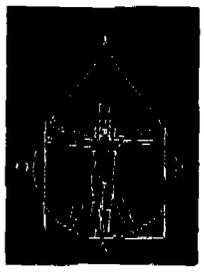
THE INTERNATIONAL SECRETARIAT FOR WATER
Non-Governmental Organizations in Interaction toward Water Supply and Sanitation

LE SECRÉTARIAT INTERNATIONAL DE L'EAU
Les Organisations Non Gouvernementales en interaction pour l'eau et l'assainissement

EL SECRETARIADO INTERNACIONAL DEL AGUA
Las Organizaciones No Gobernamentales en interaccion por el agua y su saneamiento



CENTRAL AND EASTERN EUROPE INTERNATIONAL SEMINAR

CIVIL SOCIETY AND ITS INVOLVEMENT IN LOOKING FOR SOLUTION TO DRINKING WATER, SANITATION, ENVIRONMENT AND QUALITY OF LIFE PROBLEMS

Organized by

THE WATER SUPPLY FOUNDATION, (WARSAW)
THE INTERNATIONAL SECRETARIAT FOR WATER (MONTREAL)
L'OFFICE INTERNATIONAL DE L'EAU, (PARIS)

In cooperation with :

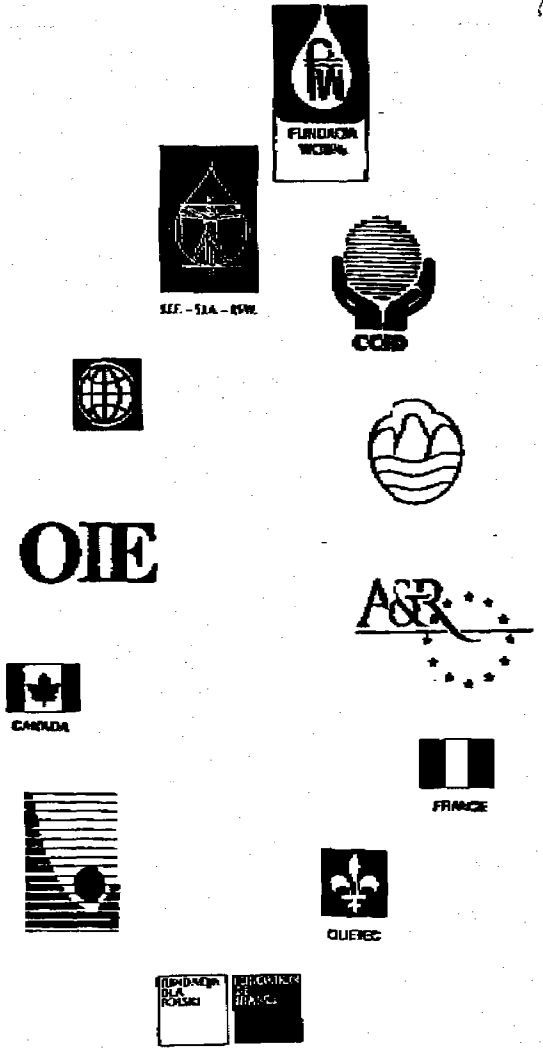
THE CANADIAN AND FRENCH GOVERNMENTS
LE RESEAU DES ASSOCIATIONS DE LA REGION NORD \ PAS-DE-CALAIS
UNDP
THE REGIONAL ENVIRONMENTAL CENTER, (BUDAPEST)
LE COMITE CATHOLIQUE CONTRE LA FAIM ET POUR LE DEVELOPMENT, (PARIS)
L'INSTITUT BELLEVILLE, (PARIS)
THE EUROPEAN NETWORK FOR ANIMATION AND RESEARCH IN ECONOMIC AND SOCIAL SCIENCES, (BRUSSELS)
FONDATION DE FRANCE - FONDATION DE POLOGNE

LOCATION OF SEMINAR : WARSAW (POLAND)

DATE : MAY 17 TO 19, 1993

48, rue Le Royer Ouest, Montréal, Québec, Canada H2Y 1W7
Téléphone : 514-849-4262 Télécopieur : 514-849-2822 Télex : 055-62171 (local 1772)

Central and East Europe Internat. Semina
Seminar details



Miastem Warszawa

Seminar location:
C.E.F.F.I.C.
UL SENATORSKA, 38
00-095, WARSAW
TEL: 48 (22) 26 62 71
FAX: 48 (2) 635 90 56

CENTRAL AND EASTERN EUROPE INTERNATIONAL SEMINAR

Civil Society and its Involvement in Looking for Solution on Drinking Water, Sanitation, Environment and Quality of Life

Warsaw, Poland
May 17 to 19, 1993

Organized by

The Water Supply Foundation, Warsaw

The International Secretariat for Water, Montreal

L'Office International de l'Eau, Paris

In cooperation with:

UNDP

The Canadian, French and Quebec Governments

The Regional Environmental Center, Budapest

The European Network for Animation and Research in Economics and Social Sciences, Brussels

Le Comité Catholique contre la Faim et pour le Développement, Paris

Fundacja dla Polski — Fondation de France

Batory Foundation, Warsaw

Extra-Muros — Nord-France

City of Warsaw

****

SUNDAY, MAY 16,

19:00 **Welcome meeting and registration**

Grand Hotel
Krucza St. 28
Warsaw
Tel.: (48-22) 294051

****

MONDAY, MAY 17

Observations and diagnosis

8:30 **Official opening**

9:30 **Ms Maria Stolzman:**
Water Supply Foundation: Its role in protecting the environment and developing community organizations.

10:30 **Break**

11:00 **Presentation of the problems in each country and identification of possible solutions by the participants of Eastern and Central Europe. (15 minutes per person)**

12:30 **Lunch**

13:30 **Cocktail offer by the City of Warsaw**

14:30 **Presentation of the problems in each country and identification of possible solutions by the participants of Eastern and Central Europe. (15 minutes per person)**

15:45 **Break**

16:15 **Continuation of presentation**

18:00 **End of the first day**

****

TUESDAY, MAY 18

Looking for solutions

8:30 Conference
Water problems in Eastern and Central Europe: contribution and participation of the associative sector to the solutions.

9:45 **Break**

10:15 **Action plans**
1st working session (workshop)

12:30 **Lunch**

For this part of the seminar, representatives of Polish NGO's will join the participants.

14:00 **Ms Lilia Ramos, Ms Starega-Piasek and Mr Gennady Alferenko**
The Civil society in Central and Eastern Europe: how to promote the rising and viability of the associative sector within this society?

15:30 **Topical workshops**

- Democracy: The source of good water management (Extra Muros — Nord-France);
- The operation of an NGO network;
- The setting up and organizational model of an NGO;
- The partnership between the associative and private sectors, one of the keys to sustainable development;
- The partnership between the associative and public sectors, one of the keys to sustainable development;
- Eco-volunteers: a new concept.

18:00 **Press conference and launching of the Drop of Hope.**

20:00 **Polski wieczór (Polish evening)**

****

WEDNESDAY, MAY 19

Action plans

8:30 **MM. Jean-François Donzier and Bernard Kaczmarek**
Decentralized approach to water management: the requirements of partnership.

9:45 **Break**

10:00 **Action plans**
2nd working session (workshops)

12:00 **Action plans summary and seminar follow-up**

13:00 **End of seminars**

13:30 **Cocktail offer by the French Embassy**

****

Chairperson: Ms Maria Stolzman
Co-chairperson: Mr Jean-François Donzier
Meeting chairperson: Mr Alexander H. Rotival
Coordinators: Mr Piotr Szczepanski (Varsovie)
Mr Alain Vanderveken (Montréal)
Consultant: Mr Gabriel Regallet
Workshop secretaries: to be nominated

For more informations, contact:

International Secretariat for Water
48, rue Le Royer Ouest
Montréal, Québec
H2Y 1W7
Tel.: (514) 849-4262
Fax: (514) 849-2822

Water Supply Foundation
Skwer Kard. Stefana Wyszynskiego 6
01-015 Warszawa, Poland
Tel: 386713, 384683 Fax: 389505

** Official languages: English, French and Russian **

1. Description of Project

The project will allow some 25 people from Central and Eastern Europe in partnership with 15 other people from Europe, North America and the South, to meet and share concerns, priorities and strategies on their regional development.

The project will enhance regional capacity for environment management and interactions between NGOs and local communities in the areas of drinking water, sanitation, environment and quality of life.

The project will also enhance collaboration between NGOs and local communities, and regional government agencies supported by the UNDP, in their effort to find solutions to water, sanitation and environment problems.

2. Reasons for a Preparatory Assistance Phase

In Central and Eastern Europe, there are people in local communities, churches and non-governmental organizations (NGOs) that are involved in the process of looking for solutions to drinking water, sanitation, environment and life quality problems. Most of them are isolated, have very few means and no access to international aid networks. The latter have often problems to set up relevant and genuine partnerships with NGOs and communities in this part of the world.

It is therefore necessary to create an interface that will facilitate the setting up of an action oriented network on water, sanitation and environment issues. The Eastern and Cental Europe International Seminar is such an interface that will be the starting point of many solidarities and of action plans.

By participating and supporting such an initiative, the UNDP will gain a better understanding of such complex issues, help define action priorities which fit the requirements of the civil society, and enhance regional capacity for environmental management among public, private and voluntary agencies.

3. Expected Results of Preparatory Assistance Phase

The purpose is to prepare and deliver an International Seminar to advance the formulation of action plans and capacity enhancement for managing drinking water, sanitation and related environment issues.

The international seminar to be financed during the PA phase will:

3.1 provide valuable information to, and interaction between the participants regarding problems, experiences, approaches and perspectives on the issues described above; the seminar will involve the formulation of future initiatives, suitable approaches and

partnerships within the regions, as well as relevant capacity and approaches from outside the regions, to be framed in further action plans.

3.2 provide the information required by UNDP to understand the complexity of issues, the requirements of regional actors and to help identify a Project Formulation Framework supporting future initiatives, partnerships and action in these thematic areas.

4. Organizers and Participants to the Seminar

The Seminar will be organized by The Water Supply Foundation (Warsaw), the International Secretariat for Water (ISW - Montreal), and l'Office International de l'Eau (Paris), and supported by the Regional Environmental Centre (Budapest), le Réseau des Associations de la Région Nord/Pas-de-Calais (France), le Comité Catholique Contre la Faim et Pour le Développement (Paris), l'Institut Belleville (Paris) and the European Network for Animation and Research in Economic and Social Sciences (Brussels). The French and Canadian governments and the UNDP have accepted to help fund it, and to consider future involvement in action plans.

The European Bank for Reconstruction and Development (London) has been approached to be a partner of this project.

There will be some 40 people from different activity areas. About twenty-five (25) of them are coming from the civil society, community groups, NGOs, universities, etc. The rest (15) represent local organizations (cities and regions), national organizations (governments and departments), international organizations (UNDP, WHO, The World Bank, etc.), private sector (water specialists), researchers, etc.

Most participants are familiar with local realities whether in rural areas or in small or mid-size cities. They come from the following countries: Albania, Byelorussia, Bulgaria, Estonia, Hungary, Lithuania, Latvia, Moldavia, Poland, Rumania, Russia, Czechoslovakia, Ukraine and different republics of former Yugoslavia.

Each participant to the seminar will either deliver a paper or make a presentation, or do both. He or she will also agree to get involved in the follow-up process.

5. Activities during Preparation Assistance Phase

5.1 The Seminar will be designed, planned, organized and implemented by the three lead organizations identified above, in consultation with UNDP and other supporting agencies.

5.2 No later than two months after the Seminar, a final report of the Seminar, prepared by a consultant and reviewed by the participants, will present the main feature and conclusions, along with the individual action plans, to all participants and supporting agencies.

5.3 Justification of the International Seminar

(i) A critical step in capacity-building

Both the Chapter 18 of Agenda 21 and the NGO Freshwater Treaty, adopted at the Rio conference call for participating roles of NGOs and social movements in the definition of freshwater policies as well as in the discussion and decision-making of water projects. The seminar will foster the building of an international capacity for strengthening conservation and sustainable management of water resources based on community needs.

(ii) The strengthening of an international partnership

The international partnership built between practitioners within and outside these regions will provide a unique opportunity for about 30 people to be actively involved in the preparation, the holding and the follow-up of this event. Results of such a process will be provided as an example of empowerment, capacity-building and international partnership in water supply and sanitation.

(iii) The potential and support for replication and/or scaling up

Valid approaches to sustainable development in water protection, conservation and management need to be identified, strengthened and supported for replication on a wider scale. This meeting could be linked to, and fit the concept of environmental volunteers set up by the UNDP, UNV and ISW in its project of Community-Based Initiatives for Water Supply and Sanitation. The participants invited to this seminar will play the role of facilitators by helping to provide critical training, technical information and communication support, extension of local knowledge and skills and serving as a vehicle for the interaction and exchange of volunteers.

5.4 This Seminar has been well planned and organized through two preparatory meetings, and an ISW visit in Warsaw. A task force met in Paris on September 15, 1992 and January 13, 1993. Its mandate was to define the agenda content, to choose the definitive topics, to identify the resource people and participants, to propose the framework of the Seminar and to identify the entities or organizations that would be involved in the preparation work. The members of this task force are: Ms. Martine Kuebler-Mamlouk (UNDP), Ms. Maria Stolzman/Mr. Piotr Szczepanksi (Water Supply Foundation), Mr. Donzier/Mr. Delavalle/Mr. Lelourd (Office international de l'eau), Mr. Kindler (Regional Environmental Centre), Mr. Marc Berger(CCFD), Mr. Bernard Thoreau (Institut Belleville), Mr. Georges Abousada (European Network for Animation and Research on Economic and Social Sciences), Mr. André Colin (Réseau des Associations de la région du Nord/Pas-de-Calais), Mr. Alexander Rotival (Consultant, Geneva) and Mr. Raymond Jost/Mr. Vanderveken (International Secretariat for Water).

It was agreed that until the Seminar is held, coordination will be ensured by Warsaw, Paris and Montreal-based organizations.

5.5 The Seminar will aim to:

i. examine and share the capacities and problems related to drinking water, sanitation, and other environment issues in Eastern and Central Europe;

ii. draw the lessons learnt so far and assess the gaps in participants' experience, on community involvement in decision-making processes related to water and sanitation, including the relationships with other social actors (local/national governments; landowners; professionals; aid agencies and NGOs, etc.)

iii. assess the means/tools and work out models and ways for involving communities in such decision-making processes;

iv. identify issues, processes and timelines allowing to develop action plans for capacity and partnership building on the issues identified above;

v. identify potential foreign assistance and donors for the Regions' capacity building.

5.6 Duration and Date of the Seminar

Three days in May 1993 (May 17, 18, 19)

5.7 Location of Seminar

Warsaw, Poland

5.8 Seminar Agenda Items

- Drinking water and sanitation as key elements to increase the level of life quality. Discussion of problems, causes and solutions/approaches within the regions.

- Civil society: its role, function and legitimacy. The place of NGOs and grassroots groups in the development of society's projects and decision-making related to water, sanitation and environment-related issues.

- Cooperation and partnership between community projects, local and national authorities, private companies, universities, training centres, and international agencies on the issues identified.

- International cooperation and exchanges (East-West, East-South).

- Action plans for capacity and partnership building on water, sanitation and other environment-related issues.

- Foreign assistance and funding of further action plans.

6. Budget

The overall cost for preparing, implementing and following up this international seminar is CAN$ 75,000. As a common endeavour of seven partners, it will be financed by the UNDP-Division for Europe and the CIS ($17,000), the French and Canadian governments ($24,000) and several NGOs and networks ($34,000). The expenditures estimates and sources of funding are detailed in an attached sheet.

ANNEX 1

Budget (Dollars Canadiens)

Expenditures

1.	**Seminar's Planning**	
	- Preparatory meetings (Varsovie, Paris, New York, Washington)	9,000
	- Travel and communication in Eastern\Central Europe	6,000
	Sub total	15,000
2.	**International Seminar**	
	- Transportation and accomodations (25 X 900)	22,500
	- On-site organization : room, transport, communication s, reception	7,500
	- Interpretation	6,000
	- Opening activities of the Seminar and participation of the Poland representatives of NGOs	5,000
	- Lauching of the "Drop of Hope", media event	3,000
	Sub total	44,000
3.	**Seminar's Follow-up**	
	- Consultant services on report and dissemination	8,000
	- Action plans : preparation, communication, transport	7,500
	Sub total	15,500
	Total - direct expenses	74,500
	Administration cost (7.5%)	5,500
	TOTAL	80,000

Funding : Proposed Sources

- UNDP-Division for Europe and C.I.S.	17,000
- Frensh Goverment	12,000
- Canadian Government	12,000
- Water Supply Foundation (The Regional Environmental Center (Budapest)	10,000
- European Network for Animation and Research	10,000
- Comité Catholique Contre la Faim et	
- Réseau des Associations du Nord\Pas-de-Calais	14,000
- Fondation de France - Fondation de Pologne	5,000
TOTAL	80,000

Activities and Outcomes of the International Workshop (Warsaw)

1. Presentation and discussion of approaches and experiences related to community involvement into decision-making processes on water and sanitation and environment issues, and problems of quality of life.

Outcomes:

- Lessons drawn from these experiences, identification of gaps and needs for better community involvement, replication and scaling up: education/training; resource mobilization and leadership building; communications; planning; lobby; monitoring and maintenance.

- Identification of models of sustainable community-based water and sanitation systems integrating decision-making processes and working relationships with the other social actors and stakeholders (twinning with private and public decision-makers).

2. Identification of an international partnership of community-based initiatives for water supply and sanitation.

The workshop will set up a plan of action along with the needs and timelines for future collaboration:

(i) to use improved and culturally sensitive knowledge, skills and organizational methods to solve locally-identified water, sanitation, environment problems.

(ii) to foster exchange of experiences at the community level, within the region, and with western and southern organizations.

(iii) to mobilize resources for operational activities, and to transfer skills and technologies to a large number of community members and leaders involved in water and sanitation problem-solving through community relevant approaches, methodologies and locally-based resource centres.

(iv) to disseminate the lessons learnt, including replication of similar projects in neighbouring and other communities, and in other countries of the regions involved in the Seminar.

(v) to share information with, and transfer techniques to, other NGOs belonging to ISW, water-related NGOs, and national and international agencies dealing with water and sanitation, through the strengthening of a coordination unit

(vi) to set up working relationships with development aid agencies and donors for building a regional capacity for sustainable development.

Outcomes:

- Strengthened self-reliance of local communities and the NGOs that serve them, based on their self-generated resources and skills and relationships developed with other levels and authorities. Greater momentum to the process of self-sufficiency and sustainability.

- Strengthened local community-based organizations and NGOs involved in water and sanitation-related issues, able to act as resource centres for communities in designing and implementing community-based, sustainable, integrated water-related programmes.

- Building of an international partnership on water, sanitation and environment issues.

WORKING SESSION ON ACTION PLAN

Suggested issues to be discussed

1. Strengthening the relationship between NGOs and citizen/local groups, public agencies, private sector and donors.

    * Outreach, awareness, education
    * Mobilization around local issues
    * Providing services with perceived outcomes
    * Approach to collaboration with public, private sector

how

2. Improving the capacity of NGOs to effect change for, and improve quality of life.

    * Transfer of technical skills
    * Improving social skills / approaches to deal with civil society
    * Setting up partnership with decision-makers

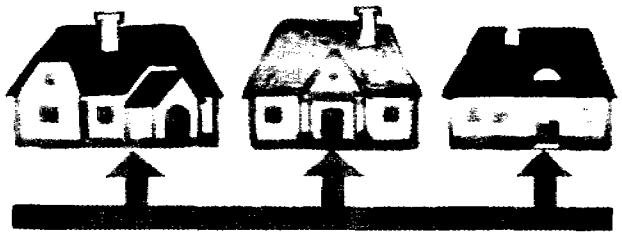
3. Strengthening the relationship between NGOs (East - West - South)

    * Sharing information and experiences; mutual support
    * Training
    * Facilitating access to resources

4. Recommendation to the plenary

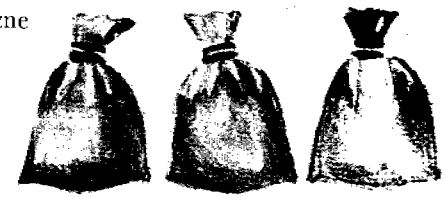
sowała budowy 47 kanalizacji i oczyszczalni ścieków od 1989 roku. Od początku działalności z pomocy Fundacji skorzystało 94.039 gospodarstw w ponad 1.500 wsiach.

Ilość gospodarstw podłączonych do głębinowych ujęć wody



1988	3776
1989	17033
1990	28801
1991	21630
1992	22808
Łącznie	94039

Dotacje zagraniczne (w milionach zł.)



1991 ▶ 158184

Informacje

Gdzie można je uzyskać?

W siedzibie Fundacji pod adresem:

FUNDACJA WSPOMAGAJĄCA ZAOPATRZENIE WSI W WODĘ

Skwer Kard. S. Wyszyńskiego 6
01-015 Warszawa
telefon 38-67-13 lub 38-46-83
tel./fax 38-95-05, tlx. 817055 KKR

Dotacje

Jak można wspomóc Fundację?

Przysyłając pieniądze lub czek na powyższy adres, bądź transferując fundusze na konto bankowe Fundacji:

numer konta 612997-500034-2711-1
Bank Inicjatyw
Społeczno-Ekonomicznych O/w W-wie
ul. Senatorska 38, 00-950 Warszawa

Nie wahaj się –
wspomożesz dobrą sprawę!

Fundacja Wspomagająca Zaopatrzenie Wsi w Wodę

Fundacja Wodna
Co to za Fundacja?

Jest to Fundacja powołana w dniu 2 grudnia 1987 roku przez Prymasa Polski Józefa Kardynała Glempa jako pierwsza tego typu prywatna fundacja w krajach Europy Wschodniej.

Cele Fundacji
Jakie one są?

Wspomaganie inwestycji związanych z zaopatrzeniem wsi w wodę pitną oraz z oczyszczaniem ścieków w regionach o znacznym deficycie wody i braku systemu oczyszczania ścieków.

Zaopatrzenie w wodę pitną
Czy rzeczywiście jest takie złe?

Niestety, tak. Tylko 35 procent gospodarstw wiejskich w Polsce jest podłączonych do sieci wodociągowych dostarczających wodę pitną z ujęć głębinowych. Obecnie co 5 wieś cierpi na dotkliwy brak wody będąc zmuszona dowozić wodę pitną z odległych i wielokrotnie niepewnych źródeł.

Źródła finansowania
Skąd się wzięły?

Na środki pieniężne Fundacji składają się dotacje z całego niemal świata. Pierwszym donatorem, dzięki któremu Fundacja mogła rozpocząć działalność był Kongres Amerykański, który przekazał 10 milionów dolarów za pośrednictwem Agencji ds Rozwoju Międzynarodowego (USAID) i Katolickiego Biura Pomocy (CRS).
Fundację wspomogli ponadto: Polsko-Amerykańska Wspólna Komisja ds Pomocy Humanitarnej, rządy Republiki Federalnej Niemiec, Kanady, Francji, Islandii, Włoch, Norwegii i Szwajcarii jak również Europejski Fundusz Rozwoju Wsi Polskiej, Secours Catholique z Francji oraz Fundacja Forda.

Darowizny dla Fundacji
Czy są one znaczne?

Tak. Tylko w samym roku 1991 darowizny przekroczyły 158 miliardów złotych, a na rok bieżący Fundacja przewiduje kwotę tego samego rzędu lub wyższą.

Zaopatrzenie wsi w wodę
Czy jest to jedyny cel Fundacji?

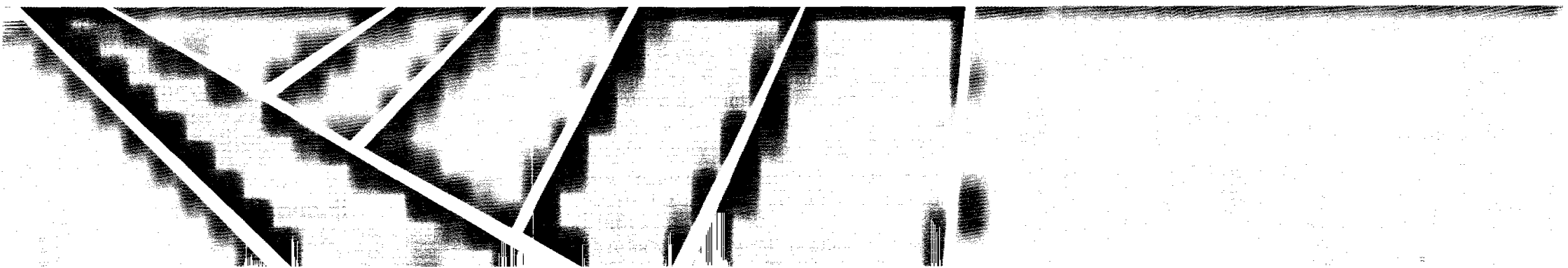
Nie. Fundacja wspiera również wszelkie przedsięwzięcia związane z ochroną środowiska, a szczególnie z oczyszczaniem i zagospodarowywaniem ścieków. Ponadto organizuje szkolenia ekologiczne jak również działa na rzecz rozwoju lokalnych społecznych struktur organizacyjnych.

Pomoc Fundacji
Na czym ona polega?

Na przyznawaniu tanich kredytów. Fundacja udziela pomocy w kwocie nie przekraczającej połowy kosztów inwestycji refundując poniesione wydatki do wysokości 80% udzielonego kredytu. Pozostałe 20% jest udostępnione kredytobiorcy po zakończeniu budowy w terminie i w zakresie ustalonym z Fundacją. Szczegółowe informacje o kredytowaniu można otrzymać w biurze Fundacji.

