulated by local requirements as well as promote voluntary reporting initiatives within industry.
- Provide Material and Safety Data Sheets (MSDS) in compliance with local requirements and develop MSDS instructional tools, such as booklets and videotapes.
- Develop and implement life-cycle programmes based on product stewardship principles in close collaboration with national chemical associations and local authorities.
- Share industry experiences and provide technical guidance on the development and implementation of chemical databases.
- Promote and solicit the involvement of local industry, including SMEs, in partnerships to strengthen chemicals information systems.
- Participate in information related activities of international organizations (e.g. FAO, IFCS, IPCS, OECD, UNEP, UNITAR) at national and local levels.

7. Getting Started in a Systematic and Practical Way

Take a stepwise approach.

When initiating concrete activities, countries may want to take a stepwise approach to ensure that this complex issue is addressed in a pragmatic way. In discussing possible steps countries might want to take, the following issues were highlighted:

The preparation of a National Profile and the defining of national priorities in the field of chemicals management (e.g. through a National Priority Setting Workshop) as an important starting point to focus national efforts and strengthen those aspects of a national information system which address countries' priorities.

Identify legal requirements.

- Important initial activities of a task force on strengthening national information systems should include:
 - defining the purpose and objectives of the national information system and, to the extent possible and suitable, relevant priorities;
 - sensitizing stakeholders on the mutual benefits to be gained through information sharing and collaboration;
 - conducting a thorough needs assessment; and
 - identifying legal requirements related to information collection, management, and dissemination, including national legislation as well as international obligations.
- Important task force activities related to assessing the existing situation may include:
 - conducting a detailed assessment of the existing information infrastructure, including sources of information, their location, and accessibility;
 - identifying existing problems and gaps;
 - determining if the legal framework needs to be strengthened; and
 - identifying available resources and other constraints.
- Important issues related to co-ordination among stakeholders (e.g. users and providers of information) in this context may include:
 - ensuring that all stakeholders are aware of the work conducted by the task force and are given opportunities to participate;
 - developing mechanisms for sharing of information resources and highlighting the mutual benefits of such collaboration; and

- defining appropriate roles and responsibilities of involved parties.
- Throughout the process of addressing weaknesses of the existing information system, there will be a need to set priorities for action. Taking into consideration its particular circumstances, countries will often have to weigh benefits of a comprehensive and systematic approach (e.g. a more time consuming, thorough assessment) with the benefits of a more narrow approach (e.g. targeting assessments to specific information problems or user needs).

Annex A: Summary of Presentations

Following are summaries of presentations made during the thematic workshop on Strengthening National Information Systems and Information Exchange for the Sound Management of Chemicals, 2-4 September 1998, by country representatives and experts.

Argentina

Dr. Ernesto de Titto, Ministerio de Salud y Acción Social (Ministry of Health), and Ing. Guillermo Zucal from the consumer organization ADECO, reported that Argentina's information management efforts are focussing on two selected priority areas, namely toxicological emergencies and chemical accidents. With regard to toxicological emergencies, baseline information has been compiled through national surveys on toxicology units and laboratories and on the availability and accessibility to medical antidotes. In co-operation with IPCS, the databases INTOX and INCHEM have been distributed to Poison Control Centres throughout the country and physicians are being encouraged to use the databases in order to promote a harmonized registration system of toxicological consultations. Activities relating to chemical accidents have focussed on conducting a national survey to assess the quality of available data and the equipment that is employed to prevent and respond to chemical spills and accidents. It was reported that improving information flow and collaboration between stakeholders has been difficult due in large part to a reluctance by some key stakeholders to co-operate.

Argentina aims to promote information access and use based on the Right-to-Know principle, which is enshrined in its constitution and other laws aimed at protecting consumers. A number of priority areas have been identified requiring improved public access, including product labelling, PRTRs, and registers on risk, toxicology, handling procedures, and emergency response. A design proposal for PRTRs has been developed which is regarded as an important mechanism for enabling communities to access information on their local environment. Main challenges ahead include developing innovative ways for fostering collaboration between stakeholders by promoting a new "information culture" based on the Right-to-Know principle and securing financial and human resources to build chemical databases and registers.