Rezultaty
Jakie są osiągnięcia Fundacji?

Proszę ocenić samemu. Fundacja pomogła doprowadzić wodę pitną do 22.808 gospodarstw w samym roku 1992 oraz dofinan-



■ RAYMOND JOST ET
LAURENT CHABERT D'HIÈRES

LE SECRÉTARIAT INTERNATIONAL DE L'EAU
UN APPUI AUX ONG

Personne n'a la solution-miracle dans le domaine de l'eau. La concertation est plus que jamais indispensable.

En ces temps de questionnement, de redéfinition et de recherche pour de nouvelles pratiques de développement international, les ONG (organisations non gouvernementales) sont actuellement confrontées aux mêmes réalités que celles que rencontrent leurs partenaires : mutations politiques, redéfinition des modèles économiques, état environnemental de la planète, confrontations Nord-Sud, Sud-Sud, Est-Ouest, etc. Ajoutons à cela l'écart grandissant entre les riches et les pauvres ainsi que les revendications concernant la redistribution des pouvoirs entre les différents paliers de décision (local, régional, national et international).

Raymond Jost est le Secrétaire général du Secrétariat International de l'eau (SIE). En collaboration avec des partenaires de tous les horizons, il a initié le processus de réflexion et d'action qui devait mener à la création du SIE.

Laurent Chabert d'Hières assume la fonction de délégué général de l'Association Eau-Vive à Paris. Homme de terrain, son expérience s'étend à toute l'Afrique sahélienne ainsi qu'en Ouganda où il a séjourné deux ans.

Bénéficiant de préjugés favorables — souples dans leur fonctionnement, plus économiques, novatrices dans leurs idées et leurs programmes, ouvertes en matière de partenariat, plus proches du terrain et donc des citoyens, et imaginatives dans leurs campagnes de communication — les ONG ont le devoir non seulement de participer aux changements en cours mais aussi de les provoquer.

C'est dans cet esprit qu'est née l'idée de créer le Secrétariat international de l'eau (SIE) à la suite du Forum international de Montréal : «les ONG en interaction» de juin 1990 qui s'est tenu sur le thème «S.O.S., l'eau, c'est la vie.» Le résultat de ce forum a été l'adoption de la Charte de Montréal sur l'eau potable et l'assainissement. Cette charte est par la suite devenue un point de ralliement à travers les continents et ses principes ont été endossés par les participants qui ont rédigé, dans le cadre du Forum international des ONG (*Global Forum*) de Rio, le traité concernant l'eau douce.

La nature du Secrétariat international de l'eau

Le SIE est un club. À la différence des réseaux existants, il n'est pas d'abord préoccupé par sa légitimité et sa représentativité, car ce n'est pas sa vocation d'être le porte-parole dûment mandaté des ONG dans le domaine de l'eau et de l'assainissement. Il mise avant tout sur la liberté d'action, l'énergie et l'imagination des personnes qui forment son conseil d'administration — elles-mêmes actives dans des réseaux d'ONG ou des projets sur le terrain — ainsi que de ses membres associés. La prise de décisions y est donc plus rapide et la capacité d'adaptation aux opportunités plus grande.

Le SIE est un club ouvert. Conçu comme un lieu de rencontre entre la sensibilité ONG et tous les autres secteurs de l'aide au développement, il comptera bientôt des membres d'instituts professionnels sur l'eau, des agents de l'aide multilatérale et bilatérale, des chercheurs, des industriels, bref tous ceux qui ont nécessairement un rôle à jouer dans tout programme concernant l'eau et l'assainissement. Le SIE part du principe que personne n'a aujourd'hui la «solution-miracle» aux problèmes de la maîtrise de l'eau dans le monde et que toute solution durable passera par la concertation entre les secteurs qui s'ignorent, la mise en commun des expériences acquises, un plus juste partage des ressources financières disponibles et une harmonisation entre tous les acteurs impliqués. Parmi ces acteurs, il en est qui sont trop ignorés : il s'agit des groupements de base dans les pays du Sud (ceux que l'on appelle encore trop souvent les «bénéficiaires» de l'aide), des ONG locales d'appui aux projets qui voudraient bien employer les milliers de jeunes techniciens formés en hydraulique mais chômeurs, des agents des pays concernés, trop souvent décriés et rarement encouragés dans leur tâche difficile. Pour le SIE, il faut accentuer la collaboration sur le plan horizontal et vertical entre les acteurs du secteur de l'eau et de l'assainissement et ceux de l'environnement.

Le SIE est un club ouvert ayant peu d'argent. Ce n'est pas son rôle de chercher des fonds pour lancer lui-même des programmes sur le terrain. Il met plutôt en relation les bailleurs de fonds et les membres des réseaux qui le constituent, ou propose à tel ou tel membre de participer à un programme initié par une agence multilatérale. Ainsi, la responsabilité et le financement des programmes reste au niveau local ou national. N'étant pas source de financement, le SIE ne devient pas un lieu de convoitise ou de rapports de forces comme tant d'autres structures internationales que les ONG rejoignent dans l'espoir d'y trouver des fonds à court terme. Ici, chaque ONG membre est renvoyée à ses propres responsabilités et initiatives qui, elles, pourront faire l'objet d'une promotion de la part du SIE. Voilà pour la forme.

Faire connaître l'expérience des ONG

Quant au fond, le SIE a évidemment pour ambition de faire connaître 30 ans d'expérience des ONG, 30 ans de succès et d'échecs, pour que cette fin de siècle voit enfin une amélioration qualitative et quantitative notable pour les millions d'êtres humains qui vivent encore sans eau. Et loin de se cacher derrière des déclarations de bonnes intentions, les membres du SIE proposent des changements radicaux dans la gestion des programmes d'eau et d'assainissement.

Ils préconisent d'abord la coopération systématique avec le tissu économique local : tout projet hydraulique doit créer des emplois locaux, faire travailler les entreprises locales, donner toutes leurs chances aux compétences disponibles sur place. Pour l'essentiel, les solutions aux problèmes du Sud sont dans le Sud, tout

au moins en matière d'eau. Trop de place est faite aux transferts technologiques, aux transferts de compétences venant du Nord alors que la capacité de mobilisation et le savoir-faire locaux sont ignorés.

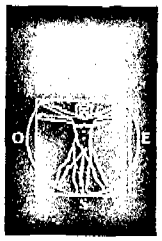
Le SIE remet également en cause le fonctionnement «par projets» : les acteurs au Sud veulent une approche globale du développement dont le financement n'est plus lié obligatoirement au sacro-saint projet. Il est temps de faire plus de place au financement des acteurs eux-mêmes au Sud : aider tel ou tel mouvement paysan pour lui-même, parce qu'il est un facteur de démocratie, de développement, de changement de mentalités, pour ensuite l'aider financièrement à lancer ses propres programmes d'hydraulique. Il est temps aussi de changer au Nord les mécanismes commerciaux et financiers qui vouent en fait ces fameux projets à l'échec. À quoi sert de financer tel ou tel programme hydro-agricole au Sahel et d'exiger sa rentabilité si on refuse d'acheter à plus juste prix sa production fruitière? À cette approche par projets, il faut substituer une approche par partenaires : le développement est fait pour les hommes et par les hommes, c'est avec eux qu'il faut travailler.

Le SIE croit dans la nécessité de parler un langage simple aux opinions publiques. Des messages universels et mobilisateurs pour le Nord et le Sud confondus : «l'eau, c'est possible», «l'eau est à tous», «l'eau, ça coûte», etc., de façon à ce que chaque citoyen se sente plus responsable dans son propre pays mais aussi sur la planète. Des messages plus particuliers parce que le problème ne se pose pas dans les mêmes termes selon que l'on a l'eau à profusion à son domicile ou qu'il faille creuser des mètres à mains nues pour obtenir une eau rare et polluée. Dans les deux cas, le citoyen, par son action individuelle et collective, est seul à même de faire pression sur les planificateurs et les décideurs pour une meilleure gestion des ressources en eau.

L'eau est autant l'affaire des citoyens que des techniciens

On doit décentraliser les ressources financières disponibles afin que les acteurs locaux au Sud puissent avoir plus librement accès à ces fonds. Dans ce domaine, il reste beaucoup à innover pour trouver ou améliorer des formules de financement plus souples et plus efficaces, y compris des modes de financement locaux (crédits coopératifs, banques, secteur industriel local...) qui permettent au partenaire du Sud de ne plus se sentir ni assisté ni perpétuellement demandeur. Trop de bailleurs de fonds ignorent la farouche détermination des partenaires du Sud à devenir indépendants sur le plan financier et mésestiment leur capacité à générer des ressources endogènes, pour peu que les mécanismes de l'aide s'adaptent un peu mieux à leurs besoins.

À Rio, une Goutte de l'Espoir en forme de montgolfière a fait quelques ronds dans l'air et survolé les multiples rencontres ONG ou bilatérales. Pendant deux ans, elle ira porter un peu d'espoir et beaucoup de convictions dans des pays du Nord et du Sud, fragile témoignage d'une solidarité plus que jamais nécessaire. Elle servira d'appui médiatique aux ONG qui pourront alors mieux se faire connaître dans leur propre pays et auprès des agences internationales. À elles de dire qu'elles peuvent faire mieux. À elles de le prouver. ■



RÉSUMÉ

La création du Secrétariat international de l'eau (SIE) est venue après la tenue du Forum international : «les ONG en interaction», à Montréal en juin 1990, à la suite duquel a été adoptée la Charte de Montréal sur l'eau potable et l'assainissement.

Le SIE a été conçu comme un lieu de rencontre entre les ONG et les autres secteurs de l'aide au développement. Club ouvert dont le rôle n'est pas uniquement d'être le porte-parole des ONG dans le domaine de l'eau et de l'assainissement, il met en relation les bailleurs de fonds et les membres des réseaux qui le constituent sans lancer lui-même des programmes sur le terrain.

Le SIE veut faire connaître les 30 ans d'expérience des ONG et propose des changements radicaux dans la gestion des programmes d'eau. Préconisant d'abord la coopération systématique avec le tissu économique local, le Secrétariat remet en cause le fonctionnement «par projets» et croit qu'il faut faire de plus en plus de place aux acteurs du Sud dans la question du financement. On néglige trop souvent la farouche détermination des partenaires du Sud à devenir indépendants financièrement et on mésestime leur capacité à générer des ressources endogènes.

Enfin, il est nécessaire de parler un langage simple aux opinions publiques. Grâce à des messages mobilisateurs et universels, chaque citoyen doit être sensibilisé et se sentir plus responsable. Les ONG ont déjà fait beaucoup pour le changement; elles doivent prouver qu'elles peuvent faire encore mieux.

SUMMARY

The International Water Secretariat (IWS) was created in the wake of the World Forum of Non-Government Organizations (NGOs), held in Montreal in June 1990, where the Montreal Charter on Drinking Water and Sanitation was adopted.

The IWS was designed as a forum for NGOs and other development aid sectors. As an open club, the IWS's mission is not to be a mouthpiece for the NGOs in the area of water and sanitation, but to provide opportunities for investors and the members of its networks to meet, without organizing field programs itself.

The IWS wants to make known the NGOs' 30 years of experience and is proposing drastic changes to water-program management. Having first advocated co-operation with local economies, the Secretariat is questioning management by project, and believes more room should be made for players from the South in the area of financing. The fierce determination of Southern partners to become financially independent is too often overlooked and their ability to generate resources underestimated.

Finally, there is a need to use simple language to address public opinion. Each citizen should be made aware and made to feel responsible through the use of motivating and universal messages. NGOs have already done much to advance change; the time has come for them to prove that they can go even further.

CHARTE DE MONTRÉAL

sur l'eau potable et l'assainissement adoptée dans le cadre
du FORUM INTERNATIONAL DE MONTRÉAL:
les Organisations Non-Gouvernementales en Interaction.

THE MONTREAL CHARTER

on Drinking Water and Sanitation adopted at the
MONTREAL INTERNATIONAL FORUM:
NGO's Working Together.

CHARTE DE MONTRÉAL

sobre el agua potable y su saneamiento, adoptada en el
FORO INTERNACIONAL DE MONTRÉAL:
las Organizaciones No Gubernamentales en Interaccion.

En septembre prochain, à New Delhi, se dérouleront les travaux de clôture de la décennie internationale de l'eau potable et de l'assainissement desquels se dégageront les actions à entreprendre d'ici la fin de l'an 2000.

La communauté internationale des ONG d'éducation et d'aide au développement doit contribuer à cette réflexion et faire valoir ses points de vue.

Voilà pourquoi OXFAM-Québec et ses partenaires ont organisé le FORUM INTERNATIONAL DE MONTRÉAL: LES ONG EN INTERACTION les 18, 19 et 20 juin derniers. Y ont participé une centaine de personnes représentant des organisations non gouvernementales (ONG) d'Amérique Latine, d'Asie, d'Afrique, d'Europe et d'Amérique du Nord; des organismes multilatéraux et bilatéraux et des spécialistes de l'eau.

Ce Forum visait la formulation et l'adoption *d'une charte* que nous sommes heureux de vous présenter et dont le contenu est celui qui suit. Que cette charte soit diffusée le plus largement possible est notre souhait le plus vif.

Merci de votre attention et collaboration.

The closing session of the International Drinking Water Supply and Sanitation Decade will be held next September in New Delhi. Participants at the session will be recommending the courses of action that should be given priority until the end of the century.

The international community of NGO Education and Development Assistance groups must contribute to this process and put forward its viewpoints.

This is why OXFAM-Québec and its partners organized the MONTREAL INTERNATIONAL FORUM: NGOs WORKING TOGETHER, on June 18, 19 and 20, 1990. A hundred or so people representing non-governmental organizations (NGOs) from Latin America, Asia, Africa, Europe and North America, multilateral and bilateral organizations, as well as water specialists participated in this Forum.

The objective of this Forum was to draw up and adopt *a charter* that we are pleased to present herewith. We sincerely hope that this charter will be distributed as widely as possible.

Thank you for your cooperation.

El próximo més de Septiembre, en Nueva Dehli, se celebrarán los trabajos de clausura del decenio internacional del Aqua potable y de su Saneamiento, de donde saldrán las acciones a realizar hasta el año 2000.

La comunidad internacional de los ONG de educación y de ayuda al desarrollo debe colaborar en dicha reflexión y defender sus puntos de vista.

Con este motivo, OXFAM-Québec y los demás ONG participantes han organizado el FORO INTERNACIONAL DE MONTREAL: LOS ONG EN INTERACCION, los dias 18, 19 y 20 de Junio pasado. Un centenar de personas han participado al Forum, representando las organizaciones no gubernamentales (ONG) de América latina, de Asia, de Africa, de Europa y de América del Norte. También había representantes de organismos multilaterales y bilaterales así como especialistas del Agua.

El Foro tenia como finalidad la formulación de una «Charte» (Declaración de principios) que actualmente les presentamos.

Deseamos que esta «Charte» (Declaración de principios) sea conocida y difundida de la forma màs amplia posible.

Gracias por su atención y colaboración.

Tim Brodhead
Président du FORUM
et Directeur Général du C.C.C.I.

Tim Broadhead
Forum Chairman
Executive Director C.C.I.C.

Tim Brodhead
Presidente del Foro
y Director general de CCCI

Gaston Truchon
Directeur Général
OXFAM-Québec

Gaston Truchon
Executive Director
OXFAM-Québec

Gaston Truchon
Director general
OXFAM-Québec

Charte de Montréal

Sur l'eau potable et l'assainissement

Déclaration :

L'accès à l'eau étant une condition de survie, nous affirmons que toute personne a le droit d'avoir accès à l'eau en quantité suffisante, afin d'assurer ses besoins essentiels. Par conséquent, priorité doit être donnée au milliard et demi de personnes qui n'ont pas encore accès à l'eau potable.

Le droit d'accès à l'eau et à l'assainissement est indissociable des autres droits de la personne. Il ne peut faire l'objet d'aucune discrimination et implique un respect par tous. Il s'agit de s'assurer que la gestion et l'approvisionnement en eau soient faits de façon équitable et efficace, au moyen de systèmes pérennes, et de manière à renforcer l'autonomie des populations concernées.

L'accès à l'eau pour tous exige des efforts visant la préservation, en termes de quantité et de qualité, de cette ressource vitale de notre planète. Cela concerne tous les pays sans exception, tous les milieux, tous les secteurs allant de l'agriculture à l'industrie, et tous les niveaux allant de la gestion individuelle et communautaire à la gestion nationale et internationale.

Montreal Charter

On Drinking Water Supply and Sanitation

Declaration :

Given that access to water is a condition of survival, we affirm that all persons have the right to sufficient supplies of water to meet their essential needs. Consequently, priority must be given to the billion and a half people who do not have access to drinking water.

The right to drinking water and sanitation cannot be dissociated from other human rights. It cannot be subject to discrimination and implies a respect from everyone. We must ensure that water supply and sanitation are managed equitably and efficiently, using durable systems, and in such a way as to strengthen the autonomy of the populations concerned.

Ensuring water supply for everyone demands special efforts for the preservation of this vital resource on our planet, in terms of quantity and quality. This responsibility concerns all countries without exception, all milieux, all sectors from agriculture to industry, and all levels from individual and community to national and international.

« Charte » de Montréal

Sobre el agua potable y su saneamiento

Declaración :

Siendo el acceso al agua una condición de sobreviviencia, nosotros afirmamos que toda persona tiene derecho al agua en cantidad suficiente para poder responder a sus necesidades vitales. Por lo tanto, la prioridad debe darse al millar y medio de personas que todavía no tienen acceso al agua potable.

El derecho al agua y a su saneamiento es inseparable de los otros derechos de la persona. No puede ser el objeto de cualquier discriminación e implica un respeto por todos. Hay que asegurar que la gestión y el aprovisionamiento del agua sean realizados de manera justa y eficaz, por medio de sistemas perdurables que fortalezcan la autonomía de los pueblos afectados.

El acceso al agua para todos exige esfuerzos para preservar cualitativa y cuantitativamente este recurso vital de nuestro planeta. Este esfuerzo a realizar concierne a todos los países sin excepción, a todos los medios, a todos los sectores, desde la agricultura hasta la industria, y a todos los niveles, desde la utilización personal y comunitaria hasta la administración nacional e internacional.

Principes guidant notre action :

1. L'accès à l'eau et à l'assainissement est d'abord une question politique.

Aujourd'hui, le non-respect de ce droit pour tous est le reflet, au-delà des disparités géographiques, des inégalités de répartition du pouvoir social et économique, ce qui exige une solidarité internationale soutenue afin de faire respecter ce droit essentiel. À ce niveau, nous tenons à souligner la nécessité :

- de reconnaître que l'accès à l'eau pour tous est compromis par des modèles de développement qui gaspillent et polluent les ressources limitées de la planète, ce qui appelle une réforme des modes de développement économique dominants ;
- d'appuyer les revendications des populations vis-à-vis de l'État en favorisant l'émergence et l'appui à des organisations démocratiques, tant en milieu rural qu'urbain et tout particulièrement dans les bidonvilles, où les besoins essentiels sont cruellement ignorés ;
- de dénoncer et de s'opposer au contrôle de l'accès à l'eau et à l'assainissement comme moyen de pression sur les populations victimes de guerre où d'occupation militaire ;
- de mettre sur pied des réseaux permanents au Sud comme au Nord, regroupant des ONG de développement ainsi que des groupes environnementaux et de défense des droits de la personne, qui se chargeront de susciter une conscience globale du problème de l'eau, de veiller à l'augmentation et au partage équitable des fonds alloués à ce secteur, et de faire les pressions nécessaires en vue de préserver la qualité et l'équité de l'accès à l'eau et à l'assainissement.

Principles guiding our actions :

1. Access to drinking water and sanitation is, above all, a political issue.

Today, the lack of respect for all of this right reflects, beyond geographical disparities, the inequalities in the distribution of social and economic power, which therefore necessitates sustained international solidarity to ensure that this essential right is respected. In this context, we want to underline the need:

- to recognize that access to water for all is jeopardized by actual development models which waste and spoil the limited resources of the planet, thus calling for a reform of the dominant economic development models;
- to support the population's demands towards their government by promoting the emergence and providing support to democratic organizations, both in rural and urban centers, particularly in slum areas where basic needs are cruelly ignored;
- to denounce and oppose the resort to control over water supply and sanitation as a pressure tool over populations who are victims of war or military occupation;
- to set up, both in the South and in the North, permanent networks joining non-governmental development organizations as well as environmental and human rights groups, who would promote global awareness of the water problem, ensure the increase and equitable distribution of funds allocated to this sector, and resort to the necessary pressure to preserve the quality and equity of access to water and sanitation.

Principios básicos de nuestra accion :

1. El acceso al agua y a su saneamiento es, sobre todo, un problema político.

El no respeto del derecho al agua para todos es, hoy en día, la manifestación de las desigualdades en la repartición del poder social y económico, independientemente de las diferencias geograficas, y exige de todos una solidaridad internacional constante para poder hacer respetar este derecho esencial. Por lo tanto, insistimos en afirmar la necesidad :

- de reconocer que el acceso al agua para todos está amenazado por los modelos de desarrollo que malgastan y contaminan los limitados recursos de la planeta. Por lo tanto, se exige una reforma en los modos vigentes del desarrollo económico;
- de apoyar las reivindicaciones de los pueblos frente al Estado, favoreciendo la creación y el apoyo de las organizaciones democráticas, tanto en las zonas rurales como urbanas, sobre todo en los suburbios y villas miseria, donde las necesidades esenciales son cruelmente olvidadas;
- de denunciar y oponerse al control del acceso al agua y a su saneamiento, como medio de presión sobre los pueblos victimas de guerra o de ocupación militar;
- de establecer asociaciones permanentes que reunan los ONG de desarrollo, tanto del Sur como del Norte, así como asociaciones de protección del medio ambiente y de defensa de los derechos de la persona que tengan como objetivo el suscitar una concienca mundial sobre el problema del agua, de vigilar sobre la distribución y el aumento justo de los fondos destinados a este sector y de presionar los responsables para obtener la calidad y la justa distribución del acceso al agua y a su saneamiento.

Principes guidant notre action : (suite)

2. Concevoir toute action dans ce domaine en appui aux populations concernées.

Partant du constat que l'échec des modèles de développement est en bonne partie imputable au fait que les populations, et tout particulièrement les femmes, ont été tenues à l'écart de l'orientation et des décisions importantes en ce qui concerne le processus de développement, il s'agit dans le domaine de l'eau plus que dans tout autre :

- **de veiller à ce qu'aucune décision importante touchant l'approvisionnement et la gestion de l'eau ne soit prise sans la participation, à travers des instances de concertation, des populations concernées et principalement des femmes, qui sont les premières responsables de l'approvisionnement en eau, de l'hygiène et de la santé de la famille ;**
- **de renforcer le pouvoir des communautés de base, et particulièrement des femmes, dans leur capacité de maîtriser la conception et la réalisation des projets d'eau potable et d'assainissement, et de gérer elles-mêmes les installations à moyen et long termes ;**
- **de repenser le partenariat entre ONG du Sud et du Nord, dans lequel les ONG du Sud seraient les véritables initiateurs du développement dans leur milieu, tout en maintenant des liens étroits avec les ONG du Nord.**

Principles guiding our actions : (cont'd)

2. Conceive all actions in this field in support to the populations concerned.

Starting from the premise that the failure of development models is, for the most part, due to the fact that the populations, especially women, have been excluded from the orientation and important decisions concerning the development process, it follows that in the area of drinking water, more than in any other area, we have to :

- **ensure that no important decision regarding water supply and management is taken without the participation, through consultative bodies, of the populations concerned, especially the women, who are the first ones responsible for providing water, hygiene and health to the family ;**
- **reinforce the power of the basic communities, and particularly the women, in their capacity to master the design and implementation of drinking water and sanitation projects, and to themselves manage the installations in the medium and long terms ;**
- **rethink the partnership between the South and North NGOs, so that Southern NGOs would be the true initiators of development in their communities, while maintaining close ties with Northern NGOs.**

Principios basicos de nuestra accion : (siguen)

2. Orientar las acciones en este sector con la finalidad de apoyar a las poblaciones afectadas.

El fracaso evidente de los modelos de desarrollo que se han aplicado, es debido, en gran parte, al hecho de haber excluido de las orientaciones y de las decisiones importantes del proceso de desarrollo a las poblaciones, y particularmente a las mujeres. Por lo tanto es necesario, que en todos los sectores y sobre todo en el sector del agua :

- **de asegurarse que toda decisión importante sobre el abasto y la gestión del agua se tome, por medio de mecanismos de concertación, con la participación de las poblaciones afectadas y principalmente de las mujeres que son las primeras responsables del abastecimientol de agua, de la higiene y de la salud de la familia ;**
- **de fortalecer el poder de las comunidades de base y particularmente de las mujeres, en su capacidad de controlar la planificación y la realización de los proyectos de agua potable y de su saneamiento y en la administración, por ellas mismas, de las instalaciones a mediano y largo plazo.**
- **de analizar nuevamente el concepto de partenariado entre los ONG del Sur sean los verdaderos promotores de su desarrollo, manteniendo estrechas relaciones con los ONG del Norte.**

3. Intégrer l'eau dans une approche globale du développement.

Partant de l'affirmation que le droit à l'eau est indissociable des autres droits de la personne liés au développement global, il est nécessaire de:

- **considérer l'accès à l'eau et à l'assainissement comme un droit essentiel autour duquel pourra s'articuler un programme de développement intégré, incluant des actions visant la santé, la gestion des déchets, la préservation de l'environnement, l'éducation et la création d'activités économiques;**
- **prévoir des actions spécifiques visant à préserver la potabilité de l'eau en même temps qu'à assurer sa distribution en quantité suffisante au plus grand nombre;**
- **privilégier dans tout projet le recours aux ressources locales existantes en termes d'expertise, d'emploi, d'équipements, de technologies, etc., en vue de contribuer en même temps au développement économique de la région nécessaire à tout développement global et durable;**

- **privilégier dans tout projet le recours aux ressources locales existantes en termes d'expertise, d'emploi, d'équipements, de technologies, etc., en vue de contribuer en même temps au développement économique de la région nécessaire à tout développement global et durable.**

3. Water must be integrated into a global approach to development.

Starting from the belief that the right to water cannot be dissociated from other human rights linked to global development, it is essential that we:

- **consider access to water and sanitation an essential right around which can be designed an integrated development program with actions focusing on health, waste management, preservation of the environment, education and the creation of economic activities;**
- **plan specific actions to preserve safe water, while at the same time ensuring the distribution of sufficient quantities for the most people possible;**
- **emphasize, in all projects, the use of existing local resources in terms of expertize, employment, equipment and technology, etc., in order to simultaneously contribute to the economic development of the region which is essential for any sustainable development.**

3. Integrar el agua en una perspectiva global del desarrollo.

A partir de la afirmación que el derecho al agua es inseparable de los demás derechos de la persona que están relacionados con un desarrollo global, es necesario:

- **considerar el derecho al agua y a su saneamiento como un derecho esencial en torno al cual se puede articular un programa de desarrollo integral, incluyendo las actividades en salud, en la utilización de las basuras, en la preservación del medio ambiente, en la educación y en las actividades económicas;**
- **preveer actividades especificas de conservación del agua potable y asegurar, al mismo tiempo, su distribución en cantidad suficiente al mayor número posible de personas;**
- **privilegiar, en todo proyecto, la utilización de los recursos locales existentes: maestría, trabajo, equipos, tecnologias, etc., con el fin de colaborar al mismo tiempo al desarrollo económico de la región, como elemento necesario a un desarrollo global y permanente.**

Principes guidant notre action : (suite)

4. Miser sur l'éducation et la formation des populations.

Partant du constat que les solutions purement techniques ne suffisent pas à elles seules à assurer une meilleure qualité de vie aux populations, il est nécessaire de prévoir avec tout projet et programme liés à l'eau, un volet formation visant également les hommes et les femmes. Dans ce domaine, certains principes se dégagent :

- **prévoir la formation de gestionnaires de l'eau et de techniciens locaux, tout en cherchant à y inclure spécifiquement les femmes, en vue d'assurer l'entretien des installations à moyen et long termes ;**
- **la formation comprend non seulement l'aspect technique, mais également la formation plus globale incluant l'hygiène, la santé ainsi qu'une meilleure compréhension du cycle de l'eau dans la nature et des moyens permettant de l'utiliser adéquatement ;**
- **s'engager à promouvoir auprès des populations (au Sud comme au Nord), une conscience du bien public et de l'importance de préserver la qualité de l'eau et de l'environnement en lien avec la santé ;**
- **adopter une approche participative dans la formation et s'appuyer davantage sur les compétences et les ressources locales dans tout programme de formation et d'éducation.**

Principles guiding our actions : (cont'd)

4. Focus on education and training of the populations.

Starting from the premise that purely technical solutions cannot, in and of themselves, ensure people a better quality of life, all water-supply projects and programs must include equal training for both men and women. In this area, certain principles stand out :

- **local water managers and techniciens must be trained, and special efforts must be made to include women, so that the installations can be maintained over the medium and long terms ;**
- **training includes not only the technical aspects, but also more comprehensive programs that include hygiene, health and a better understanding of the cycle of water in nature and the means to use it adequately ;**
- **the populations of both the North and the South must be made aware of the public good and the importance of preserving the quality of the water and the environment in relation to maintaining good health.**
- **a participatory approach to training must be used and all training and education programs must increasingly rely on local skills and resources.**

Principios básicos de nuestra accion : (siguen)

4. Priorizar la educación y la formación de las poblaciones.

Partiendo de la constatación que las soluciones estrictamente técnicas no son suficientes, por ellas mismas, para asegurar una mejor calidad de vida a las poblaciones, es necesario preveer, en todo proyecto y programa que tenga relación con el agua, el tema de la formación de los hombres y de las mujeres. En este sentido, varios principios se delimitan :

- **preveer la formación de administradores del agua y de las técnicas locales, incluyendo de manera especial a las mujeres, para poder asegurar el mantenimiento de las instalaciones a mediano y largo plazo ;**
- **incluir en la formación no solamente los aspectos técnicos sino también los temas mas generales como la higiene, la salud así como una mejor comprensión del ciclo del agua en la naturaleza y los medios que permiten su adecuada utilización ;**
- **comprometerse a promover, tanto en las poblaciones del Norte como del Sur, la toma de conciencia sobre el bien público y sobre la importancia de defender la calidad del agua y del medio ambiente, en relación con la salud ;**
- **adoptar una orientación participativa, utilizando en los programas de formación y de educación la competencia y los recursos locales existentes.**

Recommandations :

Le droit à l'eau et à l'assainissement doit avant tout être garanti par les gouvernements et les institutions internationales qui doivent prendre leurs responsabilités de façon urgente. En ce sens, nous recommandons les actions suivantes :

1° **Traduire en termes budgétaires le caractère prioritaire de l'accès à l'eau et à l'assainissement dans les plans nationaux.**
2° **Adopter de manière concertée et explicite une politique globale de gestion des ressources en eau touchant également les domaines de l'environnement, de la production agricole et du développement économique de telles politiques ne pouvant être adoptées sans concertation avec les populations concernées.**
3° **Assurer un partage plus équitable des fonds destinés à l'accès à l'eau et à l'assainissement et faire preuve de vigilance, particulièrement dans un contexte d'occupation militaire ou de conflit armé, afin de s'assurer que le droit d'accès à une ressource aussi vitale ne soit pas nié à une partie de la population pour des raisons partisanes.**
4° **Faire adopter une législation concernant les droits et devoirs liés à l'eau et à l'assainissement et mettre sur pied des instances de concertation et d'arbitrage, tant sur le plan national qu'international, chargées de gérer les conflits liés à la gestion de l'eau.**

Recommendations :

The right to drinking water and sanitation must be guaranteed by the Governments and International Institutions who have to take up their responsibilities. Hence, we recommend that the following actions be taken urgently:

1° **To translate in budgetary terms the priority given to drinking water supply and sanitation in all national development plans.**
2° **To adopt, in a concerted and explicit manner, a global policy of water-resource management that deals equitably with the fields of environment, agricultural production and economic development. Such policies cannot be adopted without consultation with the populations concerned.**
3° **To ensure a more equitable sharing of funds allocated to drinking water supply and sanitation and to show proof of vigilance, particularly in a context of military occupation or armed conflict, in ensuring that the right of access to such a vital resource is not denied to a section of the population for partisan reasons.**
4° **To pass legislation regarding the rights and duties related to water and sanitation and establish bodies for consultation and arbitration, at both the national and international level, with the responsibility of managing conflicts around water management.**

Recomendaciones :

El derecho al agua y a su saneamiento tiene que estar *garantizado, ante todo, por los* gobiernos y las instituciones internacionales que deben asumir sus responsabilidades de manera urgente. Por lo tanto, recomendamos las siguientes acciones:

1. **Integrar en los planes nacionales, y en términos presupuestarios, el caracter prioritario del acceso al agua y a su saneamiento.**
2. **Adoptar de forma explícita y coordenada una política global de la administración de los recursos del agua, incluyendo los aspectos del medio ambiente, de la producción agrícola y del desarrollo económico; dichas políticas no deben ser adoptadas sin el acuerdo de las poblaciones afectadas.**
3. **Asegurar una repartición justa de los fondos destinados al acceso al agua y a su saneamiento y permanecer vigilantes, sobre todo en contextos de ocupación militar o de conflicto armado, para asegurarse que el acceso a un recurso tan vital como el agua no sea privado a una parte de la población por razones partidarias.**
4. **Hacer adoptar una legislación sobre los derechos y deberes al agua y a su saneamiento y establecer mecanismos de concertación y de arbitrage de litigios, tanto a nivel nacional como internacional, que se encargen de solucionar los conflictos relacionados con el agua.**

Recommandations : (suite)

5° Reconnaître le droit et le besoin des populations, et principalement des femmes, de participer à travers des structures démocratiques, à la gestion de l'eau en tant qu'élément central à tout développement, en les associant à la définition des politiques et à toutes les phases de projets hydrauliques et d'assainissement.

6° Reconnaître et appuyer par leur action et leur politique, les initiatives des communautés locales visant l'accès à l'eau potable et l'assainissement, particulièrement celles trop longtemps ignorées des bidonvilles.

7° Insister sur l'importance de gérer et de réhabiliter les ouvrages existants avant de réaliser de nouveaux investissements.

8° S'appuyer systématiquement sur les ressources humaines et matérielles locales avant de considérer le recours à des ressources extérieures et associer à tout programme hydraulique le tissu économique local (entreprises, artisans, petits commerces, etc.) en vue de favoriser un développement global.

9° Tenir compte de la dimension sociale et humaine dans tout projet d'hydraulique et en ce sens, reconnaître l'importance des rôles respectifs des ONG du Sud et du Nord et chercher à les associer à toutes les étapes : en amont, dans la conception de toute politique liée à la gestion de l'eau, et en aval, dans la mise sur pied de tout programme lié à l'eau potable et à l'assainissement.

Recommendations : (cont'd)

5° To recognize the right and need of populations, and particularly women, to participate in water-management projects through democratic structures and as key actors, by involving them in the definition of politics and at every phase of water supply and sanitation projects.

6° To recognize and support, in action and policy, local community efforts to ensure access to drinking water and sanitation, particularly in long ignored slum areas.

7° To stress the importance of managing and rehabilitating existing projects before undertaking new investments.

8° To rely systematically on local human and material resources before seeking external resources, and ensure that any water-supply project is closely tied in to the local economy (companies, artisans, small business, etc.), in order to promote a sustainable development.

9° To take the social and human dimension into account in any water-supply project, and in this aspect to recognize the importance of the respective roles of the NGOs of the South and the North and seek to involve them at every stage : from the initial conception of policies related to water management, to the implementation of any program linked to drinking water and sanitation.

Recomendaciones : (seguen)

5. Reconocer el derecho y la necesidad de las poblaciones y principalmente de las mujeres a participar, por medio de estructuras democráticas, a la gestión del agua como elemento central de todo desarrollo, asociandoles en la definición de las políticas así como en todas las fases de los proyectos hidraulicos y de saneamiento de las aguas.

6. Reconocer y apoyar, con las actividades y las políticas, las iniciativas de las comunidades locales que buscan el acceso al agua potable y a su salubridad, sobre todo aquellas comunidades tanto tiempo olvidadas de los suburbios y las villas misera.

7. Insistir sobre la importancia de administrar y de rehabilitar las obras existentes antes de comenzar nuevas inversiones.

8. Apoyarse sistemáticamente en los recursos humanos y materiales locales, antes de recurrir a los recursos exteriores y de asociar en todo programa hidraulico la gama de la economía local (compañias, artesanos, pequeños comercios, etc.) para favorecer un desarrollo global.

9. Considerar la dimensión social y humana en todo proyecto hidraulico y en este sentido, reconocer la importancia de las funciones respectivas de los ONG del Sur y del Norte, integrandolos en todas las etapas: en primer lugar, en la elaboración de las políticas de gestión del agua y posteriormente en la puesta en marcha de todo programa de agua potable y de su saneamiento.

LISTE DES PARTICIPANTS

LIST OF PARTICIPANTS

LISTA DE LOS PARTICIPANTES

De Rooy, Carel
Dolgin, Marc
Elmendorf, Mary
Falkenmark, Malin
Grover, Brian
Lafleur, Guy
Laidlaw, John
Mahadevan, Kumar
Azzam Claude
Bunworth, Ciunas
Caillère, Claude
Champagne, Jacques
Chauvin, Jim
Riofrio Benavides, Gustavo
Gauvry, Michel
Geadah, Yolande
Maione, Roméo
Melchior, Siri
Minier, Vincent
Mwangola, Margaret
Ndiaye, Mazide
O'Brien, Robert
Pawelek, Nancy
Petillon, Yves
Sansur, Ramzi
Vézina, Marc
Manusadzianas, Levonas
Faucon, Michel
Wilson, Robert
Rosales Escalante, Elias
Hadjadj, Bachir
Martin, Nigel
Chabert D'Hières, Laurent
Houdus, Christian
Dembélé, Zazé Norbert
Diawara, Adama
Surreau, Charles
Backler, David
Cédeno-Caroit, Amélia
Alam, Syed Nurul
Lalonde, Richard
Rotival, Alexander H.
Brodhead, Tim
Williams, Kathi
London, Mark
Allard, Daniel
Lebel, Constance
Sidhom, Magdi
Joseph, Foblas
Robichon, Yves
Lavoie, Marc
Abeydeera, W.P.P.
Savadogo, Oumarou
Awe, Eugénie
Abou Khalil, Micheline
Veenstra, Richard
Piché, Réjean
Vaillancourt, Pierre
Valera, Médiatrix
Singh, J.B.
Sautier, Denis
Touré, Saran
Mihaïla, Michael
Howard, Jim
Finucane, Aengus
Beyer, Martin
Bélisle, Michel
Bissel, Kirsten
Lopez, Norma
Ali, Alaoui Moulay
Cavanaugh, Dorinda
McNeil, Mary
Mercier, Pierre
Harmston, Richard
Kok, Han
Rego, Guy Gomes Do
Gagné, Michel
Lauzier, Danielle
Lehoux, Mireille
Davilmar, Paule
Mostovac, Mark
Mihaila, Valentina
Dupin, Jean-Charles
Kayitaba, Gahayiro
Grouès, Jean-Paul
Pierre-Charles, Gérard
Ali, Ashraf
Moreau, Sophie
Comeau, Jean
Gonneville, Robert
Désilets, André
Doré, Jeanne
Dorval, Robert
Hébert, Raymond
Jost, Raymond
Lapointe, Denis
Loiselle, Danielle
Massé, Jean-Pierre
Matte, Sylvain
Sanchez, Andres
Simard-Dupuy, Martine
Truchon, Gaston
Veronneau, Pierre
Lafleur, Louise
Loan, Peter
Haineault, Yolande
Chabot, Irénée
Hamel, Suzanne

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COORDINATION GÉNÉRALE

OXFAM-QUÉBEC

169, RUE SAINT-PAUL EST
MONTRÉAL, QUÉBEC
CANADA H2Y 1G8

TÉLÉPHONE: (514) 866-1773
FAX: (514) 861-2367
TÉLEX: 055-61789

List of Participants

Albertinia, Skaidrite
Latwian Parliament
11,Jekaba Str. Work: 70132/323916
Riga 226811 Updated: 5/19/93
LATVIA Title: Ms. Categories: A
[MP], tlx161 148SU; przyl.14-20 maja; bil. Lat. Airlin. Riga
fax: 161 148 SU; fax: 70132 211 611 [fw] [dieta]
[S] [udzial] [batory] [grand] [fremb]

Allard, Daniel
709, rue de la Suete Work: (418) 658-0191
Quebec (Quebec),, CANADA Updated: 5/18/93
Title: Mr.
[udzial] [fremb]
Fax: (418) 681-7077

Angjeli, Valer
c/o Association of Nature Conserv Home: -355.42.22772
Dept. of Zoology, University of Work: -355.42.33553
Tirana, Ruge 1. Updated: 5/11/93
Tirana, ALBANIA Title: dr.
fax: -355.42.238338, [udzial] [fw] [dieta]
[batory] [grand] [fremb]
przyjazd 14-20 maja sam; bilety biuro Malev Tirana.

Bartos, Tomasz
International Development Reserch
Centre Program Eastern Europe Work: 613/236-6163 233
250 Albert Street POBox 8500 Updated: 5/19/93
Ottawa K1G 3H9, CANADA Title: Mr.
[udzial] [fremb] fax:613/238 7230; telex: 0533753

Beaulieu, Denise
Executive Director, Watercan
323 Chapel Street Work: (613) 230-5182
Ottawa K1N 7Z2, CANADA Updated: 5/18/93
Title: Ms.
[udzial] [isw] [solec] przyl. 15-20 [fremb] [sam] [bwo]
British Airways 850 godz.15.05
fax:613/237-5969

Boot, Marieke
I.R.C. International Water and
Sanitation Centre/P.O. Box 93190 Work: +3170-3314138
Prinses Margietplantsoen 20 Updated: 5/19/93
2509 AD The Hague, NEDERLANDS Title: Ms.
[udzial] [bwo] 15-20maja [grand] fax: +31-70-3814034
[fremb] [sam]

Bunker Roy, Sanjit
Social Work and Research Center
Madanganj, Rajasthan Work: 91-1463-3016
Tilonia 305816, INDIA Updated: 5/19/93
Title: Mr.

17-20 maja [isw] [udzial] [grand] [fw] [bwo]
[fremb]
Fax : 91-141-40909

Caillere, Claude
Comite Catholique contre la Faim
et pour le Developpement Work: (33)1 40 265160
4, rue Jean Lanthier Updated: 5/19/93
75001 Paris, FRANCE Title: Mr.
16-19 maja; [grand] [udzial] [isw] [fremb] [sam] [bwo]

przyl. 16 maja 20.25 Air France z Paryza
Fax : (33) 1 40 265687

Chabert D'Hieres, Laurent
EAU-VIVE
12, rue Rochambeau Work: 33-1-48783033
75009 Paris, FRANCE Updated: 5/19/93
Title: Mr.
przyj.18-20; [solec] [udzial] [isw] [fremb]
[sam] [bwo] przyl. BA z Londynu 850 15.05
fax : 33-1-48741410

Cheikh Diong, Ibrahima
RADI, B.P. 12227 Work: (221) 255563
Dakar, SENEGAL Updated: 5/19/93
Title: Mr.
16-19 maja [isw] [udzial] [grand]
[fremb] [fw] [bwo] przyl. z Zurichu SA 446 godz. 14.20
Fax : (221)255564

Colin, Andre
Extra-Muros
2, rue Ducourouble Work: (33) 20 635756
59000 Lille, FRANCE Updated: 5/19/93
Title: Mr.
15-19 maja; [isw] [udzial] [solec] [fremb]
[sam] [bwo] przylot ?
Fax : (33) 20 546842

Donzier, Jean- Francois
Office International de l'Eau
21, rue de Madrid Work: (33)1 45 221467
75008 Paris, FRANCE Updated: 5/19/93
Title: M.
15-19 maja a; [isw] [udzial] [solec]
[fremb] przyl. AF/LO 1990 g.20.25
[sam] [bwo]
Fax : (33)1 40080145

Durufle-Lozinska, Anne
Fundacja dla Polski
ul Flory 9 Work: (4822) 488055
00-586 Warszawa, POLSKA Updated: 5/19/93
Title: Pani
[udzial] [fremb] fax:4822/493561 [polngo]
Fax : (4822) 493561

Galdean, Nicolae
Cultural European Center
50 Primaveri Ave. Work: 401.3128327
Bucharest, 1, ROMANIA Updated: 5/19/93
Title: Dr.
fax: 401.312.8327 [S] [udzial] [batory] [grand] [fw]
przylot 14-20 maja; Tarom rum. lin.lot. biety do od.biuro
Bukareszt. [fremb] [dieta]

Ietcu, Ioan
Foundation ecologique de Bukovine Home: 40/987/26646
Str. Alex. cel Bun, 24, Work: 401 6185004
Bloc H3, sc A, ET. II Ap.7 Updated: 5/19/93
5800 Suceava, ROMANIA Title: Dr.
fax:401312 83 27 [S] [udzial] [batory] [grand] [fremb]
przyl. 14-20 maja;bilety w biurze TAROM w Bukareszcie.
[fw] [dieta]

Iskreva-Giaurova, Diana
Kiril i Methody 77A, ap. 27 Work: +359.42.346.41
Stara Zagora 6000, BULGARIA Updated: 5/19/93
Title: Ms.
fax:+359 4238810 [udzial] [rec] [grand] [fremb]
przyl.15-20 maja; bil. w LOT w Sofii. przyl. 10.45
[fw] [dieta]

Jamontt, Zofia
Stadnina Koni Rzeczna Work: (580-8) 20-86
14-400 Paslek, POLSKA Updated: 5/19/93
Title: Pani
[udzial] [fremb]

Jost, Raymond
Secretariat international
de l'eau (SIE) Work: 514/8492822
48,rue Le Royer Ouest H2Y 1W7 Updated: 5/19/93
Montreal (Quebec),, CANADA Title: Mr.
fax: 514 8492822 [fremb]
[udzial] [solec] [isw] przyj. 16-20 maja [fw]
[bwo] przyl. BA 850 g. 15.05

Kaczmarek, Bernard
Biuro Wspolpracy w Dziedzinie
Ochrony Srodowiska, MOSZN
ul. Wawelska 52/54
00-922 Warszawa, POLSKA
[udzial] [fremb]
Work: 250001
Updated: 5/19/93
Title: Mr.

Kazazi, Myzafer
c/o Association of Nature
Conservation, University of
Tirana, Dept. of Zoology,Ruge1
Tirana, ALBANIA
Work: -355.42.23518
Updated: 5/17/93
Title: Mr.
fax: -355.42.23838 [udzial] [batory] [grand] [fw]
przyl. 14-20 maja;biletyw Malev w Tiranie
[fremb] [dieta]

Kovacs, Karoly
Expert, REFLEX Association for
the protection of the Environment
Bartok Bela u. 7
H-9024 Gyor, HUNGARY
Work: +36.96 10 988
Updated: 5/15/93
Title: Dr.
fax: 0.036 -1 276 3932 [fw] [zwrot] [dieta]
przyj. poc. 16-20 maja bil. we wl. zakr.
[udzial] [grand] [rec] [fremb]

Kubler Mamelouk, Martine
United Nations Development
Programme (PNUD- UNDP)
304 East 45th Street
New York 10017, USA
Work: (212) 906-6284
Updated: 5/19/93
Title: Ms.
15-19 maja; [udzial] [isw] [solec] [fremb]
[sam] [bwo] przyl. ?
Fax (212) 906-6595

Kusta, Albinas
Kaunas - Akademija
the settlement 11,
apt. 15
234324 Kaunas, LITHUANIA
Home: 296645
Work: 296806 /296793
Updated: 5/19/93
Title: Mr.
[S] fax: 0.07.0127.296.531 [grand] [fremb]
[udzial] [batory] [fw] [dieta]
przyl. 15-20 maja; bilety LOT Vilnius

Larre, Dominique
Organisation et environnement
B.P. 46 - F-94251
Gentilly Cedex, FRANCE
Work: (33)1-47400102
Updated: 5/19/93
Title: M.
15-19 maja; [isw] [udzial] [solec] [fremb]
[sam] przylot ?

Le Masne, Dominique
Ambasada Francji
ul. Piekna 1 Work: 02 628 8401
00 477 Warszawa, POLAND Updated: 5/19/93

[fremb] [udzial] fax: 022 297207

Lenk, Enn
Estonian Water Works
Sadama 11 Work: 0.07.0142444434
Tallin EE0102, ESTONIA Updated: 5/11/93
Title: Mr.
fax: 8.10.482.2389505 [fw] [dieta] [zwrot]
[rec] [grand] [udzial] [fremb]
przyj. poc. 16-20; bilety we wl. zakresie.

Levald, Heino Home: 523053
Sutiste st. 21 Work: 521623
EE 00108 Tallin, ESTONIA Updated: 5/19/93
Title: Prof.
[S] Kontakt przez Polska Ambasade [udzial] [batory] [grand]
fax:0.07 014 521625 [fremb] [fw] [dieta] [zwrot]
przyj. pociagiem 16-20 maja. bil. we wl. zakr.