Ghana

Mrs. Angelina Bainiah, from the Customs Excise and Preventive Service and Mr. Frank Antwi from the Environmental Protection Agency (EPA) reported that Ghana's National Profile revealed that although substantial information on chemicals was available nationally, the data was often fragmented, incompatible, of varying quality, and poorly documented and there was no structured procedure or mechanism to facilitate information exchange between stakeholders. It also identified two major areas for which there was inadequate information, namely waste generation and disposal and chemical accidents.

A questionnaire was administered to establish a baseline of chemical data management activities in the country. The survey seeks to systematically document data sets dealing with the different phases of the chemical life cycle as well as to evaluate data management practices such as data collection methods, data quality standards, and data access regulations. It is expected that the findings of the questionnaire would help clarify stakeholder roles by providing a basis for assigning specific responsibilities on data collection and management, as well as harmonize data collection methods and standards by designing common data collection forms. In the long-term, it was considered that chemical-related data sets could be archived at a central point. As the national coordinating body on environmental issues, the EPA is likely to act as the custodian of national chemical data sets. The long-term sustainability of the information system beyond the pilot phase period was a major issue of concern and Ghana was considering ways for creating an income generating service within the programme in order to secure regular funding for data management activities.

Indonesia

Dr. Agus Wahudi, Ministry of Industry and Trade, and Dr. Thompson Slanibar, Ministry of Health, reported that in Indonesia chemical data is often scattered across the country and managed using different and often incompatible formats. In order to deal with this problem, the designated task force has developed a work programme comprising a number of key steps. These include: (i) identifying stakeholders and allocating responsibilities; (ii) determining types of information required; (iii) developing a harmonized codification system; and (iv) designing a computerized information system.

In the initial stage, key contact persons in stakeholder institutions were identified based on an agreed set of criteria. Stakeholders were then given the responsibility to collect and maintain information about specific data themes. To date, thirty data themes have been assigned to respective task force members. In order to address incompatibility issues in data reporting, a consensus was reached on a standardized naming system for chemicals based on the Harmonized System and Chemical Abstracts Service codes. Recognizing the large volume and complexity of chemical data, the task force in Indonesia has developed a design proposal for a computer software programme and a networking arrangement to facilitate data entry and access by participating institutions. It also intends to make use of Internet-based communication as well as other multimedia tools (e.g. TV and radio programmes, educational videos) to promote wider information dissemination.

Slovenia

Ms. Darja Bostjancic, Ministry of Health, who serves as the Co-ordinator of the Intersectoral Committee on the Management of Dangerous Chemicals (ICMDC), explained that in view of the crosscutting nature of chemicals information and recognizing that information systems are more of a tool than an end in itself, it was not considered appropriate to establish a specific task force on information management in Slovenia. Rather, it was considered more practical to build an information system around the five priority concerns identified during the National Priority Setting Workshop.

In this context, taking advantage of modern information technologies to improve data exchange and co-ordination between the partner institutions of the ICMDC is central to Slovenia's efforts in building an efficient information system. In co-operation with UNITAR, Slovenia has initiated a pilot project to facilitate the work of ICMDC members based on electronic networking which makes use of Internet-based communication and presentation tools. It is expected that the development of an Internet web-site would enable ICMDC partners to co-operate more effectively in the development of national programmes on chemicals management and safety by promoting access to sectoral databases. Similarly, the use of electronic mail could significantly expedite administrative issues, such as informing members about scheduled meetings and activities. Finally, the Internet should also facilitate a decentralized update of Slovenia's National Profile and promote its dissemination.