Locke, Bryan M.C.
Water and Sanitation
Collaborative Council Work: 41-22-791 3549
20, av. Appia Updated: 5/19/93
CH-1221 Geneve 27, SUISSE Title: Mr.
16-19 maja [udzial] [grand] [sam] fremb]
FAX : 41-22-788 0054

Lukasiak, Pawel
Ministry of Labor
ul. Nowogrodzka 1/2/5 work: 628 77 38
Warszawa Updated: 5/19/93
Title: Mr.
[udzial]

Maksimchouk, Vladimir L.
Zelenyi Svit Home: 044/2774452
Ukrainian Environmental Assoc. Work: 044/4170283
Contractova Sg. 4 Updated: 5/11/93
Kiev-70,252070, UKRAINA Title: Mr.
fax: 044/417.4383; [udzial] [batory] [grand] work.221-2890
przyj. poc. 15-20; bil. we wl. zakr. [fremb]
[fw] [dieta] [zwrot]

Mandon, Jean-Georges
Conseiller Culturel, Scientifique
et de Cooperation Technique Amb. Work: 48-2-628 8401
Francji, ul. Piekna 1 Updated: 5/19/93
00-477 Warszawa, POLAND Title: Ms.
[fremb] [zap] [udzial]

Fax:48-2-626 4077

Marchandise, Patrick
OMS - Bureau regional de l'Europe
149, rue Gabriel Peri Work: (33)83 158776
F-54500 Vandoeuvre Updated: 5/19/93
Nancy, FRANCE Title: Mr.
15-19 maja [isw] [udzial] [solec] [fremb]
[sam] [bwo] przyl. AF/LO 1990 g. 20.25
Fax : (33) 83 158773

Meved, Miran
Prvomajska 1 Work: +3862.413.141
62000 Maribor, SLOVENIA Updated: 5/11/93
Title: Mr.
fax: +3862413978 [udzial] [rec] [grand] 0-038.62.200 80
przyj. poc. 15-20; bil. we wl. zakresie [fremb]
[fw] [dieta] [zwrot]

Navarro, Florence
Programme Officer
UNDP - PNUD Work: 255010
Al. Niepodleglosci 186 Updated: 5/19/93
00-608 Warszawa, POLSKA Title: Ms.
fax:254958; telex: 825836; E-MAIL UDP 159
[udzial] [fremb]

Ochman, Stefan
Reseau Canadien
de l'environnement Work: (613) 563-2078
C.P. 1289, Succursale B Updated: 5/19/93
Ottawa K1P 5R3, CANADA Title: Mr.
[udzial] [isw] [solec] przyj. 17-20 maja
[fremb] [sam] przyl. ?
Fax : (613) 563-7236

Paskalev, Ph.D., Atanas
Center for electronics in
engineering and building industry Work: 359-2-874251
Sv Nedella Updated: 5/19/93
Sofia 1000, BULGARIA Title: Mr.
[udzial] fax 359.2.87.36.22 [batory] [grand] [fremb]
przyl. 15-20 maja; bil. LOT Sofia
[fw] [dieta]

Pinglin, Philippe
Comite Catholique contre la Faim
et pour le Developpement Work: (1) 44-828176
4, rue Jean Lantier Updated: 5/19/93
75001 Paris, FRANCE Title: Mr.
16-19 maja: [udzial] [isw] [grand] [fremb]
przylot 20.25 Air France
[bwo] [sam]
Fax : (1) 44-828145

Poliautre, Danielle
Extra-Muros
2, rue Ducourouble Work: (33) 20 635756
59000 Lille, FRANCE Updated: 5/19/93
Title: Mme
15-19 maja; [udzial] [isw] [solec] [fremb]
[sam] [bwo]
przyl. ?
Fax : (33)20 546842

Potie, Louis
Adjoint au Maire de Marseille
Hotel de ville Work: 91 551111
13233 Marseille Updated: 5/19/93
Cedex 1, FRANCE Title: Mr.
18-19 maja [udzial] [isw] [grand] [fremb]
[sam] [bwo]
godz. ?
Fax : 91 553916

Ramos, Lilia
APPROTECH, ASIA; Philippines
Social Development Center ground Work: 530 0786
floor Real Street Intramuros Updated: 5/19/93
Manila, PHILIPPINE Title: Ms.
[isw] [udzial] [solec] 15-20 maja [fremb]
przylot 15 Maja OS 621 13.15 z Wiednia.
[fw] [bwo]
(632) 818-9720 box 2089

Rashid, S.M.A.
Director, NGO Forum for Drinking
Water Supply and Sanitatation Work: 811749
4/6 Block E Lalmatia Updated: 5/19/93
Dhaka -1207, BENGLADESH Title: Mr.
[isw] [udzial] [grand] [fw] fremb]
przyl. KLM 275 g.11.00 16-21 maja
Fax : 880-2-813095 (attn-NGOF)

Regallet, Gabriel
Secretariat international
de l'eau (SIE) Work: (514) 849-4262
48, rue Le Royer H2Y 1W7 Updated: 5/19/93
Montreal (Quebec),, CANADA Title: M.
przyj.16-20 maja; [udzial] [isw] [solec] [fremb]
[fw] [bwo] przyl. Lufthansa 2819 g. 12.05
Fax : (514) 849-2822

Rotival, Alexander
Le Petit-Ermitage Work: 021/8260067
1180-Rolle, SUISSE Updated: 5/19/93
Title: Mr.
15-20 maja, [udzial] [solec] [isw] [fremb]

[fw] [bwo] przyl. SA z Zurichu SA 446 g. 14.20
Fax : 021/826 0067

Rutkoviene, Vida
Chairwomen of the ICSDW Home: (0127) 731312
Lithuanian Agricultural Academy Work: (0127) 296015
4324 Kaunas Academ, LITHUANIA Updated: 5/19/93
Title: Ms.
[S] Fax: +296 531 [fw] [dieta]
[udzial] [batory] [grand] [fremb]
przyl.15-20; bilety w LOT Vilnius

Schlimanski, Sabina
Cabinet de la presidence
du Conseil regional Work: (33)20 606592
7, square Morrison Updated: 5/19/93
59000 Lille, FRANCE Title: Mme
[west] fax: 20.54.68.42 [udzial]
Fax : (33)20 606597

Skoklevski, Zivko
Grazdezen Fakultet (Faculty for
Civil Engineering) P.O.Box 560 Work: +3891 116066
Bul. Partizanski Odredi b.b. Updated: 5/11/93
91000 Skopje, MACEDONIA Title: Dr.
[udzial] [rec] [grand] [fremb] [fw] [zwrot]
fax:+3891 117 367 [dieta]
przyl. sam. 15-20maja; bilety we wl. zakresie.

Stolzman, Maria
Water Supply Foundation Work: 384683
01-015 Warsaw, POLSKA Updated: 5/15/93
Title: Dr.
fax: 389505; [udzial] [fremb]

Szczepanski, Piotr
Water Supply Foundation Work: 384683
01-015 Warszawa, POLSKA Updated: 5/15/93
Title: Mr.
fax: 389505 [udzial] [fremb]

Vanderveken, Alain
Secretariat international
de l'eau (SIE)
Montreal (Quebec),, CANADA Updated: 5/17/93
Title: Mr.
przyj. 11-20 maja; [solec] [isw] [udzial] [fremb]
[fw]
fax/tel h. 514/672-4551

Varro, Sandor
Expert of the Bajcsy-Zsilinszky
Society, Manager Csepel Insel Work: +36.1.277 0022
The Cap. City. Water. WorksPOB512 Updated: 5/19/93
H-1566 Budapest, HUNGARY Title: Mr.
fax:+36.1.276.3932 [fw] [zwrot] [dieta]
[udzial] [grand] [rec] [fremb]
przyj. poc. 16-20 maja; bil. we wl. zakresie
fax : (36-1) 276-3932

Vasconez, Mario
CIUDAD-Centro de investigaciones
La Gasca 326 y Carvajal Work: (593)(2)230192
Casilla 17-08-8311 Updated: 5/19/93
Quito, ECUADOR Title: Mr.
[isw] [udzial] [grand] [fremb]
[fw] [bwo]
15-20 przylot 15 maja 11.10 LO 1916 from Paris
Fax : (593)(2)500 322

Veljanovski, Zivko
Gradezen Fakultet
(Faculty for Civil Engineering) Work: +3891.116 066
Bul. Partizanski Odredi b.b. Updated: 5/11/93
91000Skopje POB560, MACEDONIA Title: Dr.
[udzial] [rec] fax:+389117 367 [fremb] [fw]
[grand] [dieta] [zwrot]
przyjazd 15-20 maja samolotem; bilety kupione we wl.zakr.

Zakis, Eriks
Rural Innovation Center
Upes prospekts 16 Work: 8-250-47270
Ogre 228300 Updated: 5/19/93
LATVIA Title: Mr. Categories: B
[udzial] [batory] [grand] [fremb] [fw]
przyl.14-20 maja; bilety w Lat. Airlin. PF Riga
[dieta]
Fax : 250 45707

Zhovnirenko, Pavlo
Zelenyi Svit Home: 0/44/4341310
Contractova Sg. 4 Work: 044/417.0283
Kiev-70,252070, UKRAINA Updated: 5/11/93
Title: Mr.
fax:044/417-4383 [udzial] [batory] [grand] [fremb]
przyjazd poc. 15-20 maja; bilety we wl. zakr.
[fw] [dieta] [zwrot]

Biuro Obslugi Ruchu Inicjatyw
Samopomocowych
ul. Nowolipie 25b
Warszawa

Biuro Obslugi Ruchow
Ekologicznych
ul. Szara 14
Warszawa

Charytatywny Sw. Brata Alberta, I
ul. Marsz. J. Pilsudskiego 11
72-600 Swiniujscie, POLAND

Czakon, Waclaw
Fundacja Szczesliwe Dziecinstwo
ul. Jezuicka 17/2
20-113 Lublin, POLAND

Dietrich, Maria Janina
AQUA
Krolowej Marysienki 33/9
02-954 Warszawa, POLAND
(W) 642 00 07

Durufle-Lozinska, Anne
Fundacja dla Polski
ul Flory 9
00-586 Warszawa, POLSKA
(W) (4822) 488055

Foppke, Grzegorz
Fundacja RODZINA DZIECI
ul.Powstancow Wielkopolskich 9
80-464 Gdansk, POLAND

Fundacja Batorego
ul. Flory 9
Warszawa

Fundacja Bez Wzgledu na Niepogode
ul. Flory 9
Warszawa

Fundacja Kultury, Wielkopolska
ul. Raszynska 29B/23
60-135 Poznan, POLAND

Fundacja na Rzecz Rozwoju
Polskiego Rolnictwa
ul. Nieklanska 35
03-924 Warszawa

Fundacja Pomocy Spolecznej SOS
ul. Nowolipie 9/11
Warszawa

Fundacja Rozwoju Demokracji
Lokalnej Rzeszowski Osrodek
Samorzadu Terytorialnego
ul. M. Sklodowskiej-Curie 8/1
35-036 Rzeszow, POLAND

Jankowski, Andrzej
Fundacja PRO SALUTE
ul. Malachowskiego 12
42-500 Bedzin, POLAND

Janowska, Zdzislawa
Miedzynarodowa Fundacja Kobiet
ul' Wieckowskiego 31 m.21
90-411 Lodz, POLAND

Jurek, Joanna
American Committee for Aid to
Poland
ul. Flory 9
Warszawa

Lokalnych Placowka Terenowa, Agen
FISE w Warszawie
ul. Struga 26/28 p.715
26-600 Radom, POLAND

Stowarzyszenie Pomocy Ludziom, Ja
ul. Legnicka 12
59-400 Jawor, POLAND

Swist, Jacek
Katolickie Stowarzyszenie
Trzezwosci DOM
Al 1000 lecia 39
34-400Nowy Targ, POLAND

Towarzystwo Kulturalne, Wielkopol
ul. Swietego Marcina 80/82
61-809 Poznan, POLAND

Wroclawski Sejmik Osob awnych, Wr
Niepelnosprawnych
ul. Zapolskiej 2/4 p. 24
50-032 Wroclaw, POLAND

Wzajemnej BARKA, Fundacja Pomocy
Wladyslawowo 68
64-310 Lwowek Wlkp, POLAND

Papers from post-communist countries

INTERNATIONAL SEMINAR

"INVOLVEMENT OF THE CIVIL SOCIETY IN WATER AND SANITATION"

W A R S A W , 17-19 May 1993

DR. VALER ANGJELI.
ENG. MYZAFER KAZAZI,

A L B A N I A

Water and Sanitation in Albania and NGO's Activities

Honourable chairman,

Honourable organisers and sponsors of the seminar,

Honourable participants and colleagues,

On behalf of the Association of Nature Conservation and its chairman, we thank the organisers and sponsors of this seminar for the invitation and possibilities offered to us to exchange opinions concerning these important issues in the field of health, environment and civilised life in general. The lofty goals of the seminar, the careful preliminary work and integration of specialists from differently levelled states clearly manifest worldwide preoccupation to smooth these differences and find most suitable ways of overcoming the difficulties several populations are faced with. In this context, our country is greatly interested in the topics to be treated by this seminar. Since the beginning, it may be underscored that as volunteer unions outside political issues, the associations dealing with these issues, might play an important role to the progress of the issues taken up for discussion today.

It is more than three years that the democratic changes that have swept many Easteuropean states are taking place in Albania, too. These processes created the conditions for a greater activization of societies and foundations. Naturally, we consider our situation as being at the beginning of these activities and consequently certain shortcoming recognised.

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FIRST ISSUE:

Albania is situated in the South-West of the Balkan peninsula.Its territory covers 28.748 square km.Its population accounts for over three million inhabitants.Annual average rainfalls - 1500 mm.It has a reservoir hydrographic surface of 43.000 square km.The hydrographical network is developed and includes 10 main rivers, more than 250 natural lakes, as well as 700 artificial lakes for agricultural and energy purposes.The average flow of river water into the sea is 1300 m^3/sec.The Shkodra, Chrid and Prespa lakes are among the largest of the Balkan peninsula.

The calcareous sources occupy an important place in the country's water resources.There are 25 calcareous regions, where about 110 springheads with a flow of 100 l/sec emerge.Besides these, there is "the Blue Eye" springhead (South Albania - Saranda district) with an annual average flow of 18,2 m^3/sec. Other calcareous sources have an average annual flow of 2-8 m^3/sec.These underground waters are fresh (6 - 12° C),have a minor mineralization (250-350 mg/l) dominated by bicarbonate ions and in general incontaminated from the bactereological point of view.In the Albanian Riviera of the South, the calcareous springheads, extended from Vlora to Saranda (about 100 km of coast) provide a flow of more than 25 m^3/sec.

The country's western zone exploits the underground waters (we are speaking of the lowland zone) through hydrological wells, usually situated in the second water-bearing layer. The waters are clean from the bacterial point of view and abide by the W.H.O. standards as to their chemical composition.This category includes 26 drilling-well complexes with a capacity of 5 m^3/sec.

It is understandable that our country is rich in underground and superficial waters, but not all capacities have been utilized. Such a situation offers possibilities to solve the supply of the population with water, as well as its exportation by packing it up or by maritime transport.

Although we are faced with such a wealth, and should mention

the fact that efforts have been made to supply the population with water, it should be pointed out that the conditions of the utilizatior of these waters (the technical-sanitary aspects) have not been and are not good yet.

Albania has 2747 villages. Until 1985, 1247 villages had their aqueducts,whereas 300 villages were partly supplied by aqueducts. 1200 villages were supplied with water from freatic wells, and local sources.The population supplied with water by aqueducts accounted for 55% (1.030.000) of the population in the countryside.

From the hygienic-sanitary surveys, on Republic scale, of this period it resulted that 73% of the domestic wells and 54,1% of local sources in the countryside were contaminated a great deal from the bacterial point of view and NH_3 and NO_2 presence was frequent.The tests effectuated in the water samples taken from 500 aqueducts resulted that 43,2 per cent of them were contaminated from the bacteriological point of view.The reasons for this contamination consist in non-observing of the sanitary conditions in the springhead zones of in the domestic wells, as well as in the damages inflicted on the tubes.From the examination of the epidemiological data of the years 1976-80, it results that 39,12% of total cases of typhoid fever in the rural population of the country (Tirana district excluded), have transmitted in hydric ways.Comparing the epidemiological data for a 20 year long period(1967-1986) of the villages not well-supplied with water (71 villages,where freque-nt typhoid fever cases or spreads through hydric ways have been witnessed) with the villages better supplied with water and few typhoid fever cases (25 villages), it resulted that the morbidness of typhoid fever was 6.6 times higher, viral hepatitis 1,9 times higher and dysentery was 2.5 times higher.

In 1986 it was foreseen to improve the situation of drinking water supplies in the countryside and in some towns.It presumed construction of aqueducts in 1600 villages according to the W.H.O. criteria (with sanitary defensive zones, depots, chlorination processes, a tap for every 60-70 inhabitants and suplly of 40-60 liters per

inhabitant daily). According to hitherto data, there are 500 villages left which are not supplied by aqueducts. These working demand about 80 tons of pipes and about 400 electro-pumps. Studies on how to exploit underground and superficial waters in order to supply these villages exist, but they have not been carried into effect for lack of funds.

We have not completed yet the survey on the tecnical-sanitary evaluation of the current situation of aqueducts built in the countryside, but judging from the numerous information we have, we might affirm that water sources sanitary systems have been considerably damaged; Water chlorination is not realized in any countryside aqueducts (the villages supplied from the regional aqueducts excluded), meanwhile water pipes have been damaged in many villages. Although initiated, we are of the opinion that sanitary propaganda on aqueduct maintenance, concrete methodological assistance, the efforts of state organs to distribute hypochlorites in villages, the treatment of the problems over Radio-TV should occupy an important place in the activity of non-governmental associations.

Shortages in water supply of the cities are noticed. Almost all the cities are supplied 2-3 times a day with water for a period of time of 1-3 hours for each supply. There are many towns the pipelines of which have been amortized and leak considerable quantities of water in the internal network with frequent contaminations and in some cases with widespread of gastro-intestinal disorders and infections. The situation is gravier in the cities of Tirana, Kruja, Korca, Gjirokaster etc. The main reasons for such a situation , besides our internal problems, remain the lack of funds.

We have briefed many international organisations and states , as WHO, UNDP, European Community, World Bank, International Monetary Fund, Germany, Italy etc., on the aforesaid situation. They are contributing a great deal in this transition period full of difficulties for our country. As far as we know there exists a project "Improvement of drinking water quality" by WHO, and work has started or talks are under way regarding concrete projects with the World Bank, Germany and Italy on improving the water supply of the towns Durres, Tirana, Kavaja

Rrogozhine, Kukes, Kruje, Korçe, Krume, as well as the sewerage of Pogradec town. Meanwhile we cannot say we need not assistence regarding the problem of supplying the countryside with water.

Special concern is dedicated also to the pollution of surface waters from the urban and industrial wastes. None of the sewage discharges undergoes the cleaning process and bacterial pollution of certain river areas are noticed, even patogenic micro-orgnaisms (salmonella shigella) have been isolated from these waters.

Some rivers are polluted also from the industrial discharges of metallurgical; petrochemical, chemical, paper plants etc. The most serious pollution is witnessed in the rivers of Tirana, Elbasan, Fier Shkoder, Berat etc.

For the assessment of drinking and surface water pollution, paralelly with the problems for cleaning discharges or renewal of technology, we are aware of the necessity to have more qualified specialization.

Wastes' gathering and processing, sewerage discharging are not carried out in the countryside according to the sanitary conditions. Sewage is generally gathered in septic pits not conform to sanitary requirements. In the conditions of transition onto private ownership, these issues might be aggravated at the initial stage. The contribution of our society for the realisation of simple methods of wastes and compostation processing, which is accompanied also with well-known economic profits and agricultural yields, might be fruitful in the near future, although of minor proportions at the initial moment.

SECOND ISSUE:

The organisation, functioning and activity of NGO-s in Albania, something which means that they are guaranteed by the state for their legitimacy, is based on the law no.2362, dated 16.11.1956, "On social organisations not pursuing economic goals". The law allows their creation upon the adoption by the ministries, municipalities

of the towns .It stimulates the activity for social-cultural growth of the country in various fields.It permits the coordination of the activity of the state organs and scientific institutions, determines the founding and ceasing conditions of associations, it determines also the conditions when they are controlled by the state and when different members may be expelled.The most important moment of the procedure for NGO creation is the compilation and presentation of full documentation (statute,programme, the purpose,the ways to attain this purpose, number of members etc).From the founding moment, NGO-s are entirely independet in their activity.They are linked with other associations within and outside the country, they put up problems the solution of which has to do with the goals they aim at;etc.

Up to three years ago the NGO, number in our country has been limited. At present there are 10 association that conduct their activity in different directions of the environment and hygiene.

Our association has been created in July 1991 and has 400 members, including University pedagogues, scientific workers in the environmental field, that of hygiene, hydrology, hydrotechnics, biology, chemistry etc.Our association is a REC member (Regional Environmental Center) - Budapest and has established relations with several associations as with "ile Contact - Netherlands, Globe - 2000 - Vienna Ecoglsnost - Sofia,as well as with other associations in Germany, Italy, Lithuania, Romania, the Czech Republic, Macedonia etc.Our association attended the Paneuropean Conference on Environment (Lucerne - Switzerland, 1993).In September this year a seminar is going to be held in Tirana on the NGO functioning, with the investments of the German Foundation.

Our association has established close links also with the Environmental Protection Committee, treating problems according to an evident syncronization.Henceforth, a scientific session was held by our association in May 1992.It was financed by the Enviromental Protection Committee.

The short time of our activity, the relatively little experience regarding the roles of NGO-s in the development of society's projects and decision-making related to water, sanitation and envi-

ronment related issues, oblige us to profit as much as possible from the experience of this seminar.Voicing the opinion of my colleagues and legal specialists, we think that the law on NGO-s in our country should be renewed and become more complete.

On the basis of the law no.7695, dated 7.4.1993, the People's Assembly issued the law"On foundations".The foundations are created to attain social or economic beneficial goals that comply with the fundamental interests of the Republic of Albania, the issues treated by this seminar included.Its adoption is made by the respective ministry or respective district chairman after having proved that documentation is legally valid.The law defines the juridical local and foreign subjects, founders of the foundation, the financial resources, (the state or donators), the purpose which the foundation has been founded for, the statute, the conditions related to the links with other foundations, the way of its running, its registration, solving of disagreements on the wealth and destination of the means on the agreement's expiry, the creation of representations when seats are outside the country, etc.

THIRD ISSUE/

The problem of cooperation and partnership in joint projects between local authorities and national ones,private companies, universities, training centres and international agencies on drinking water and sanitary issues, as it might be gathered also from the aforesaid survey remains an issue for which this seminar would be of immense help.Actually we are at the beginning of these processes, at the beginning of cooperation and collaboration with European and other countries, hence this topic is of special interest and concern to us.

In the above survey we strove to provide unhesitatingly the country's situation related to questions treated by this seminar, the legal aspects of NGO-s , their current position.We'd be very grateful to the organisers, sponsors of these issues, international organisations and various states could realistically contribute to build

the inner capacities of our country, in order to be integrated with dignity in the civilised life of democratic states.

Thank You!

Diana Iskreva-Giaurova
Project Coordinator
Community Environmental

COMMUNITY ENVIRONMENTAL ACTION PROJECT IN STARA ZAGORA

Stara Zagora is a large municipality of approximately 220 000 people in the agricultural heartland of Bulgaria. The environmental problems of the community typify those of many Bulgarian communities, including contamination of the Bedechka river due to lack of sewage treatment facilities for household and industrial waste, contamination of agricultural soils due to precipitation of heavy metals, and air pollution due to heavy dependence on low quality coal, among other problems.

Government and financial resources to address these problems are extremely scarce and will continue to be so. Under recently passed laws, Bulgarian municipalities have been given greater responsibilities for managing their environmental problems, and will be held accountable by the public for addressing these problems. At the same time, Stara Zagora is facing a severe economic problems as unemployment increases and prices rise. This economic crises is gradually shifting the public attention away from the need to protect the environment.

Stara Zagora, along with other Bulgarian communities, lacks the experience with a democratic process for assessing the relative significance of environmental problems and prioritizing actions needed to reduce pollution and manage its natural resources in the most cost efficient manner. This prioritization process is essential if Stara Zagora is to direct its scarce financial resources to the most pressing environmental needs. It is also essential to lay the foundations of democratic-decision making, to promote public awareness and involvement, to build the capacity of NGOs so that they could act both as watchdogs and active partners in environmental policy formulation. Such process is possible in Stara Zagora because the local government, the NGO Ecoglasnost and the public are being

sufficiently informed about the state of the environment and the possible solutions to environmental problems through this Project. The available information is fragmented and scattered among a number of institutions. Their responsibilities overlap in some cases, while huge information gaps exist in some areas. The information is often in a format that cannot help decision-makers in ranking the problems so that the most severe ones are addressed first in the most cost-effective way. Since information is so fragmented and incomplete, it is often used to overemphasise or underestimate certain problems.

Furthermore, Stara Zagora is facing the challenge of how to address environmental problems in the context of privatization of industry and the shift toward a market-based economy. We believe that environmental actions of the Project embody the principles of sustainable economic development. We are hopeful that this Project will provide the opportunity to identify and implement these action strategies to the benefit of the citizens of Stara Zagora.

The Stara Zagora Environmental Action Project serves as a demonstration project for the national government and other large Bulgarian municipalities in terms of bringing together data collection and monitoring institutions, involving the public in decision-making, setting environmental priorities and making environmental protection investments in a market economy. Project results are disseminated through targeted seminars for elected officials, NGOs, and industry leaders; T.V., radio, and printed media; and publication of documents which chronicle the Stara Zagora experience.

The Stara Zagora Environmental Action Project is an 18-month long project wherein local residents, local government officials and experts identify, analize and in the future will rank the environmental problems facing the municipality and will develop an Environmental Action Plan for addressing these problems. Specific steps to improve Stara Zagora's environment will be implemented in the final stage through a $50 000 start-up grant.

Stara Zagora Environmental Action Project has the goal to establish a process for data collection, identification, analysis and prioritization of environmental problems within the context of limited financial resources; to institutionalize a more efficient local government decision-making process in light of greater municipal responcibilities for managing environmental problems and economic restructuring; to improve the quality and flow of information from the national ministries and regional environmental and health inspectorates to the municipality to improve the environmental management decision-making capabilities; to help these institutions better perform their role in serving the communities; to utilize methods for incorporating public opinion and making democratic decisions as an effective means of building consensus and obtaining support for environmental solutions; to provide a mechanism for non-government organizations and industries to participate constructively in environmental policy formulation and implementation; to implement low-cost and cost-effective solutions to improve environmental protection through better management practices, pollution prevention, waste minimization, and improved afficiencies.

We believe the Project will involve local, regional and national officials, non-governmental environmental organizations, industry representatives and community members in identifying and ranking environmental problems and in developing environmental clen-up strategies through the establishment of two citizen committees.

The Project utilizes a methodology known as "comparative risk analysis" which involves an adroit mixture of scientific data and public opinion to prioritize environmental problems.

The comparative risk process requires the collection and analisis of environmental and public health data to assess the risks associated with each environmental problem. The citizens committees identify all information sources, collect the available information and approach research and science institutions

for analysis of that data so that it speaks to the committee members and decision-makers. In this process various institutions that now work in isolation or in some cases in confrontation will have to come together and learn to respond to public requests for information. As is known environmental information was cofidentail till recently in Bulgaria. Though new laws have been endorsed, some institutions still stick to the old ways. The public on their part are often unaware of their rights and do not feel confident in demanding information. Going through this part of the process the citizen committees will build a bridge between the government institutions and the public in the area of information dessimination.

The next step is an assessment by the citizen committees and the public of what they consider to be the most serious environmental problems facing the community, andthen a ranking of environmental risks based on community values and scientific data. This is the stage of public outreach and involvement in making decisions that will be the foundation of a community environmental management policy while the citizen committees will be basically responsible for the informing of public and getting their input for the purposes of ranking, steps will be also taken to measure public awareness by implementing some low-cost recycling, water conservation programs or energy conservating programs that will require their active participation. The NGOs will be the principle parners of the citizen committees at this stage.

Once these environmental problems have been prioritized, specific strategies for addressing them will be examined and developed for Stara Zagora, and incorporated into an Environmental Action Plan. This plan will be presented to the City Council for approval, it will become its policy and clean-up strategies will be implemented.

Mr Lay Vladimir
NGO Green Action Zagreb, Croatia (Chorwacja)

THE ROLE OF NGOs IN WATER PROTECTION ACTIVITIES

/abstract/

1.

The environmental problems in Central and Eastern European countries (CEE) can be solve only if *human resources* will be much more productive then in past period. The civil society, particular informal groups of people organized through nongovernmental organizations (NGOs) activities and local communities belong to such human recourses from which improved practices better results can be expected.

The clear drinking water belong to *the elementary needs* of inhabitants in CEE countries too. NGOs and grassroots groups which are in process of development in CEE region (one of the elements of pluralism and democracy!) are forms of horizontal social activities, generally very close to the needs of inhabitants, which can cooperate with other sectors in process of efficient solving of different environmental issues, including protection drinking water, adequate sanitation etc.

2.

The NGOs capacities for environment activities (basic conditions of work, skills, management, interactions between NGOs and local communities, etc.) are pretty weak in CEE countries. The development of basic communications and skills ("know-how"); concrete action plans and concrete steps for capacity enhancement have to be articulate and made in next years.

3.

The social roles of informal groups / NGOs on environmental field are:

a. the permanent clarification of actual needs (including needs related to drinking water, health, etc.) of

inhabitants and advocacy of their needs and motivations in broader society and formal state structure; b. organization of community involvement of inhabitants to decision making process about solutions and creating possible consensus; c. everyday practical "production of importance" of environmental issues (including water protection issues) which [illegible] are characterized with transitions and serious economic troubles; d. acting in mode of "social preassure groups" and developing of environmental lobbing processes into the frame of formal decision making processes with purpose of better and faster solving concrete different problems; e. development of informations, knowledges and practical "know-how" for solutions for solving precise environmental problems including organization of import and culturally adequate "translation" of this knowledges in CEE "domestic" conditions.

The CEE societies and states should have to have interest to help to CEE NGOs to develop presumptions for fulfilling mentioned roles because of positive societal benefits of their activities.

4.

The main environmental problem of Zagreb (beside inadequate waste management) is unsuccessful protection of natural reservoir of drinking water located just under the urbanized area of city of Zagreb. A lot of sources of drinking water are simply so much polluted that they are destroyed mostly by industrial polluters. The dangerous processes which [illegible] water on south edges of town are going on.

NGO Green Action Zagreb start with permanent outinstitutional *environmental education*, including topics like state and solutins for drinking water reservoirs in Zagreb. More details about it in presentation on Seminar.

International Seminar
"Involvement of the Civil Society in Water and Sanitation"
Warsaw, Poland, 17-19 May 1993.

THE STRATEGY OF REORGANIZATION AND FINANCING POLICY OF ESTONIAN WATER MANAGEMENT ENTERPRISES

Ain Lääne and Maret Merisaar

Submitted by NGO *ESTONIAN GREENS*

Pollution of aquatic environment is tensely related to the developement of sewage systems and construction of treatment plants. If in the 70.-ies in the previous Soviet Union the problems were tried to be solved by building sea outlets, then nowadays, it has been accepted, that environment protection starts in simultaneous limitation the amounts of pollutants already in the sources - i.e. in the course of industrial production processes.

One of the first steps in the complex of measures taken must be reconstruction of water and sewage systems and improvement of exploitation, to limit the amounts of pollutants that are conducted onto the treatment facilities.

It is essential to be well aquainted to the financing system and to have the appropriate quarantees before starting the financing. While in the previous Socialist countries the quarantee was the state itself, then transferring processes to market economy enable to establish direct contacts between financing organizations and municipal enterprices as well as the shareholders unions that are being founded.

Significant structural changes are going on in the water management and sewage treatment enterprises as well as in the whole republic.

The two most important water management and sewage treatment enterprises in Estonia are Tallinn Water Works Authority (TWWA) and the state enterprise Estonian Water Works (EWW).

EWW serves about one-third (ca 500 thousand people) of the Estonian population living in 44 towns and villages.

The basic elements of the water supply system and waste water collection system are summarized in the table below.

Table 1

THE BASIC ELEMENTS OF THE WATER SUPPLY SYSTEM AND WASTEWATER COLLECTION SYSTEM CONTROLLED BY ESTONIAN WATER WORKS (EWW)

Amount of water pumped	220,000 m^3/d
Number of working artesian wells	386
Depth of artesian wells	15-460 m
Number of two-stage pumping stations	43
Number of three-stage pumping stations	3
Water towers	32
Total length of water distribution system	966 km
Quantity of wastewater collected in sewers	225,208 m^3/d
Quantity of wastewater treated	143,515 m^3/d
Number of Treatment plants	29
Number of biological treatment plants	22
Number of biological ponds	4
Number of mechanical treatment plants	3
Number of sewerage lift stations	90
Length of sewer network	920 km

TWWA serves also about 500 thousand inhabitants living in Tallinn and its suburbs.

The basic information is presented in Table 2.

Table 2

THE BASIC INFORMATION ON WATER SUPPLY AND WASTEWATER COLLECTION AND TREATMENT SYSTEMS CONTROLLED BY TALLINN WATER WORKS ASSOCIATION (TWWA)

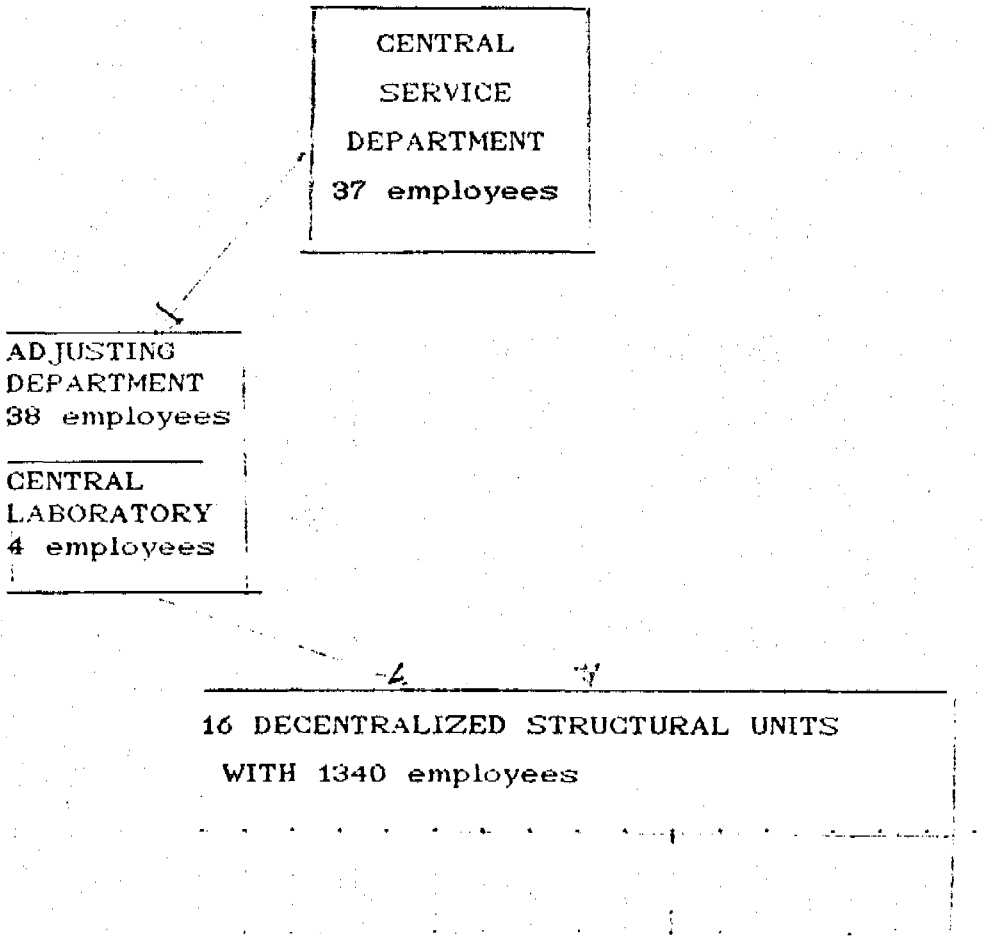
1. Water consumption in the city of Tallinn	257,600 m^3/d
2. Length of the water supply system	....562.5 km
3. Quantity of waste water treated	350,000 m^3/d
4. Length of tunnel collectors	30.0 km
5. Length of sanitary and combined seweres	770 km
6. Number of sewerage lift stations	34

Only recently water supply and wastwwater disposal services were provided to the City of Tallinn by a state owned enterprise TWWA. New laws since independence have transferred responsibility for the Water Works Authority and ownership of water system assets from the state to the city.

EWW is still a state enterpise.

PRESENT STRUCTURE OF THE STATE ENTERPRISES

ESTONIAN WATER WORKS



A The Central Department of EWW provides technical and procurement support to structural units and is also responsible for financial activities.

B. Adjusting Department and Central Laboratory provide installation of equpment, specialized equipment service and laboratory and monitoring services.

3. The 16 Structural Units operate as semi-independent, self managed water service units serving a municipality or a group of small municipalities or towns.

THE MAIN DIFFICULTIES IN THE EXISTING SYSTEM are the following:

1. Relationship between the local government and public utility was very weak.

2. The municipalities are said to have been unhappy with centralized system feeling that the ownership and control over these assets should have been left with the municipalities.

3. As a rule, the finances given by the central government were not enough for construction, rehabilitation, operation and maintenance of the systems.

4. Division of finances by the Central Department between municipalities was very often tensely related to personal contacts.

5. Levels and quality of service were very low and responsibility was divided uncertainly.

The structure of EWW has become ineffective for solution of local problems for carrying out the political and economical changes.

Central financing has reduced drastically during the last years and today EWW is working as a self management company and must pay taxes to the government.

For these reasons in 1992 the Board of EWW decided to dissolve the centralized structure of EWW.

Taking into account the existing legislation in Estonia, the restructuring of EWW should be organized in two steps.

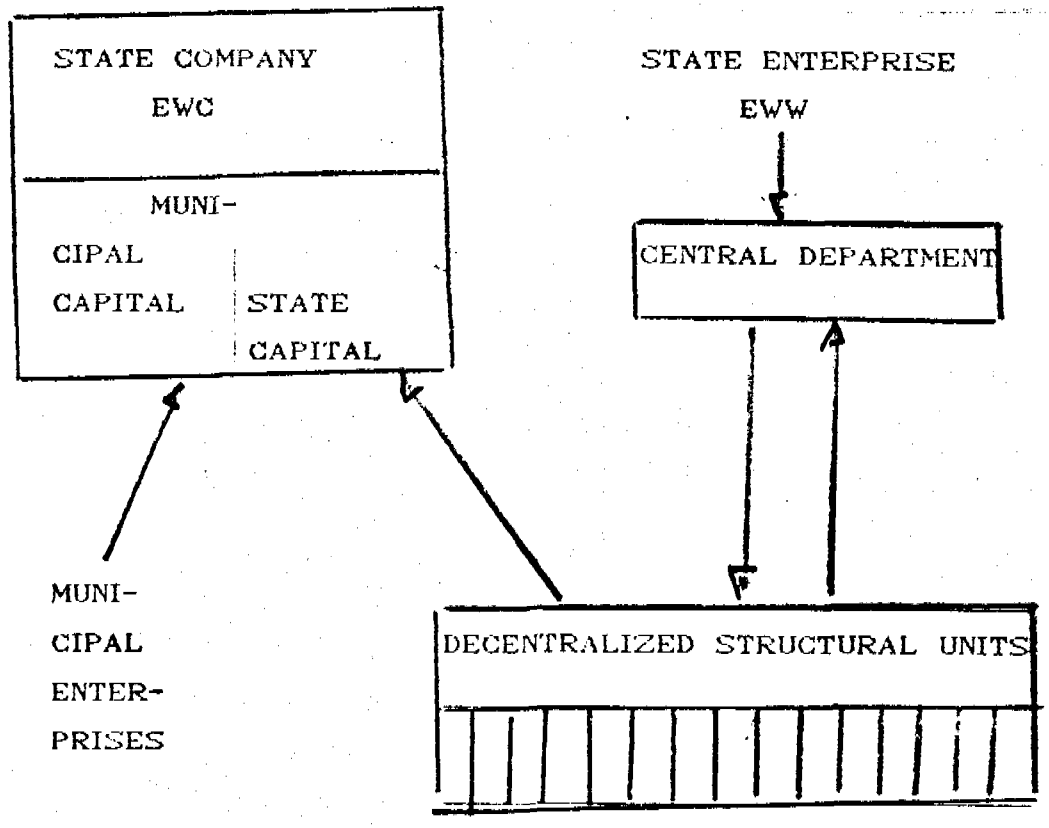
The first step is transferring stage. On the basis of Adjusting Department and municipal capital the new company (Estonian Water Company - EWC) should be established. At the same time municipalization of structural units is being carried out.

The new proposed structure for interim period is depicted in the next scheme.
(see next Figure)

The newly founded company shall serve the new municipal enterprises as well as still existing decentralized structural units on the basis of contracts.

EWC should give technical support, help in the field of procurement and installations of equipments and organize laboratory and monitoring servies asked by the municipal enterprises.

PROPOSED STRUCTURE OF THE WATER MANAGEMENT ENTERPRISES



In the second step together with the increase of the number of municipal enterprises the role of state in the company decreases, thus creating good conditions for intensified financial activities and involvment of foreign banks and private capital.

As the result of reorganization, more than 15 water management municipal enterprises will be founded in Estonia, the biggest of which will be Tallinn Water Works Authority.

All these enterprises will face common problems.

1. Water and sewage systems and establishments (constructions) are worn down and need big capital investments for updating.

2. Together with establishing world market prices, the service quality also should improve up to the world level, and that brings along a sharp increase of water tariffs.

3. Together with increase of the wages of the exploitation staff, their skills also should improve, and for that complementary education cources should be organized.

It is not possible to determine the priority of the aforementioned problems. That depends on the object under discussion. At the same time it is evident, that these problems can be solved, if definite finances are available.

The basic income of a municipal enterprise in the new conditions will be formed on the bases of the prices of water and sewage services.

The changes in those prices in Tallinn in the recent years are depicted in the following table:

Table 3

WATER AND WASTEWATER TARIFFS IN THE CITY OF TALLINN

(in SUR/m^3)

Year	Water			Wastewater		
	Inhabitants	Public utilities	Industry	Inhabitants	Public utilities	Industry
			rbl/m^3			
1987	0.04	0.05	0.30	0.015	0.015	0.40
1989	0.04	0.05	0.05	0.015	0.015	0.50
1990	0.04	0.05	0.80	0.015	0.015	0.90

		1 EEK/m^3	1 EEK = 10 rbl	
1992				
1.02	0.55	5.20	0.65	5.20
1.04	1.65	21.10	1.75	15.30
20.06				
	0.20	2.25	0.20	1.70
1.09	0.50	2.90	0.53	2.17
1993				
1.03	0.50	4.35	0.80	4.53

Increase in prices has been significantly quicker than that of the salaries and pensions in the recent years. Payments for water and sewage treatment services together with central heating make up the essential part of mean income. The adopted water tariffs cover only the exploitation costs. It is not realistic to rise the price of water to solve the problems of capital expansion including rehabilitation today. Governmental contributions and subsidies are forseen only for two, three main projects like Tallinn wastewater and water treatment plants

New financers must be found for solving the remaining problems.

That presumes a tense cooperation between financial organizations and loantakers in elaborating joint projects, that, in addition to the technical side, would also involve finance system regulations.

We have started activities into this direction. A mixed joint stock of shareholders is being founded on the bases of private and municipal capital

An overview of the main technical and financial needs in Estonia has been determined with the local and international prefeasibility studies and only some points must be specified still.

TWWA and EWC are ready to accept bigger finacial aids and loans and smaller projects can be realized by the municipal enterprises already.

At the same time it should be notified, that the rate of the work depends on political decisions on local as well as on the governmental levels.
Estonian experts on water management are on the opinion that regulations in water management are the starting point for the developement of our economy as a whole, as that quarantees employment in carrying out the environmental projects.

Heino Levald

LES PROBLÈMES DE L'APPROVISIONNEMENT EN EAU EN ESTONIE

1. Caractéristique générale de la République

L'Estonie se trouve sur une plaine au sud du golfe de Finlande. La surface de la République est de 45 000 km2, avec 1,6 millions d'habitants.

Avant la seconde guerre mondiale l'économie de l'Estonie était basée sur l'agriculture avec environ 150 milles fermes dont la surface moyenne était de 30 ha. Les habitants du milieu rural constituaient environ 2/3 de la population et vivaient dispersés, principalement dans des fermes, mais aussi dans les villages autour des églises et les centres communaux.

Après les évenements des années 1939-40, l'Estonie était occupée par l'Union Soviétique et incorporée à celle-ci. Au cours des suivantes dix années, en résultat de la guerre et des déportations, la République a perdu environ un quart de sa population. En 1949 fut réalisée la collectivisation générale de l'agriculture qui changea rapidement l'image du milieu rural. Dans les années 196--70 la surface moyenne des exploitations agricoles est arrivée à 10 000 ha. Dans les grandes fermes dominait l'élevage des animaux. A la place des fermes se développaient des kolkhozes, dont beaucoup avaient un aménagement de genre urbain.

Dans les villes d'Estonie, l'Union Soviétique réalisait une politique de développement industriel rapide. On a construit de grandes entreprises de production de machines et d'installations (la plupart destinées aux besoins de l'armée), de l'industrie des mines, de l'industrie chimique, textile, alimentaire et énergétique, on a organisé une grande migration de personnes provenant de la Russie, Biélorussie, Ucraine et d'autres républiques de l'Union Soviétique. En résultat, la population dite

rusoparlante a augmenté en quelques décennies à 600 000 personnes, tandis que dans l'Estonie d'avant-guerre elle ne constituait que quelques pour cent. Actuellement, environ 70% de la population de la République habitent les villes, dont un demi million à Tallinn.

Depuis que l'Estonie a récupérée son indépendance en tant qu'État, le marché de l'Est, auquel était destiné environ 50% de sa production, s'est presque entièrement fermé pour elle. L'économie de la République se trouve en état de crise profonde et change rapidement sa structure, en essayant de se réorienter le plus vite possible vers le marché occidental. Dans le milieu rural, les grands kolkhozes et sovkhozes se transforment en de plus petites exploitations agricoles, renaissent les petites métairies et fermes.

2. Les problèmes d'approvisionnement en eau et de canalisation

2.1. Situation générale

Dans la République il y a peu de sources d'eau de surface et la plupart est contaminée. Pour cela, l'approvisionnement en eau potable est presque entièrement basé sur les eaux souterraines. Les uniques exceptions sont les villes Tallinn et Narva. Mais les ressources d'eaux souterraines sont aussi menacées de contamination et d'épuisement. Une exploitation économique des ressources d'eau et leur protection de la contamination constituent les principaux objectifs de l'activité dans le domaine de l'exploitation des ressources d'eau en Estonie.

On a introduit dans la République un système d'autorisations pour des prélèvements spéciaux d'eau, de payement pour l'utilisation des ressources d'eau et pour le fait d'y déverser de l'eau contaminée ainsi que de peines pour transgression des conditions fixées dans les autorisations pour l'utilisation des eaux. On a beaucoup fait dans le domaine du dépistage et de la réduction des sources de contamination des eaux, de l'introduction des stations d'épuration ainsi que du perfectionnement des

procédés technologiques dans le but de diminuer la consommation et la pollution de l'eau. On mène des travaux dirigés à assurer l'épuration des eaux d'égout dans les villes Tallinn, Pärnu, Kohtla-Järve, Tartu et autres.

Actuellement, de grands changements se produisent dans le développement de l'exploitation des eaux. Comme les prix de l'énergie et des matériaux ont haussé de dix fois, les dépenses pour l'eau et la canalisation ont augmenté, d'où un intérêt croissant pour économiser l'eau. La consommation de l'eau a aussi baissée en raison de la diminution de la production durant la crise. Malheureusement, ceci est bien souvent accompagné d'une diminution des fonds destinés au maintien de l'activité des stations d'épuration ainsi qu'à la construction de nouvelles installations de ce genre.

2.2. Les problèmes de l'approvisionnement en eau du milieu rural

L'approvisionnement du milieu rural en eau potable est presque exclusivement basé sur l'eau souterraine.

L'existence de réseaux de distribution d'eau, que possède la plupart des colonies et les fermes d'élevage des animaux, a mené à une augmentation de la consommation de l'eau ainsi qu'à la nécessité de construire des canalisations. Comme il y a une concentration d'exploiteurs d'eau relativement haute et qu'il n'existe que des petites rivières et autres cours d'eau, il est difficile d'assurer une propreté requise des égouts. On a entrepris de grands efforts dans la République pour résoudre ce problème.

Ces derniers temps, dans beaucoup d'endroits les conditions d'approvisionnement des colonies en eau se sont nettement empirées. Les travaux d'amélioration ont provoqué le dessèchement ou la contamination de nombreux puits. Dans beaucoup d'endroits, les couches inférieures des eaux souterraines ont également été contaminées, tandis que l'approvisionnement en eau s'effectue à l'aide de citernes. Pour améliorer la situation, dans beaucoup de colonies il est nécessaire de moderniser les

systèmes d'approvisionnement en eau et la canalisation, tandis que dans certaines colonies il n'y a aucun système de ce genre.

3. Recherches relatives aux problèmes d'approvisionnement en eau.

Durant les dernières décennies on a mené en Estonie d'amples travaux de recherche relatifs aux problèmes de l'approvisionnement en eau et de la canalisation. La Convention de Helsinki sur la Protection du Milieu de la Mer Baltique a constitué un fort stimulant. En Estonie, on a accordé beaucoup d'attention aux questions relatives à l'épuration des égouts, dont l'élaboration et l'introduction de petites stations d'épuration.

Dans les années quatre-vingts, un groupe d'étude dirigé par l'auteur de la présente conférence a élaboré une étude complèxe technico-géologico-économique des sources et des systèmes d'approvisionnement en eau de 37 villes et colonies d'Estonie ainsi que d'un district dont la surface constitue 8% du territoire de la République. L'étude avait pour objectif une appréciation économique des ressources d'eau ainsi que l'élaboration de propositions relatives à l'amélioration de l'approvisionnement en eau et l'augmentation de son rendement économique. Dans le cadre de ces travaux on a élaboré des bases méthodiques de l'appréciation économique des ressources d'eau et on a regroupé, étudié et classifié les matériaux relatifs aux indices techniques et économiques pour 2000 puits et autres sources d'eau. Les résultats des travaux ont été présentés dans la monographie: H. Levald "Le rendement économique du prélèvement de l'eau douce souterraine", Moscou, ed. "Niedra", 1990.

4. Vision future

En résultat des transformations qui se produisent dans l'économie de la République, les tendances de développement des systèmes d'approvisionnement en eau changent également. Ceci concerne plus spécialement les terrains ruraux.

Le démembrement des grandes entreprises et exploitations agricoles en plus petites ainsi qu'une renaissance des fermes dans le milieu rural provoquent une diminution de la concentration de la production et de la population. Chaque consommateur est obligé de couvrir la totalité des frais relatifs au prélèvement de l'eau, à ses dépenses d'eau et à sa contamination ce qui contribue à économiser l'eau. Tout ceci diminuera les chargements des sources d'eau, la quantité des égouts et favorisera la prise de décisions plus rationnelles relatives au développement des systèmes d'approvisionnement en eau existants et à la création de nouveaux systèmes.

Dans la mesure où la situation économique du milieu rural continuera à s'améliorer, les colonies, les centres industriels et les fermes veront apparaître la nécessité de construire des systèmes d'approvisionnement en eau plus perfectionnés, d'utiliser les déchets, d'éliminer les égouts. La science mondiale et la pratique dévoilent suffisament de possibilités et d'exemples de résolution de problèmes semblables. Il suffit de choisir les solutions économiquement intéressantes et adéquates aux conditions concrètes qui se présentent. Cependant, selon le démontre la pratique, dans l'élaboration des voies de développement des systèmes d'approvisionnement en eau et de projets adéquats, l'aspect économique du problème est peu discerné. La raison d'une telle situation vient en général du fait que les auteurs du projet manquent d'informations suffisantes sur l'élaboration d'analyses de l'investissement adéquates dans le domaine des systèmes d'approvisionnement en eau et de la canalisation, liées étroitement à l'utilisation de la nature et à l'écologie. Les possibilités d'application de différentes formes de propriété et d'initiative ainsi que l'octroi de crédits préférentiels sont peu mis à profit.