Egypt

Dr. Adham Ramadan, Egyptian Environmental Affairs Agency (EEAA), reported that industries are now required by law to apply for an operating permit from the agency. Through this permit system, companies must submit detailed reports regarding emissions to land, water, and air. The data collected through permit reporting requirements can subsequently be used within an information system. Important challenges in strengthening an information system in Egypt included achieving a balance between a top-down versus a bottom-up approach and between centralized and decentralized co-ordinating structures.

Tanzania

Dr. Enock Masanja, University of Dar Es Salaam, highlighted that as an agricultural country, Tanzania's main concern in the field of chemicals management relates to pesticides. In order for information on pesticides to be useful to target groups, he stressed that information products should be tailored to their specific needs. Previously overlooked target groups in this regard included farm workers and the general public. In order for information to be understandable to relevant audiences, it should not be of an overly technical nature. Other issues which should receive specific attention, included the mode of information delivery and the language used.

IC Infraconsult

Mr. Alan Pasche provided an outline of an evaluation methodology for selecting priority issues based on a simplified version of the Multi Criteria Decision Aid process. The evaluation procedure presented was developed to assist the Egyptian Environmental Affairs Agency in the identification of priorities to be addressed through its Hazardous Substances Information and Management System. As a first step, priority issues and problems are clearly articulated and their relative importance weighted using a defined set of criteria. The priority issues thereby identified then serve as a basis around which specific projects and sub-projects are designed. In a second step, negative and positive project impacts are evaluated and rated to select the final project.

United States of America

Dr. Brian Hirsch briefed the meeting on the Environmental Protection Agency's (EPA) efforts to utilize information technologies to communicate with a large number of people, as required, inter alia, by existing Right-to-Know legislation. Through the medium of the Internet, complex and integrated databases such as Envirofacts, the Facility Identification Initiative, and Toxic Release Inventories are now accessible from around the world. The Internet has become an integral component of the EPA's strategy in providing the public with access to chemicals information and its web-site receives more than one million visitors per day. It was also reported that information management investments account for 6-7% of EPA's annual budget.

Pesticides Action Network

Mr. Ronald Macfarlane emphasized the importance of strengthening collaboration between role players in order to build trust in a chemicals information system and its products. Developing public and community trust requires transparency in the decision-making process and the recognition of the public Right-to-Know about chemicals, their use, effects, and emissions. In developing a chemicals information system, the content, format, and the mode through which chemicals information is transmitted to the public and workers will need to be carefully studied as these factors will influence how the public will perceive information which is provided.

European Council of Chemical Industries (CEFIC)/Chemicals Manufacturers' Association (CMA)

On the role of industry, Dr. Sabine Dorf (CEFIC) and Ms. Karon Armstrong (CMA) elaborated on the various information-related activities undertaken in the context of industry product stewardship programmes. These include such diverse activities as voluntary reporting, adequate labelling, and training-the-trainers programmes. It was also emphasized that wide divergences in country labelling requirements was creating considerable impediments for industry to communicate chemicals information and that a common labelling system was necessary to facilitate adequate labelling at the national level.

International Programme on Chemical Safety/World Health Organization

The accent of Dr. Michael Ruse's presentation was on the potential role of poison control centres as a focal point for disseminating chemicals information at the country level. The main advantage of Poison Control Centres in this regard is that they are specifically established to disseminate information on poisonings and chemicals both to the professional community and the general public. IPCS has developed a number of databases available in CD-ROM and diskette versions to facilitate collection and use of chemicals information at the country level (e.g. INTOX and INCHEM). Although the databases have been distributed to country focal points, their availability is not always known among national institutions.

United Nations Environment Programme

Ms. Fatoumata Ouane spoke of UNEP Chemicals' role as an 'information stop-shop' on chemicals. A large amount of chemicals information is available in the form of databases (e.g. IRPTC legal file) and meta-databases and is disseminated through networks such as the Global Information Network on Chemical Safety (GINC). The information is presented on a chemical-by-chemical basis and aims to provide the user with current and comprehensive information to assess the hazards posed by specific chemicals. UNEP, jointly with FAO, also operates an information exchange procedure based on the Prior Informed Consent (PIC) provision to monitor the international trade in chemicals.