Il semble que l'une des missions les plus actuelles dans le domaine de l'approvisionnement en eau, entre autres du milieu rural, consiste à élaborer des prescriptions méthodiques relatives au choix des meilleurs systèmes d'approvisionnement en eau et de canalisation du point de vue économique pour des destinataires précis ainsi que pour des régions

entières, en incluant les facteurs écologiques et sociaux, tout comme la propagation d'informations adéquates et une aide pratique dans le domaine. Je pense que le fait d'appuyer ce genre de travaux pourrait constituer un apport considérable de la Fondation pour le Développement de l'Approvisionnement en Eau dans la solution des problèmes actuels dans ce domaine aussi bien en Pologne que dans d'autres pays. L'auteur de la présente conférence possède des expériences tant scientifiques que pratiques dans ce domaine et pourrait par conséquent participer d'une manière active dans ces travaux.

Heino Levald

WATER SUPPLY PROBLEMS IN ESTONIA

1. General Characteristics of the Republic

Estonia is situated on the plains stretching along the southern coast of the Gulf of Finland. The area of the Republic is 45,000 sq km and the population is 1.6m.

Before World War II the leading sector of the economy was agriculture. It was based on some 150,000 khutors (detached farmsteads) of an average area under 30 ha. The rural population made about 2/3 of the total and lived in dispersion, mainly in khutors, in villages clustering round churches and in commune centres.

Following the events of 1939–40, Estonia was occupied and annexed by the Soviet Union. During the ten years that followed the Republic lost about one fourth of its population. In 1949 the authorities imposed general collectivisation of agriculture which rapidly changed the picture of the rural Estonia. In the 1960's and 1970's the average size of farms reached 10,000 ha. The major production profile of large farms was stock-breeding. Detached farmsteads were replaced by larger settlements, kolkhoz centres, many of which featured urban type of development.

In the Estonian towns, the Soviet Union implemented its policy of fast industrial growth. Large enterprises were established, mainly in the machine and equipment building sector (with a prevailingly military bias), as

well as in the mining, chemical, textile, food processing and power engineering industries. A mass influx of population was arranged from Russia, Byelorussia, Ukraine and from other republics of the Soviet Union. Consequently, the number of the so called Russian-speaking population increased during several decades to 600,000, while in the pre-war Estonia it only accounted for a few per cent. Now about 70% of all the population live in towns, including more than half a million in Tallinn.

In consequence of the restoration of Estonia's state independence, the eastern market, where about 50% of the Republic's output used to be exported, was severed almost completely. The country's economy has been undergoing a severe crisis and therefore rapid transformation processes are now in progress, seeking to switch to the Western market orientation as soon as possible. In the rural areas huge kolkhozes i sovkhozes have been reorganizing into smaller units, and khutor and family farms are reestablished.

2. Water Supply and Drainage Problems

2.1. Background

Surface waters in the Republic are scarce and mostly polluted. Therefore drinking water supply is based almost entirely on underground sources. The only exceptions are the cities of Tallinn and Narva. However, also the groundwater resources are threatened by pollution and exhaustion. Thrifty exploitation of the existing water resources and protection against their pollution are the principal targets in the area of water economy in Estonia.

A licence system was introduced in the Republic to control special uses, alongside charges for exploitation of water resources and for wastewater discharge. Fines are imposed for non-compliance with water exploitation licences. A lot has already been done in respect of identification and elimination of water pollution sources, implementation of sewage treatment projects and improvement of technological processes in order to reduce water consumption and pollution. Work is going on aimed to provide sewage treatment plants in the cities of Tallinn, Pärnu, Kohtla-Järve, Tartu and others.

Major changes are now affecting the development of water economy. As the prices of energy and materials have increased ten times, water and sewage costs have also gone up, stimulating an interest in water conservation. Water consumption has also been dropping due to the decline in production under the present crisis. Unfortunately, at the same time this is accompanied by reduction of funds necessary to keep the existing sewage treatment plants in operation and to build new facilities of this kind.

2.2. Water Supply Problems in the Rural Areas

Drinking water supply in the rural areas is almost entirely dependent on groundwater.

The existence of water supply systems in most settlements, as well as stock-breeding operations have led to a significant increase in water consumption, and made it necessary to build sewage systems. Given a relatively high concentration of users, and the fact that there are only small rivers and other watercourses in the country,

it is difficult to ensure the required purity of wastewater. A number of efforts have been made in the Republic to solve the problem.

In many locations the water supply conditions have seriously deteriorated recently. Many wells are dried out or polluted due to land reclamation projects. In some places also lower water horizons have been either exhausted or polluted, and water is supplied by tankers. To improve the situation, many settlements will need their water supply and sewage systems to be modernized; besides, some of them have no such systems at all.

3. Water Supply Research

Over the last several decades large-scale research has been conducted to investigate the water supply and sewage problems. What provided a powerful stimulus was the Helsinki Convention on the Baltic Sea Environment Protection. Considerable attention was given to the issues of sewage treatment, including development and implementation of small treatment plants.

In the eighties, a research group headed by the author of this paper made a comprehensive technical, geological and economic research of resources and water supply systems in 37 towns and settlements in Estonia, as well as in a territory of one district of an area of about 8 per cent of the total area of the Republic. The objective of the research was to make an economic assessment of water resources and to develop proposals aimed to improve water supply and to enhance its economic efficiency. Under the project, a methodological basis was

elaborated for economic assessment of water resources, and material was collected, described and summarized, concerning technical and economic specifications for about 2000 boreholes and other water sources. The results were summarized in the monograph: H. Levald "The Economic Effectiveness of Fresh Groundwater Acquisition", Moscow, edited by Niedra, 1990.

4. A Forecast

The changes affecting the economy of the Republic have also lead to changes of development trends in the water supply sector. This mainly concerns the rural areas.

The disintegration of large enterprises and state farms into smaller units and the renaissance of the khutor in the country means deconcentration both in terms of production and population. The shift of all the water supply costs, water charges and water pollution fines to the individual users is a major contribution to water conservation. All these measures are bound to decrease the water source loading and the wastewater volume, and will certainly be conducive to more rational decisions involving the development of the existing water supply systems and development of new ones. In line with the improvement of the economic situation in the rural areas, it will be necessary to provide more efficient systems of water supply, waste disposal and wastewater discharge for settlements, industrial facilities and khutors. World science and practice offer a number of possibilities and examples of similar problems solved. It only necessary to

select suitable and economical proposals for each particular case. However, as practice shows, research on development targets in the water supply sector and relevant projects fails to provide a satisfactory assessment of the economic aspect. In general, the reason for this is the fact that designers lack the sufficient knowledge necessary to conduct adequate investment analyses in the area of water supply and sewage systems, in close relation to the issues of exploitation of the natural environment and ecology. Insufficient use is made of the opportunities offered by various forms of ownership and entrepreneurship as well as preferential lending.

It seems that one of the most immediate tasks to be tackled in the water supply sector, including the rural areas, is to develop methodical recommendations concerning the choice of optimum economic solutions for water supply and sewage systems for particular facilities and for entire regions, taking into account ecological and social factors, as well as to popularize relevant information and provide practical assistance in the area. I believe that by rendering support to this type of work a considerable contribution could be made by the Foundation for Water Supply Development to the solution of the current challenges in the sector both in Poland and in other countries. The author of this paper, who has both scientific and practical experience in the area concerned, could provide an active input to such an effort.

Abstract of the presentation for the International Seminar WSF

Lecturer: Mr. S. Varró dipl.ing.
manager of the Souther Unit of Budapest Waterworks
member of the Hungarian Hidrological Society

A b s t r a c t

1. The short story of the water supply in Budapest

The Hungarian capital was united from three small towns into one metropolis in the last century. Two parts of them had already had some kind of waterwork. The first main development was achieved at waterworks at the end of the XIX. century.
The great jump of the waterworks was performed in the fifties years, in spite of increasing of the population and the living conditions.
Water supply was later extended to the vicinity of Budapest.

2. Bases of drinking water produktion.

The most of the drinking water supplied to Budapest and vicinity is produced from wells, using the natural filtration on the riverside gravel, except about 25%, pumped directly from the Danube and treated by a treatment plant. The most important areas, wells was placed on, are the two large islands near Budapest.
On that areas different environmental conditions cause difference in water quality. In south area have to use treating.

3. Environment effects to drinking water quality.

The modern agricultural systems use more chemicals, that can causes to appear materials, dangerous for health in soil and groundwater.
In spite of the development of the towns, increase mass of sewage and rubbish. The treatment is solved not in every case.
Increasing pollution because of industry and traffic.

4. Waterworks effect to environment.

Taking out water from the soil by pumping a huge quantity of water from the wells every day causes a decreasing of piezometric pressure. The soil gets drier. The productivity of farms decreases, the much water claiming forests are casted back in growing.
Because of producing waterworks is necessary to broke the land, to cut down the forest, members of the environmental protection organizations often protest against it.
Sludge and other remain material arising in water treatment plants give pollution problems for operators and local authorities.

Tamás Simán

1. The short story of the water supply in Budapest.

The Hungarian capital united from three small towns into one metropolis in the last century. Two parts of them had already had some kind of waterwork. The first main development was achieved at waterworks in the end of the XIX. century.

In the last century in consecquence of epidemics breaking out due to insufficient water supply, the Magistrate of town Pest was induced to take necessary measures. An English water engineer, William Lindley was entrusted in 1867 to create the city water supply system.

The construction works were started on 15th april, 1868 and by the end of year the first well, the pumphouse and a part of the pipe system was finished and the test run on 30th december was succesful. The history of the Budapest Waterworks began on this date although the public supply started only on 1st november, 1869.

The construction works were finished by 1872, but even by the end of the year 1870 the rate of the supply reached 8000 m3/d, the total length of the pipe network was more than 80 km and the first service reservoir of a capacity of 11000 m3 completed.

The Budaújlak Waterworks with divided pressure zones, constructed by János Wein, who worked earlier with Lindley, supplied the Buda region, (highest altitude more than 400 metres above the Danube fixed level) was a century ahead of its time, and determined the future development of the network.

The construction of the Káposztásmegyer Waterworks started in 1892 and was completed in 1904. The so-called Main Plant was ranked at the turn of the century among the most up-to-date waterworks in Europe.

The water supply system, which had safely served the capital at the beginning of the century, proved to be insufficient as the number of inhabitants increased. The actual modernization, including electrification, started in 1927, and the necessary enlargements in 1930.

During World War II. the country, and especially the capital, suffered heavy air raids. The situation became more serious during the siege of Budapest. The damages caused and the lessening of the water supply could be corrected only in 1947.

New constrains on the system appeared in 1950, when seven towns and 16 villages were annexed to Budapest, increasing its area from 194 km2 to 525 km2, and the population from 1,095.000 to 1,658.000. It was a heavy task for the Waterworks to raise the relatively low supply level of these lately annexed districts.

The rate of development of the following times, although not always smooth, was increased and surpassed all that had happened in the 125 year-long history of the Waterworks.

Today excellent quality drinking water is supplied in the required quantity for more than two million inhabitants, for industrial and communal use, and moreover for 150.000 inhabitants living in 20 little towns and villages, at the vicinity of Budapest.

To perform these duties the Waterworks employs 600 engineers and office-clerks, and 2200 workers.

2. Bases of drinking water production.

The most of the drinking water supplied to Budapest and vicinity is produced from well, using the natural filtration on the riverside gravel, except about 25%, pumped directly from the Danube and treated by a treatment plant. The most important areas, wells was placed on, are the two large islands near Budapest.

At present, 790 wells of various types operate. Almost all of the wells (98.7%) are located at the river banks. The total length of the riverside sections where the wells are distributed is about 90 km.

The two main resources of natural filtered water:

- The Szentendre Island laying north of Budapest, with an area of 56 km2 is still the most important source of drinking water. Batteries of wells have been located here since the turn of century.
- The Csepel Island laying south of Budapest, with an area of 265 km2, but with less advantageous hydrogeological characters.

The water obtained from these resources is delivered via big sized low pressure mains (somewhere culverts constructed under the riverbed) to the three main pumping stations, namely at the north part of the town, to the Káposztásmegyer and Békásmegyer Plants, and at the south, to the Csepel Plant. These plants deliver through the mains to the reservoirs and pumping stations of the various pressure zones, from where the secondary mains and networks are fed, finally to the consumer's taps.

Nevertheless, the two islands show up as water ressource fundamental differences.

Relation to the Danube of the water reseved in the Pleistocene gravel of Csepel Island is substantially more complex than that observed with Szentendre Island. At many places, natural impervious dams separate the Danube bed from the large gravel formation. These - non-contiguous - dams may be attributed to the configurations of the substratum but may as well be the result of bottom siltation.

Connection of the Danube with ground water inside the islands is enabled only by the so called "gates" between them. Substantial difference is moreover that the aquifers to be found here are of more sandy facies and the so called running-out crustifications of iron and manganese can be observed on the grains of rock.

Advantageous would be a stabilized Danube water level at Ráckeve, however, its effect is worsened by the completely silted riverside.
Disadvantageous, however, the island's geographical location.

Until organic and inorganic components are in equilibrium in the material of the settling mud at certain riverbed sections of the Szentendre Island municipal sewages and sludges entering the Danube upstream the Csepel Island are in their composition organic and deteriorating.
Thus, also riverside siltation is of such a character and as a result of an anaerobic decomposition produces large quantities of organic substance significantly reducing the oxygen loading of the ground water.
The extent of reduction is results in the water's becoming reductive, which - due to the induced flow generated - dissolves while flowing towards the wells iron and manganese from the material of the aquiferous formation and continues to deliver it deteriorating thus the quality of the produced water.

Preliminary hydrogeological explorations and half-year long pumping tests enabled the limitation of Csepel Island areas producing water directly fit to drink and those wherefrom well-water can be forwarded to the drinking water network only after preliminary treatment.

The surface treatment plant

The surface treatment plant taking out water directly from the Danube is used as a peak plant for substitution of the missing rate of water which cannot obtained from the wells, during long low water level periods of the river.

3. Environment effects to drinking water quality

Waterworks usually prefer to have the drinking water sources near the centre of consumption because of saving contruction and operating costs. The pollution of environment by means of population increasing, industry and traffic, effects worse the drinking water quality.

The first plants was built on the fields near the town in the last century. These areas belong now to the residential area of the town. For examples:

Budapest has wells for public drinking water supply os the square near the House of Parliament, and on the riverside in the 3rd district being loaded by very dense population and heavy traffic by means of the main road between the road and holiday resorts.

The problem is like this at the surroundings of Budapest, where the new plants was built and some of them are under construction even now. Inhabitants are supplied with water in the little towns and villages by local waterworks, but the sewage is only solved particularly and in many case without any treatment.

Some wells had to give up because of increasing ammonium and nitrate in their water or bacteriological contamination.

The agriculture does other problems to water supply. During the last forty yaers socialistical government protected the consumption of fertilizers, insecticides and other chemicals. Farmers often used from these materials more then it would have been necessary.

Using these materials nearer then 150 ms from the wells, is prohibited by low, but on that areas, where the wells of the Budapest Waterworks are there is a loose sand and gravel under the arable humus layer, and the groundwater can easily flow through it.

Researches carried out by Budapest Waterworks point that, the pollution in ground water can arise the line of wells from 150 ms approximate in one month.

We are struggling for an extension at 500 ms (it means an arising time of one year), or 1000 ms (3 years arising time). The authorities in Hungary also effort to extend the protected area for waterworks, but they want to solve this problem on the duty and cost of waterworks.

In our oppinion this problem must be solved by the environmental protection policy of state.

I don't want to speak very much about industrial pollution. The pollution icreased together with the development of industry. The most dangerous cases are for our works, when oil or other carbon-hydrogens are poured directly into the water of the river. (photo enclosed)

The problem about the traffic is its approaching and crossing the protected areas. Vehicles emit continously oil and lead, and at an accident dangerous material can get out from the load at the area.

A motorway was built 3 years before crossing the Csepel Water Plant. The builder had discussions with the employees of the waterworks before and during construction.
There is a bridge over the waterworks area, and the rain water is conducted in close drainage from the road on the bridge. Near the protected area a reservoir was made in order to collect any dangerous fluid getting out in case of an accident.

4. Waterworks effect to environment

Taking out water from the soil by pumping a huge quantity of water from the wells every day causes a decreasing of piezometric pressure. The soil get drier. The productivity of the farms decreases, the much water claiming forests are casted back in growing.
Demages range mostly as far as 200 - 400 ms from the well, but in special case significant decrease in level of the groundwater was determined more then at 1 km.

Because of producing waterworks is necessary to broke the land, to cut down the forest, members of the environmental protection organizations usually protest against it.

Sludge and other remain material arising in water treatment plants give pollution problems for operators and local authorities.

New water treatment plant is planned with backwashing water recirculation and sludge treatment.

Some characteristic data of the year

— Yearly total drinking water production: 347,607.000 m^3

— Daily average consumption: 952.000 m^3

— Daily maximum consumption: 1,271.363 m^3

Breakdown of the sold drinking water by users:

— Households 59,2%

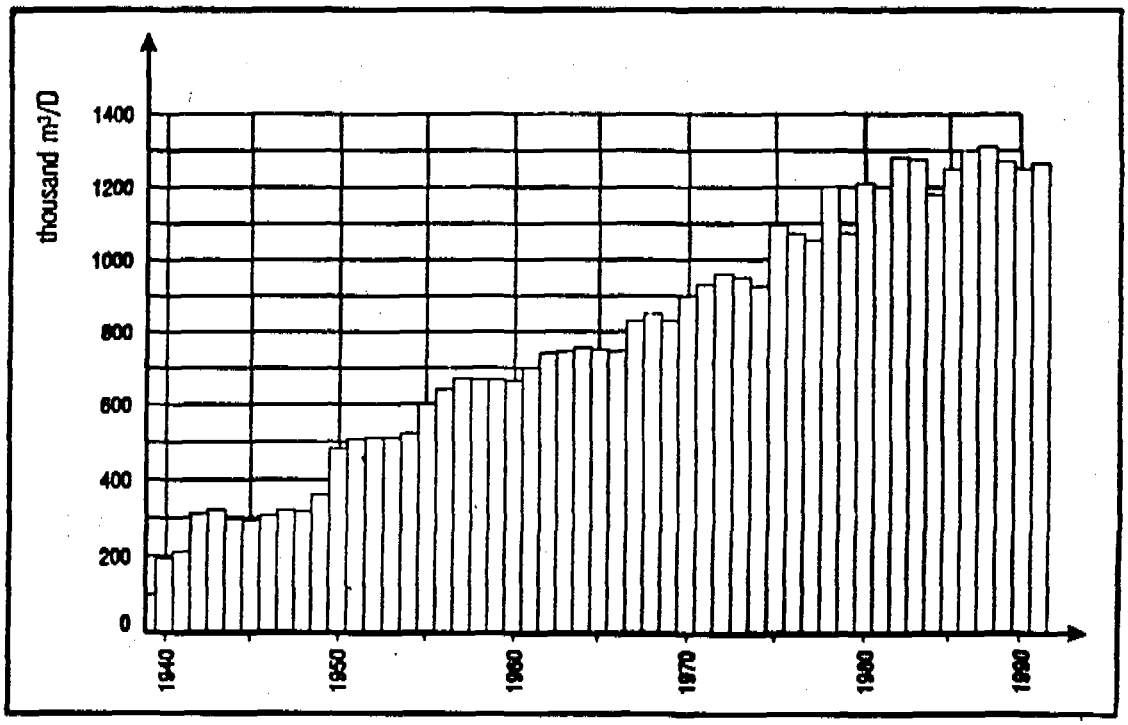
— Industry 26,5%

— Communal 14,3%

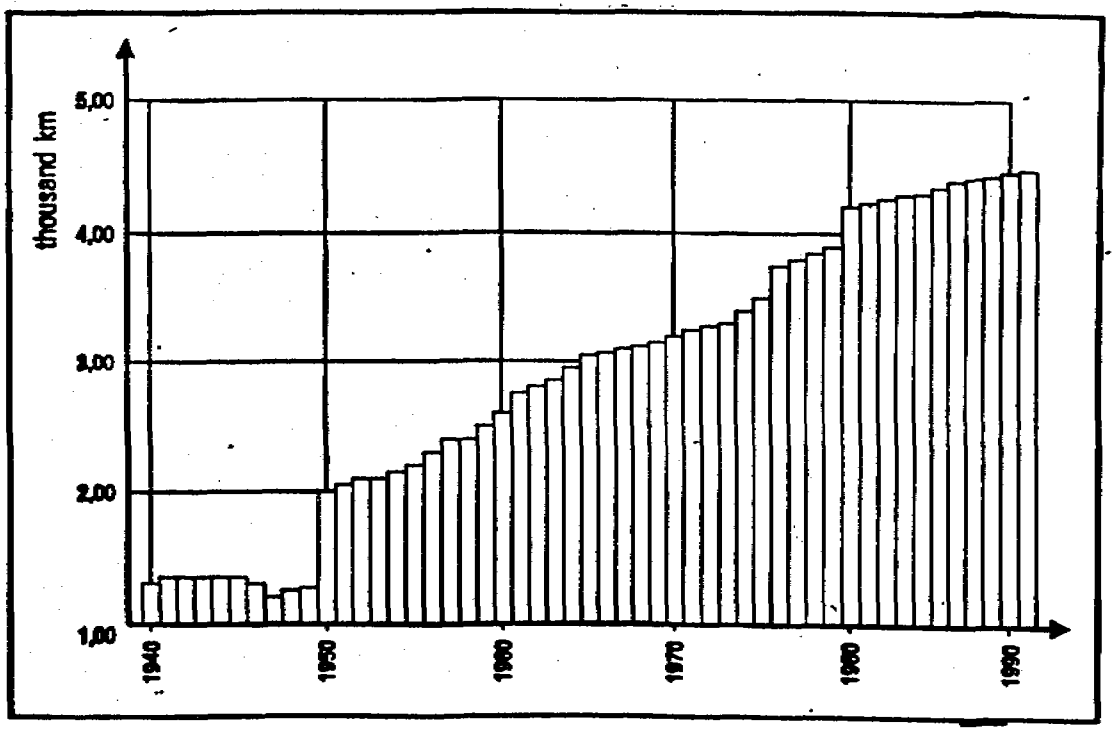
The average rate of sold industrial water: 40.000 m^3/day.