United Nations Institute for Training and Research

Based on experiences gained in the context of a UNITAR pilot project in Benin, Dr. Christophe Nuttall, highlighted the potential value of integrating chemicals information management within the overall framework of a country's environmental information system. He also suggested opportunities for using the Internet to enable the development of a decentralized information system. Particular advantages of an Internet-based communication system include widespread information dissemination, relative low cost, ease of updating, and compatibility of systems.

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Annex B: Workshop Agenda

Wednesday, 2 September 1998

- 9:00 Opening of Meeting: Introduction and Objectives, Mr Achim Halpaap, UNITAR
- Session I: Country and Expert Presentations
- 9:15 Establishing a National Information System for Chemicals Management: Perspectives and Experiences of a National Task Force in Indonesia, Dr Agus Wahudi, Ministry of Trade and Industry; Drs Thomphson Slanibar, Ministry of Health
- 9:45 Data Management and Information Systems: Perspectives and Experiences of a National Task Force in Ghana, Ms Angelina Bainiah, Custom, Excise and Preventive Service; Mr Frank Boakye Antwi, Environmental Protection Agency
- 10:15 Development of Toxicological and Emergency Response Information Systems in Argentina (Task Force 1); Strengthening Implementation of the Right-to-Know in Argentina (Task Force 2), Dr Ernesto de Titto, Ministry of Health and Social Action; Ing. Guillermo Zucal, ADELCO (Consumer Action)
- 10:45 - Coffee Break -
- 11:00 Strengthening Information Exchange in the Context of a National Action Programme in Slovenia, Ms Darja Bostjancic, Ministry of Health
- 11:30 Hazardous Substances Information and Management System in Egypt, Dr Adham Ramadan, Egyptian Environmental Affairs Agency (EEAA)
- 12:00 Making Effective Use of Chemicals Information Available at the Country Level: Perspectives and Experiences From Tanzania, Dr. Enock Masanja, University of Dar Es Salaam
- 12:30 - Lunch Break -
- Session I: Country and Expert Presentations (continued)
- 13:30 Setting Priorities for National Chemical Information Management, Mr. Alain Pasche
- 14:00 Lessons Learned from Chemical/Environmental Information/Networks in the United States, Dr. Brian Hirsch, US Environmental Protection Agency

- 14:30 Addressing the Information Needs of the Public, Consumers, Workers and Communities, Ronald Macfarlane, Pesticides Action Network
- 15:00 The Role of Industry in Providing Information for Chemicals Management and Safety, Dr. S. Dorf, CEFIC/Ms. K. Armstrong, 3M
- 15:45 - Coffee Break -
- 16:00 Facilitating Access, Collection and Use of Chemical Safety Information at the Country Level: Lessons Learned by IPCS/WHO, Dr Michael Ruse, WHO/IPCS
- 16:30 Experiences of UNEP Chemicals in Chemical Information Dissemination, Access and Exchange, Ms Fatou Ouane, UNEP Chemicals
- 17:00 Environmental Information System on the Internet: A Case Study from Benin, Christophe Nuttall, UNITAR
- 17:30 Closing of Day 1

Thursday, 3 September 1998

- 9:30 Opening
- Session 2: Key Themes for Strengthening National Information Networks/Systems for Chemicals Management: Roundtable Discussion
- 12:30 - Lunch Break -
- 14:00 Session 2 (continued)
- 18:00 Closing of Day 2

Friday, 4 September 1998

- 9:30 Opening
- 9:40 Session 3: Further Development of the Guidance Document on Strengthening National Information Systems for Integrated Chemicals Management
- 10:45 - Coffee Break -
- 11:00 Session 4: Review of Workshop Conclusions
- 13:00 Closing

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