Degree of supply of the inhabitants: 98,6%

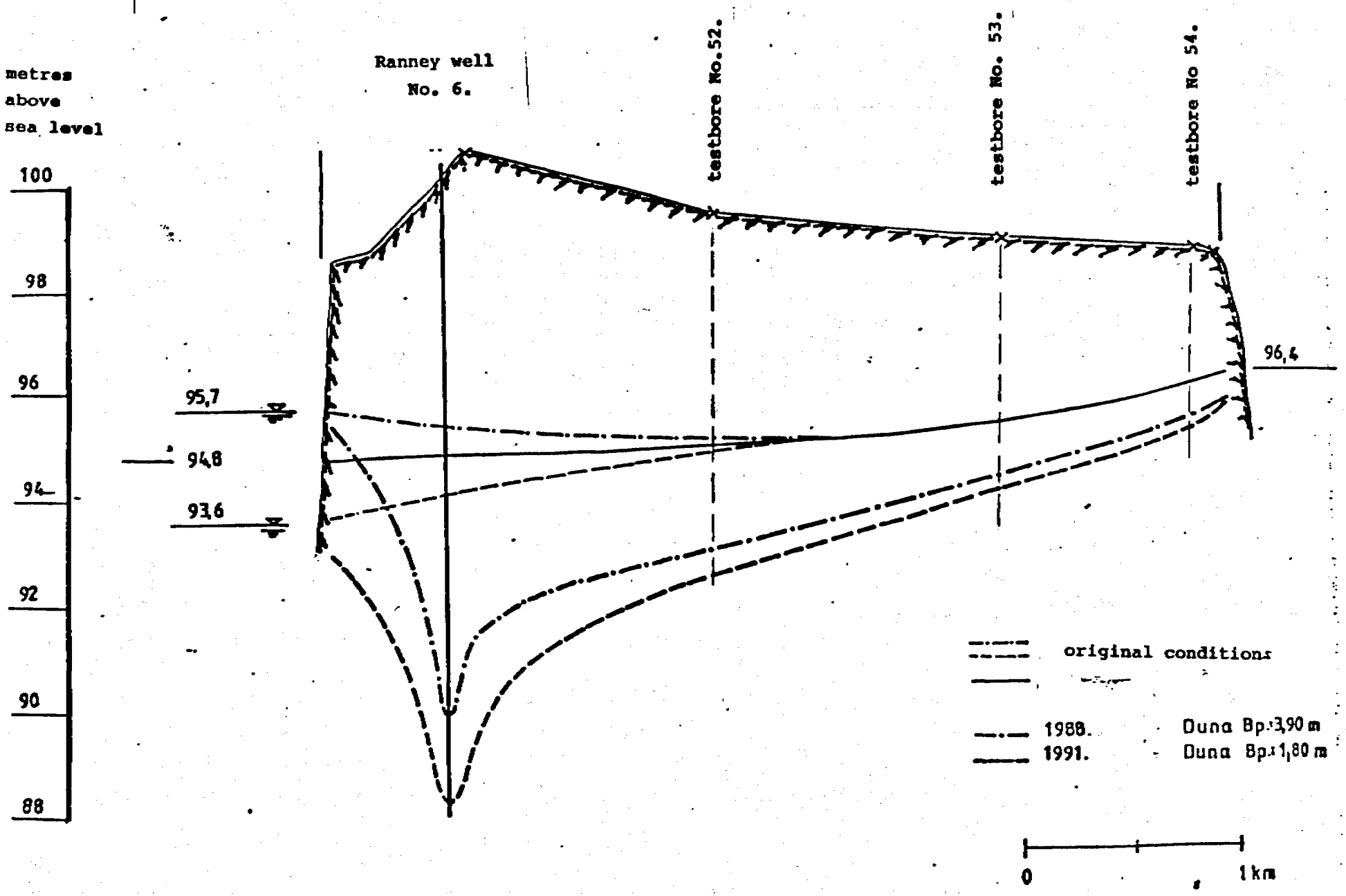
Maximum water production per day

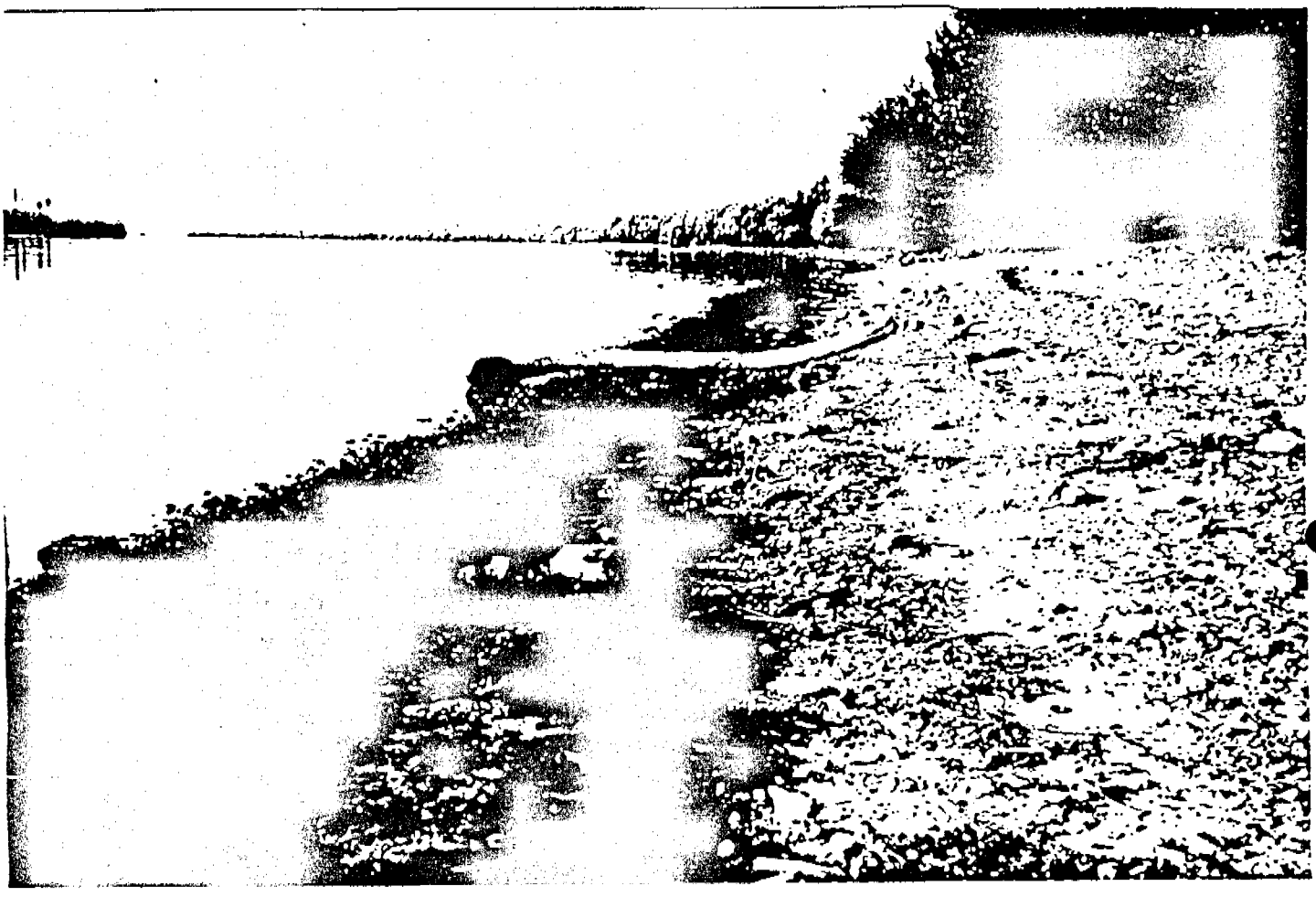


Length of the pipe network



CROSS SECTION OF GROUNDWATER LEVEL AT CSEPEL ISLAND





River bank polluted by heavy oil in Csepel Island

Skaidrite Albertinya

deputy, vice-chair of the Environmental Protection Commission, Parliament of Latvia

THE PRINCIPAL PROBLEMS IN THE ENVIRONMENTAL PROTECTION AND THE PRESENT LIVING CONDITIONS IN LATVIA

The State of Latvia celebrated its first anniversary of its reestatement on the 21st of August 1991. Only two years had passed since the August coup, when the Supreme Council adopted the full independence of Latvia. So the period of transition has been completed. It was a great event for the people of Latvia. The world began to acknowledge the State of Latvia. On the 21st of August the promise of the deputies, elected in 1990 to renew the independence of Latvia, came true.

Latvia is now acknowledged by the world. Of course, this was done with the help and support of our neighbouring countries.

It was clear to our colleagues, all Greens and experts in environmental protection, that the environmental complications in Latvia was directly connected with its political situation. During this two years nothing has changed much. The technology and technological equipment are the same old ones, the agrarian reform in the countryside has just recently been started now. The occupation army is using Latvian land and forests for its war bases and aerodromes. Although the process of Russian army withdrawal, has started, it is very slow and irregular and at times interrupted.

The forests of Latvia were burning all over the last summer. The forest fires were throughout the whole Latvia, but very large areas within the Russian troop polygons have been burnt.

The economic situation of Latvia is still complicated. The budget of 1993 is affirmed, but there is a deficit of 2,5 milliard

roubles (LSR).

It is so hard to find insignificant sums of money for environmental protection. The sum, allotted for the maintenance of the State control and supervision service, as well as to meet the other needs concerning environmental protection is 1,1 percent of the total sum in Latvia in 1993.

We have introduced the Latvian rouble in place of the Soviet rouble, but the stabilization is very slow. What is the proportion between environmental protection and all other needs of the Latvian State today? As we know, the environmental protection activities not always have immediate results. It is usually so, that the results are evident only tomorrow, or in the nearest future. The worse the economic situation, the harder it is to find financial support for "tomorrow's" needs, although the political situation now in Latvia is favourable for solving the environmental protection problems.

The aggravation of ecological situation in Latvia in the recent 10 years has lead to the result that the voters voted for the specialists of environmental protection, scientists professors in the first free elections to the Parliament of the Republic of Latvia. Thus scientists (not only in the field of environmental protection) has become also politicians in Latvia, which means they are taking part in the drafting and passing of new laws and resolutions.

At the present moment the task of our scientists is not only to work out and to provide a basis for the future conception, but at the same time to adopt resolutions and to choose farther

activities. On the other hand -- when so many scientists have become politicians it is much easier to form a dialogue between scientists and politicians as well as to elaborate common goals.

I THE ENVIRONMENTAL SITUATION IN LATVIA

The Latvian countryside is in a little better situation now. As it is known, collective farms and state farms system in Latvia is collapsing. Some large-scale agriculture farms have remained as share societies -- that is a specific cooperative societies. But there are about fifty five thousands farms ir Latvia already. In the basis of agrarian reform is one principle -- to return land to its legal owners. At the present moment the private persons has to rent the land, but in the future (in 1993) they will own this land. We know, that agriculture in Latvia was one of the main pollutants, but now the privatization is a basis for improvement of the ecological situation in countryside. The Latvian farmers are not inclined to usage of fertilizers and pesticides on a large scale. Of course, there may be some exceptions. The manure is also used on the fields, but not in a manner, that pollutes the rivers and lakes, as it had been for the past 50 years in Latvia. We expect very much from the land reform. We know, that before the period of collective farms, Latvia was a beatiful and clean country with lots of beautiful landscapes. The collective farm system changed the minds of the peasants beyond recognition: the peasant -- the collective farmer -- has become indifferent towards the land, fields and meadows, which he did not possess. Now in the

country side of Latvia we have Rural Innovation Centers which are organizing cooperative societies, for example: farmers, who have forests in their property, forming associations, and proposing the more profitable and rational way of forest farming and untilization.

Centers help the farmers to orient themselves to the diversity of nature protection legislation and demands. The goal of these activities are to maintain and clean landscape in Latvia, and to help the farmer to know his duties, if the territory of Latvian State nature preserve is in his farm. If we continue to develop the farming in Latvia in that way we hope there will not be problems with the biological diversity of Latvian landscape.

A lot of Latvian farmers hope to form their farms according to the sample "bed and breakfest" -- that means to welcome tourists in their homes, and it will help them to increase the income of their families. But it is possible only, when the farm production is ecologically clean, the house with its surroundings are tidy, and all the demands of the environmental protection are fulfilled. The political situation at present allows the Latvia countryside develop in this way. This is a sphere, where the non govermental organizations are working and where the Green's advice is so needed.

The development of cities and towns, the problems of production in plants, and energy problems are more complicated. We have some environmental hot spots in Latvia, which are centred around Latvia's largest cities and industries.

The first is -- our city Riga -- rapidly industrialized,

urbanized since 1945, without regard for the environmental consequences. Half of the population of Latvia lives in Riga. Air and water pollution are at critical levels, exceeding pollutant standards in some cases by a factor of 20.

The next one is Jurmala (Seaside), which used to be famous as a resort with white sand beaches, pine forests, and resort facilities during Latvia's independence years. Now the river Daugava and Lielupe transport industrial, municipal and agricultural pollution into the Gulf. The Jurmala's beach is closed to swimming. Most beaches in Latvia have met the same fate.

The Sloka -- cellulose and paper mill also presents a pollution menace. After a long fight this paper mill was officially closed due to excessive environmental hazards in January of 1990. At this writing, however, despite the official decree to shut down operations, the mill continues to operate due to economic considerations and fears of unemployment. Air pollution in Jurmala has led to the deterioration of pine-tree groves on the dunes. According to unofficial estimates 70% of the trees are demaged. The city of Jurmala emits 10.700 tons/year of pollutants into the atmosphere, 63% ir generated by cars and buses, 27% by the Sloka paper and pulp mill.

Olaine -- this small town in Riga county, is famous for its chemical factories producing medicine and toxic wastes. Heavily polluted waste water, toxic air pollution and storage of toxic waste near-by inhabited areas, are the results of this Soviet experiment in building a "chemical city".

Ventspils -- the largest Latvian ice-free port, it was used

as an export port for the former Soviet Union. It has facilities for collecting, storing and transporting different chemicals, such as oil, ammonia and potassium chloride. The port of Ventspils has become one of the most environmentally hazardous area of Latvia. Explosive chemicals, such as acryionitrile are transported and stored in close proximity to major population centers. The major polluters are ammonia and potash cargo transfer facilities. Medical studies completed over the past 10 years show the dramatic impact of ecological degradation on the population.

It is on the one hand. On the other hand -- these factories the port city of Ventspils, are bases for Latvia to become stable and economically independent state. It means, that to solve the problems, which have aroused due to usage of dangerous and hazardous industrial technologies and old technique, we have to change cardinally this structure of industry. It would take us a long time and big financial resources. Practically, only after rearanging our industry we will be able to speak about ecologically safe and stable production in Latvia.

The specialists of environmental protection are unanimous that the mere struggle against the unfavorable environmental effects is not perspective, that we have to define accurately from a scientific view point the reasons of ecological crisis and to eliminate them.

The main strategic aims are the following:

a) elimination of disharmony between industry and the social spheres, abatement of tension in the ecological hotspots;

b) the priority of environmental protection aims and tasks

over those in economy;

c) restructuring of production facilities according to economical, social and ecological interests of the Baltic States;

d) replacement of environment -- loading technologies in traditional Baltic industries -- wood processing, building materials production, light and food industries, production of technical appliances, etc.;

e) the priority in the development of decentralized local production facilities and crafts with strictly compulsory ecological inspections;

f) system of taxes and sanctions combined with the development of new market and production relations;

g) the preservation of multifarious nature and etnogeographical landscape in the course of reforms of land and economy;

h) compulsory fulfilment of environmental protection programmes subjected to effective legal and economic mechanisms of control and pressure.

Some of the crucial problems in Latvian environmental protection are those connected with aquatic ecosystem. Both water supply and sewage water treatment are in a deplorable state.

An urgent task of the specialists of environmental protection is in a very short time to master the most advanced methods of saving water resources, recovery, treatment and environmental quality control by using the assistance offered by Scandinavian and other industrialized countries.

As regards the measures against air pollution in Latvia the

main problem is traffic. The car engines are uneconomical in consumption of fuel; the situation in service stations is aggravated by the lack of appropriate maintenance facilities and efficient measuring instruments. The quality of petrol is low, lead-free petrol ir practically inaccessible in Latvia.

The strategy against air pollution in Latvia relies on the so called maximum permissible values for hazardous discharges. Such standards have been developed for approximately 60% of the industrial enterprises. This work is to be continued. According to the environmental protection authorities in Baltic States the task is to implement the same standards and systems of monitoring as those used in industrial countries of the Baltic area in compliance with the recommendation of Helsinki Comission. This means that the assessment of environment quality in the future should rely on the results of instrumental measurements of emission and imission. Considering the problem in this aspect Latvia will depend on the experience gained bu other countries and on their financial assistance.

II THE SOCIAL FACTORS, WHICH CAUSED THE CRITICAL SITUATION IN THE BALTIC ECOLOGY

The principal factor, which caused the unfavorable ecological situation or even more the ecological crisis in Latvia was the imposed system of economy that lasted for 50 years. There was no private property and private enterprises and it caused to be different the response of the people to the environment, thus why

the nature resources couldn't be used properly and nobody wanted to eliminate the negative consequences. To the population of Latvia the idea of "Common House" is quite alien, it helped only the progress of the degeneration of the environment and the population.

In the recent 50 years the mode of living in Latvia was not characteristic to this area, it caused the gradual degradation of the environment.

The people of Latvia was striving for its independence because it feels the need for maintenance of its country and nation. Disregarding every effort of the environmental protection authorities to improve the ecological situation because of the ownerless state it turns out to be impossible.

The living conditions were gradually growing worse therefore it is impossible to invest money in the environmental protection. On the other hand -- in the conditions of deficiency it was impossible to stop production even if it is hazardous. Unconsidered and irresponsible development of various branches of economy in the basis of which lays a very favorable geographical situation and the far-reaching geo-political goals of the neighbouring superstate is continuing in Latvia for more than 50 years.

The results of these activities emerge in some crucial points mentioned above.

The main conflict areas in Latvia as you have heard are centred around the urban agglomerations of Riga, Ventspils, Daugavpils, Yelgava, Olaine, Valmiera and Liepāja. The rate of

urbanization in Latvia has been very high in recent 10 years. The urban population constitutes 71%; 81,3% of it living in Riga, which accounts for 34,2% of the entire population.

The Riga agglomeration occupies 6% of the territory of Latvia, it is inhabited by 61,2% of the population, 65% of these people are employed in industry.

The extensive development of industry employing cheap and lowskilled immigrant labour, the territorial disharmony between the production and the social spheres have led to the real disaster both the people and the nature of Latvia.

Of course, there are many problems in our countryside and small towns, Ogre, which is situated near two polluted rivers -- the Ogre and the Daugava. There is established the Rural Innovation center in Ogre and one of the most important of its activities is the environmental protection.

III ENVIRONMENTAL PROTECTION SYSTEM IN LATVIA

1991 - 1993

To improve the environment in the coming years in Latvia it is necessary:

1. to create all the preconditions for the development of harmonious agriculture -- that is ecological, economical and social processes should be in balance;

2. to ensure the priority of those environmental protection projects, that will have the most striking national and international effect.

These projects should be financed from the state and local budgets. It means that the national economy of Latvia should be developed in the following way:

1. industrial waste utilization; projecting and building of toxic waste recycling plants;

2. ecologization of industries;

3. the construction of engineering structures and setting up of equipment (for environmental protection);

4. continuation of changes in taxes and credit politics to favour and stimulate the entrepreneurship invest in the environmental protection, observing the strict principle "polluter and user of natural resources pays";

5. consequent usage of laws against monopolies in environmental protection, market economy and in the realization of the politics of uncontrolled prices;

6. the development of ecoindustry;

7. introducing of principially new standards in environmental protection to promote entrepreneurship.

LOCAL GOVERNMENT AND ENVIRONMENTAL PROTECTION

On the way to real independence, Latvia is beginning to change old laws and old power structures, also including environmental legisilation. We have an umbrella law "Environmental Protection" from August 1991. The Environmental protection committee of the Republic Latvia, Supreme Council (Parliament) is working on this. Local government bodies, which are responsible

for environmental protection, have a right to make proposals for improving legisiation and they do, especially larger local governments, such as the city Riga.

But one problem is that we not have a good enough mechanism to fulfil laws and other legal documents in practice.

Under state environmental legislation, the local government is responsible for environmental protection and the use of natural resources in its administrative territory.

Another main problem is that only three years ago in Latvia a new, progressive wave of deputies was elected and for the very first time, environmental committees of deputies were organized. After that, they started to organize executive bodies for the practical resolution of local environmental problems. We hope that, with the accumulation of experience,our efficiency will increase.

Latvia's local government is aware that global interaction between areas, districts, cities and regions is essential. Currently, we have not reached a level of systematic practical cooperation on an international level. Our attempt to participate in the global processes aimed at controlling the environmental situation is our desire however it is not possible at this present time. We do, however try to organize local strategy on the basis of common environmental principles and sustainable development. There is an example of how the regional water problem is developing through local causes in Latvia:

- waste water treatment system of the city of Riga.

Riga, as a city of a million, did not have a waste water

treatment plant and waste had to be drained into the Baltic Sea. This practise of the communist block countries on the eastern coast of the Baltic Sea causes serious problems for the entire Baltic Sea region. Solving this problem in the area from St.Petersburg to Vismar will solve the Baltic Sea ecosystem problem.

Under USSR laws and regulations,there were no government bodies for environmental protection on the state or local level until the mid-eighties. The only specific organization which took care of the environment was an unofficial society of nature conservation. The State had to try to lead this organization by nominating top persons from retired communist party functionaries or, in higher level of the organizational structure, join it with position of executive authority. Farther all has depended on the individual. If an individual had some interest in the environment, there was a possibility to improve the situation.

Only recently were there a USSR State committee of Nature conservation and its branches established in the Soviet republics. The Latvian branch was reorganized in 1990 and became the Latvian Republic Environmental Protection Committee. The Committee does not have the status of a government ministry and it is responsible directly to the Latvian Parliament. As matter of fact, it supervises all environmental activities with in the territory of Latvia as well as local government activities.

The financial basis for environmental protection is taxes on natural resources and pollution. This constitutes about one sixth of the total local budget in densely polluted areas, such as

industrial cities. 25% of this tax goes to a central fund for environmental protection and is returned back to some local governments as a subsidy for national environmental projects, but 75% of the tax remains for the local government, directly.

It is necessary for local government to choose between a long-term strategy, which is very expensive and does not provide a visible result soon and a cheaper strategy which could cover some hot spots.

Unfortunately, at the present moment there is no planning of joint local government investments in such important spheres as energy conservation, material utilization, modernization of technology, environmental education from centralized fund.

Local understanding of the environmental needs are not always broad enough and frequently are a struggle, not against causes, but against its effects. This is our starting position and step by step we will move to higher efficiency. In Latvia, now we have three levels of constitutional authority:

- the Supreme Council in which the Environmental Protection Committee operates and the executive power, the Council of Ministries, at the national level,

- city or district councils with corresponding commissions of deputies and an executive committee at the mid - level,

- city district or district village councils with environmental protection commissions and a corresponding executive power.

Main units with regards to environmental protection in urban area are cities, but in rural areas, villages.

Local governments are completely responsible for land use planning, waste management, drinking water supply, recreation and nature conservation.

The national government is responsible for building standards and codes, energy production and supply, environmental regulations of substances and pollutants.

Both levels participate to make environmental policies on water pollution monitoring, environmental regulations of industry and setting rates and fees.

V ENVIRONMENTAL PROTECTION TRAINING SYSTEM IN LATVIA

In our situation it is necessary to form a proper educational system with an emphasis on environmental protection and nature preservation. The Faculty of Geography of the University of Latvia trains students in ecology and environmental protection, the Faculty of Chemistry of the Riga Technical University trains students in water management and protection, the Academy of Medicine trains sanitary inspectors. The formation and protection of landscape and ecology is being taught at the Academy of Agriculture as well.

The environmental protection in Latvia in the recent years has become one of the subjects in higher educational establishments, and one of the subjects of the Postgraduate faculties.

For example, the Postgraduate faculty of the Riga Technical University is training specialists in:

- water protection and management;

- air polution and energy management;

- protection of nature and landscape.

Water protection and management is one of the main directions in which specialists-decision makers are widely engaged. The training is done for the bachelor's degree of these specialists in the Postgraduate faculty of the Riga Technical University. The period of training lasts for two years (four two-week sessions yearly).

Advisory centers are widely used for a short-time training. One sample of such an advisory center is, -- Rural Innovation Center, which we have already mentioned. These advisory centers help rural people and specialists, including decision-makers.

Environmental protection is one of the directions (trends) of activities in these centers. Every person may get the nedeed expert opinion on the environmental protection problems as well as he may attend 1-2 (one to two) weeks long classes.

Ogre Rural Innovation Center now is working out a programm "Post-graduate Course in Environment and Water Pollution Control". The Program is meant for decision-makers of Local Authorities. Danish specialists (experts) are taking an active part in preparing and implementation of this Post-graduate course. The Course consists of two parts:

- two-week training course by Latvian and Danish experts in Latvia;

- one week devoted to individual practice in Denmark.

We suppose that in the present situation, when wide knowledge

in environmental protection, including water protection, for the population and particulary for specialists-decision-makers is necessary -- the most suitable training form might be a short intense course.

The Rural Innovation Centers are the best for the organization of this training in rural areas in Latvia.

Now we have to face huge problems. We have to change our society completely. We have to build up a new democratic structure of the culture of our country. We have also to change the whole structure of our economy, because the structure of our economy involves too much energy and raw materials consumption, and we now have to find a way to change this structure. It is a big challenge and a big problem, but also a big opportunity for our enterprises. We have to join efforts to increase the level of the economy, and to combine these with our attempts to establish a new structure of the economy, to introduce new, environmentally healthy and less dangerous technologies and products.

At the same time it is very important to further the development of industry and agriculture, to maintain the nature diversity of Latvia, as well as its structure of various branches, protected and untouched landscape of Latvia.

We wish to attempt the improvement of the environmental situation in our country, and also to take our part of responsibility for the state of environment in Europe.

I hope we shall be able to establish and implement something like new environmental ethics, which can be seen as guiding principles, and as criteria for our decision-making, for settling

our priorities. I think that it is the biggest challenge to our days. We have to return to the roots of our culture, and to integrate these roots with new experiences which are very useful, but sometimes -- very threatening to all of us.

Skaidrīte Albertinya
deputy, vice-chair of the Environmental Protection Commission, Parliament of Latvia
Phone 323916
Fax /7/ 0132 211611

THE PRINCIPAL PROBLEMS IN THE ENVIRONMENTAL PROTECTION AND THE PRESENT LIVING CONDITIONS IN LATVIA

The State of Latvia celebrated its first anniversary of its reestatement on the 21st of August 1991. Only two years had passed since the August coup, when the Supreme Council adopted the full independence of Latvia.

It is clear to our colleagues, all Greens and experts in environmental protection, that the environmental complications in Latvia were directly connected with its political situation. During this two years period nothing has changed much. The technology and technological equipment are the same old ones, the agrarian reform in the countryside has just recently been started now. The occupation army is using Latvian land and forests for its war bases and aerodromes. Although the process of Russian army withdrawal, has started, it is very slow and irregular and at times interrupted.

It is so hard to find insignificant sums of money for environmental protection. The sum, allotted for the maintenance of the State control and supervision service, as well as to meet the other needs concerning environmental protection is 1.1 percent of the total sum in Latvia in 1993.

In a little better ecological situation now is the Latvian countryside. As it is known, collective farms and state farms system in Latvia is collapsing. There are about fifty thousand farms in Latvia already. In the basis of agrarian reform is one principle - to return land to its legal owners. At the present moment the private persons has to rent the land, but in the future /in 1993/ they will own this land. We know, that agriculture in Latvia was one of the main pollutants, but now the privatization is a basis for improvement of the ecological situation in countryside.

The development of cities and towns, the problems of production in plants, and energy problems are more complicated. We have some environmental hot spots in Latvia, which are centre around Latvia's largest cities and industries.

The first is - our city Riga - rapidly industrialized,

urbanized since 1945, without regard for the environmental consequences. Half of the population of Latvia lives in Riga. Air and water pollution are at critical levels, exceeding pollutant standards in some cases by a factor of 20.

The next one is Jurmala /Seaside/, which used to be famous as a resort with white sand beaches, pine forests, and resort facilities during Latvia's independence years. Now the river Daugava and Lielupe transport industrial, municipal and agricultural pollution into the Gulf. The Jurmala's beach is closed to swimming. Most beaches in Latvia have met the same fate.

The Sloka - cellulose and paper mill also presents a pollution menace.

Olaine - this small town in Riga county, is famous for its chemical factories producing medicine and toxic wastes. Heavily polluted waste water, toxic air pollution and storage of toxic waste near-by inhabited areas, are the results of this Soviet experiment in building a "chemical city".

Ventspils - the largest Latvian ice-free port, it was used as an export port for the former Soviet Union. It has facilities for collecting, storing and transporting different chemicals, such as oil, ammonia and potassium chloride. The port of Ventspils has become one of the most environmentally hazardous areas of Latvia.

The specialists of environmental protection are unanimous that the mere struggle against the unfavorable environmental effects is not perspective, that we have to define accurately from a scientific view point the reasons of ecological crisis and to eliminate them.

The main strategic aims are the following:

a/ elimination of disharmony between industry and the social spheres, abatement of tension in the ecological hotspots;

b/ the priority of environmental protection aims and tasks over those in economy;

c/ restructuring of production facilities according to economical, social and ecological interests of the Baltic States

d/ replacement of environment - loading technologies in traditional Baltic industries - wood processing, building materials production, light and food industries, production of technical appliances, etc.;

e/ the priority in the development of decentralized local production facilities and crafts with strictly compulsory ecological inspections;

f/ system of taxes and sanctions combined with the development of new market and production relations;

g/ the preservation of multifarious nature and ethnogeographical landscape in the course of reforms of land and economy;

h/ compulsory fulfilment of environmental protection programmes subjected to effective legal and economic mechanisms of control and pressure.

Some of the crucial problems in Latvian environmental protection are those connected with aquatic ecosystem. Both water supply and sewage water treatment are in a deplorable stete.

An urgent task of the specialists of environmental protecti is in a very short time to master the most advanced methods of saving water resources, recovery, tratment and environmental quality control by using the assistance offered by Scandinavian and other industrialized countries.

The principal factor, which caused the unfavorable ecological situation or even more the ecological crisis in Latvia was the imposed system of economy that lasted for 50 years. There was no private property and private enterprises and it caused to be different the response of the people to the environment, thus why the nature resources could not be used properly and nobody wanted to eliminate the negative consequences. To the population of Latvia the idea of "Common House" is quite alien, it helped only the progress of the degeneration of the environment and the population.

The living conditions were gradually growing worse therefore it is impossible to invest money in the environmental

protection. On the other hand - in the conditions of deficiency it was impossible to stop production even if it is hazardous. Unconsidered and irresponsible development of various branches of economy in the basis of which lays a very favorable geographical situation and the far-reaching geo-political goals of the neighbouring superstate is continuing in Latvia for more than 50 years.

To improve the environment in the coming years in Latvia it is necessary:

1. to create all the preconditions for the development of harmonious agriculture - that is ecological, economical and social processes should be in balance;

2. to ensure the priority of those environmental protection projects, that will have the most striking national and international effect.

These projects should be financed from the state and local budgets.

Latvia's local government is aware that global interaction between areas, districts, cities and regions is essential. Currently, we have not reached a level of systematic practical cooperation on an international level. Our attempt to participat in the global processes aimed at controlling the environmental situation is our desire however it is not possible at this present time. We do, however try to organize local strategy on the basis of common environmental principles and sustainable development. There is an example of how the regional water problem is developing through local causes in Latvia:

- waste water treatment system of the city of Riga.

Riga, as a city of a million, did not have a waste water treatment plant and waste had to be drained into the Baltic Sea. This practice of the communist block countries on the eastern coast of the Baltic Sea causes serious problems for the entire Baltic Sea region. Solving this problem in the area from St. Petersburg to Vismar will solve the Baltic Sea ecosystem problem

Under USSR laws and regulations, there were no government bodies for environmental protection on the state or local level until the mid-eighties.

In 1990 the Latvian Republic Environmental Protection Committee was reorganized. The Committee does not have the status of a government ministry and it is responsible directly

to the Latvian Parliament. As a matter of fact, it supervises all environmental activities within the territory of Latvia as well as local government activities.

The financial basis for environmental protection is taxes on natural resources and pollution.

Local understanding of the environmental needs are not always broad enough and frequently are a struggle, not against causes, but against its effects. This is our starting position and step by step we will move to higher efficiency. In Latvia, now we have three levels of constitutional authority:

- the Supreme Council with Environmental Protection Committee;
- city or district councils with corresponding commissions of deputies and an executive committee at the mid-level;
- city district or district village councils with environmental protection commissions and a corresponding executive power

Local governments are completely responsible for land use planning, waste management, drinking water supply, recreation and nature conservation.

The national government is responsible for building standards and codes, energy production and supply, environmental regulations of substances and pollutants.

Both levels participate to make environmental policies on water pollution monitoring, environmental regulations of industr and setting rates and fees.

The environmental protection in Latvia in the recent years has become one of the subjects in higher educational establishments, and one of the subjects of the Postgraduate faculties.

Water protection and management is one of the main directions in which specialists-decision makers are widely engaged.

Advisory centers are widely used for a short-time training. One sample of such an advisory center is - Rural Innovation Center. These advisory centers help rural people and specialists including decision-makers.

Environmental protection is one of the directic [redacted] of activities in these centers. Every person may get the needed expert opinion on the environmental protection problems as well as he may attend 1-2 weeks long classes.

We suppose that in the present situation, when wide knowledge in environmental protection, including water protection, for the population and particularly for specialists-decision-makers is necessary - the most suitable training form might be a short intense course.

The Rural Innovation Centers are the best for the organization of this training in rural areas in Latvia.

WATER SUPPLY AND SEWAGE TREATMENT PROBLEMS IN RURAL AREAS OF LITHUANIA

Vida Rutkovienė
Albinas Kusta
Lithuanian Agricultural Academy
4324 Kaunas-Academy
Lithuania

Lithuania is one of a few countries where only ground water is used for household needs.

Regional fresh ground water safe yield makes 3,2 mln.m3/day. Until 1991 97 water intakes were prospected in 41 municipality in our Republic. Safe yield of these water intakes makes 1953,90 thousand cubic meters per day or 61% of all forecasted ground water resources. Quaternary alluvial deposits and intermorainic aquifers are the most water-bearing layers, whereas water resources in upper-and lower-chalk and upper-Permian aquifers have already been employed. Deplete of these aquifers is observed in Marijampolė, Mažeikiai, and Šiauliai water intakes. At present about 45,2% of prospected resources are used in municipal water intakes in general.

Ground water and underground water from deeper aquifers is used for water supply in rural districts.

At present in Lithuania there are over 11 thousand drill wells, that mostly take artesian and interseam water, and about 300 thousand dug wells, that mostly take ground water.

It should be noted, that underground water quality is getting worse because of too intensive fertilization, use of various chemicals in agriculture and, also, because of increasing pollution of the environment.

Pollution greatly influences ground water, therefore water quality in dug wells, that are used by 1 mln Lithuanian inhabitants, is getting worse markedly. Dug wells are widely spread in rural areas. They are most polluted in the places of intensive agriculture, near cattle-breeding complexes, and in towns and settlements. In 1989 about 50,9% of dug wells water were polluted with bacteria, and 48,3% - with nitrates. Investigations show, that concentration of nitrates in dug wells water reaches 87 mg/l, sometimes - even 200-300 mg/l. In places of less intensive farming, further away from settlements nitrate concentration is about 10-12 mg/l.

In Kaunas district about 600 dug wells were studied with respect to their water quality in 1989-1992. In clay grounds nitrate concentration averaged 71,1 mg/l in 1989, and 88,1 mg/l in 1991. The extromes from 11 to 193 and from 4 to 229 mg/l respectively. In sandy clay nitrate concentration in 1989 and in 1991 averaged 146,4 mg/l and 99,7 mg/l respectively.

Knowing that internationally accepted nitrate concentration is only 45 mg/l, the investigated Lithuanian dug wells show that situation is dangerous.

In deeper, screened by non-permeable ground layers, aquifers water is of better quality, therefore, it should be used where possible. Construction of deep wells is expensive, therefore water from dug wells will be used for a long time especially in rural districts. On the other hand, in Lithuania water from deeper aquifers contains too much iron that has to be removed. Because of bad economical situation water cleaning equipments often are not constructed, so we have to use water containing too much iron, or to take water from dug wells. Lately portable defferugization and water softening equipments, that can be installed on farms or in apartments, came into production and are also imported from abroad. They are rather expensive, especially the imported ones, therefore their use is limited. In Lithuania hydrogeological works are coordinated by State Geological Service and Vilnius State Hydrogeological Enterprise ARTVA. Siauliai State Hydrogeological Enterprise and Kaunas Yoint-Stock Hydrogeological Enterprise make all kinds of wells for water abstraction. Construction of drill wells that take water from deeper aquifers slackened because of their expensiveness. For example, in 1990 436 wells were drilled, in 1991 - 401. In 1992 396 wells were drilled, 188 of them - for farmers. 117 wells drilled for farmers are comparatively shallow (up to 50 m). Most of them reach the aquifer with low quality ground water. A deep drill well is a very expensive but necessary equipment. At present state gives farmers only symbolical support in this field, therefore an effective financial assintance in solving drinking water problems in rural areas is urgent.

Demonstration of possibilities of model drinking water springs construction under different conditions would be of great educational and practical importance in Lithuania (polluted, waterless and other districts). Financial support for these works would be necessary and urgent. Demand for shallow and cheaper wells, satisfying needs of private clients, has increased.

If the present tendency of ecological situation alteration remained the same, it would be possible to predict that because of increasing environmental pollution number of dug wells will decrease as people will have to look for cleaner water in deeper aquifers. But when economical conditions change and use of fertilizers and chemicals markedly increases, when land receives its masters back and farming becomes more rational, we can expect the ecological conditions in country-side to improve. This can be the reason for water quality in dug wells to improve

after some time. Now scientists task is to prepare recommendations, according to which farmers could protect ground water from pollution and have a high quality water in their dug wells.

In 1991 total amount of waste water was 3902 mln cubic meters, 3488 mln cubic meters were comparatively clean and did not need cleaning. Total amount polluted waste water was 415,5 mln m3. 98,6 mln m3 (24%) of cleaned waste water, 224,5 mln m3 (54%) of insufficiently cleaned waste water, and 92,3 mln m3 (22%) of not cleaned waste water were let out into surface waters. These indexes are unsatisfactory because not all cities have water-cleaning equipments or flows are cleaned only mechanically and in cleaning equipment of insufficient productivity. Situation in rural areas is not better.

Water-cleaning equipments are being built or reconstructed in 14 main cities of Lithuania at present. These equipments will be able to clean 1175 thousand cubic meters of runoff water per day. If water-cleaning equipments were constructed only in the biggest cities (in Vilnius - of biological cleaning, in Kaunas - of mechanical cleaning, in Siauliai, Klaipeda and Palanga - of biological cleaning), the amount of organic pollutants that get into open waters in Lithuania would decrease in 70% (if compared with 1989), about 81% all polluted waste water would be cleaned up to the limits, 18%-would be insufficiently cleaned, and 10%-would remain uncleaned.

Though the main goal in waste-water treatment is reached in the main cities, it does not solve the whole problem. During privatization the problem of little amounts of waste-water cleaning has become very actual. To solve this problem all ways of natural ground cleaning will be widely used.

Lithuanian Government has passed a resolution about rural water supply and sewerage subordination and responsibility (1992). It determines that local administrations are responsible for the proper exploitation of generally used water supply and waste water treatment equipments.

Water is polluted in the way of non-point pollution as well. Great part of this pollution can be avoided if the sources of pollution were put in good order, if fertilizers and pesticides were used rationally. Properly arranged protection belts and zones help to preserve rivers and lakes from non-point pollution. To achieve that, new regulations for protection belts and zones arrangement have been prepared.

Not only surface and ground water pollution but also many other consequences of human activity make bad influence on living conditions in Lithuania. It is a pity to say that for many years very little at-

tention was paid to these problems. Now, restoring state has lots of economical problems and is simply unable to solve the problems mentioned above more quickly. Household waste make many problems but still greater trouble is with treatment of dangerous industry waste. Only about 15% of dangerous waste (galvanic slime from cleaning equipments, non-regenerated oil products) were utilized in Palemonas Ceramics factory. But now there are no possibilities to operate this factory because other factories are not able to pay for the utilization of their waste, as prices of oil products has risen. At present, dangerous waste treatment system is being prepared with help of specialists from Denmark.

Conditions of environmental pollution are controlled by the Department of Environmental protection and regional services subordinate to this department, and, also, by scientists from different research institutes working in State Environment Monitoring program. Monitoring program consists of 4 parts: monitoring of pollution source, monitoring of atmosphere pollution, monitoring of fresh water and sea monitoring. Thanks to monitoring and contral programs, today we can know-where we are, what our environment is.

It is not a new thing that our environment is inadmissibly polluted. That was known many years ago and a great deal has already been to stop the pollution. But the main works are still waiting for their turn.

In Lithuania Green Movement has played a positive role - they drew public attention to bad environmental situation.

Lithuanian laws are favourable to the establishment of various public organizations. In 1989 Lithuanian Association of Land and Water Management Engineers (LALWME) was recreated. This organization adopted traditions of analogical organization that functioned in Independent Lithuania before 1940. LALWME publishes its own magazine which deals with problems of environmental protection in general and with water protection in particular. Irrigation and Drainage Comission was established near LALWME. In 1992 this comission was admited into International organization (International Comission of Irrigation and Drainage). LALWME maintains direct relations with related foreign organizations. In 1991 this association organized conference ,,EKological Aspects of Hydraulic Engineering and Organization of the Use of Land'', in 1992 together with Ministry of Health and Academy of Agriculture -conference ,,Farming and Water Quality''. During the latter conference International Council for Studies of sources of Driking Water in Farmlands was questablished. This Council became a constantly working public organitozation which could do concerete works, and first of all - to unite scientific collectives, that could give a qualified advise how to

provide ourselves with good quality water.

Lithuanian State and Local governmental structures are disposed to collaborate with the organizations mentioned above, and with other public organizations, and to support them according to the existing possibilities. But we have no deeper traditions of collaboration yet. We hope to have a good lecture in this seminar.

Vida Rutkoviene
International Council for Studies of Sources of Drinking Water in Farmlands

Albinas Kusta
Lithuanian Association of Land and Water Management Engineers

STATES AND PROBLEMS IN WATER SUPPLY SEWERAGE AND POLLUTION CONTROL IN THE REPUBLIC OF MACEDONIA

By

Prof. Dr. Živko Škoklevski
Assoc. Prof. Dr. Živko Veljanovski
Faculty of Civil Engineering, University of Skopje

1. General Data

The Republic of Macedonia stretches over an area of 25700 km^2 out of which 85% belongs to the Aegean catchment basin and 15% to the Adriatic basin. The Republic covers the upper parts of these areas where the runoff waters are formed which flow towards the two seas. The Republic has a semi arid climate with an average annual rainfall of 745 mm which varies both in space and time in the range from 200 mm to 1300 mm. Many smaller streams forming the river net are of small water flow with considerable time variations. A major portion of stream covering a catchment area bigger than 100 km^2 remain dry during the rainless period. For example, the river Vardar in Skopje with its catchment area of 4.625 m^3/s and an average flow of 64.3 m^3/s had its minimum flow of 6.1 m^3/s and a maximum flow of 1320 m^3/s. It should be pointed out that low flow is of long duration, from July to October, every year repeatedly, which deteriorates the streamsand rivers as a waste water recipient. The extensive variation of the runoff imposes the need for construction of reservoirs which are the only to provide the required water quantities.

The enormous drops in water flow, the unfavourable geological and geomechanical structure together with the vegetation cover distribution and its inadequate exploitation are the main reasons for the occurrence of an intensive erosion. The deposits transported by the rivers cause a permanent loss of cultivated land affecting adversely the use of runoff water increasing thus the cost of protection against deposits of both reservoirs and natural lakes.

The Republic of Macedonia has over 2.000.000 population out of which 62% live in urban zones and 38% in rural zones. After 1945, due to the

development and economic politics of that time an extensive migration of population from villages in cities took place with an increasing tendency of migration abroad from the sixties onwards of both city and village population. The most densely populated are the flat parts of the Republic such as the valleys of Skopje, Polog, Pelagonija, Veles, Strumica, etc. Less densely populated is West Macedonia.

The west part of Macedonia with its high mountain massifs and the natural lakes is relatively rich with runoff and ground spring waters of good quality. The central and the east part of the Republic of Macedonia is very poor with runoff water and limited quantities of ground water. If we add to the unfavourable space distribution the unfavourable time distribution of water quantities, then the lack of water is a limiting factor for the areas poor with water which speeds up the population migration.

2. Activities of Non-Governmental Organizations (NGO)

From non-governmental organizations significant activities have been undertaken by the Republic Association of Ecologists with its sections in all bigger cities of the Republic. Citizens of the Republic of Macedonia being aware of the need for environmental protection are members of this Association. A major portion of the members are intellectuals with good knowledge about the environment facing the need for protection of the living environment. The responses of the ecologists to solving of numerous ecological problems are presented to the public through the daily press, radio, television as well as through direct contacts with government officials. We consider the cooperation with the republic and local authorities as a good one however, we still can not be satisfied with the present state because of the following: (i) many existing ecological problems remaining to be solved , (ii) poor economic possibilities of the Republic, economy and the population which is the main cause for a slow problem solving (iii) the lack of interest in the neighbouring countries for solving of common ecological problems in the border zones, and (iv) the lack of ecological conscience in many of our people.

3. Water supply to population and industry

Urban settlements and many larger rural settlements are provided by local water supply systems. Villages being close to the larger towns are connected to their water supply systems. The largest water supply systems in the Republic are those of :(i) Skopje with the wider city area, (ii) the regional water supply system "Studenčica" supplying the cities of Kičevo, Makedonski Brod, Kruševo, Prilep and many villages, (iii) the water supply system "Lukar" for Kavadarci and Negotino and (iv) "Lisiče" a water supply system which is under construction for supplying of Veles and its surroundings.

Within the water supply systems the following was constructed by 1990: (i) major pipe lines from the springs to the consumers centers with a total length of 466 km, (ii) pipeline network with a total length of 2350 km, (iii) total reservoir volume of 97000 m^3, (iv) water processing plants for 3300 l/sec.

Many rural settlements use local water supply systems with street fountains or the use common or private wells. Such a water supply neither satisfies the needs nor it complies with the water supply criteria.

Water resources used in the water supply systems are as follows: (i) runoff water from streams or accumulations. Supplied in this way are Bitola, Strumica, Kumanovo, etc. Ohrid is supplied from the lake without pre-conditioning. (ii) Ground and spring water is used for supplying of Skopje, the regional water supply system "Studenčica, Tetovo, Gostivar, Debar, Struga and others.

For water supply purposes underground springs of high quality water were originally used without pumping, to turn later to the use of pumped water and to end up finally with the use of runoff processed (conditioned) water .

The development of certain regions and the increased number of population and their living standard will tend to enlargement of the existing water supply systems and capacity increase of the existing vater sourcis. The unfavourable space distribution of the available water in respect to the consumers centers, the bed quality and unfavourable time variation of runoff water , for further undisturbed use, impose the need for construction of rather costly structures such as: (i) accumulations and river intake structures with protection zones

(ii) water processing plants and (iii) long pipelines.

The construction of water supply systems was financed so far by: own financial support of the consumers, (ii) Republic sources, (iii) contributions of working organizations and (iv) loan financing. Taking into account the present economic situation of the Republic, the power of both the economy and the population, it seams that the previous mode of financing will be abandoned which means that it is realistic to expect a stagnation in the development of certain regions and population migration.

4. Sewerage and Sewerage Treatment

Sewerage and drainage of waste waters in the Republic of Macedonia is solved on a rather low level. Only 68% of the urban settlements have constructed sewerage network. The waste water in all other settlements are taken away in septic tanks. The sewerage networks in 17 populated settlements are separated and in 13 city settlements they are mixed type networks.

It is estimated that only 20% of the drained waste waters are adequately treated. The remaining waste water is discharged into the water flows directly or indirectly into the surface settlement basins. The larger industrial plants have their own sewerage systems but only few of them have treatment plants.

Thanks to the considerable efforts of the ecologists and Macedonian public, as well as the understanding of the governmental institutions , during the eighties, accomplishment of projects for protection of Ohrid, Prespa and Dojran lakes started. For all the three natural lakes sewerage treatment plants were constructed while out of the designed total length only 40% collectors have been constructed for the Ohrid lake, 8.6% for the Prespa lake and 60% of the Dojran lake.

Taking into account the fact that all the three lakes are border lakes parts of which belong to the neighbouring countries the Republic of Albania and the Republic of Greece, the protection of these lakes should be a joint care. Unfortunately, there are no adequate protection activities on the other side of our frontiers.

We would like to emphasize the serious danger of disappearing of the Dojran lake. This lake of an original water area of 43 km^2 and a

maximum depth of 10 m, is decreasing permanently its water level due to an excessive exploitation of the lake water, ground water and the water flowing into the lake in the past. The situation is alarming and requires an urgent action. For saving of this lake we need assistance in order to make the Republic of Greece to sit for negotiations for definition of a permanent solution for preserving of the Dojran Lake (supporting papers are enclosed).

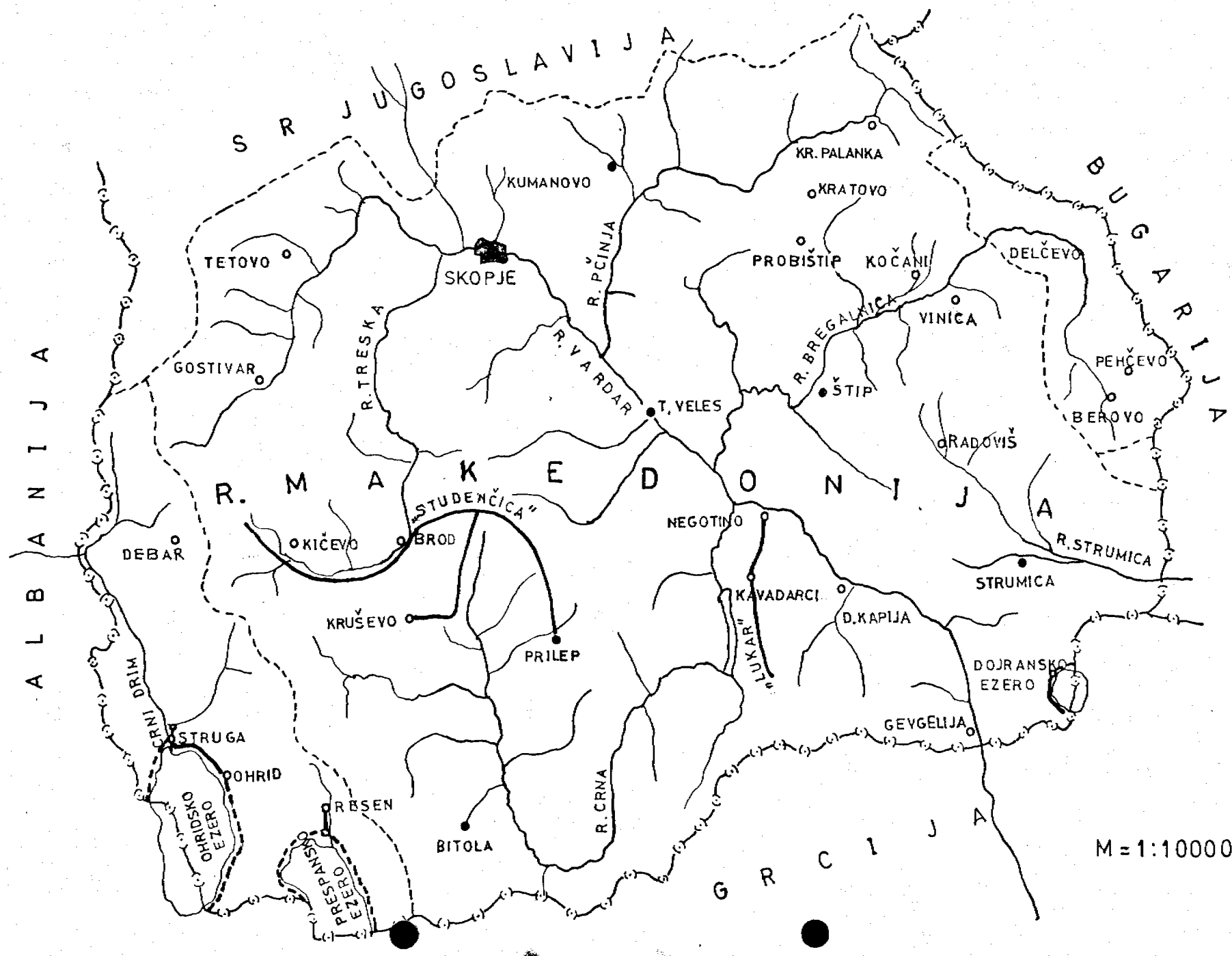
5. Pollution Control

Lacking treatment plants for waste water purification it is practically illusory to insist upon some protection of runoff water. An organized water protection , but only a partial one, has been carried out for the three lakes where there are filtering stations for the waste water.

The available legislative provisions prescribe four categories of runoff waters in the rivers from I category of good quality water suitable for water supply to category IV for water unsuitable for use without a preceding treatment.Category III includes the Vardar river after Skopje and Veles , while the remaining portion belongs to the category II. During the low flow of the summer period when water temperature increases also, long portions of the II category rivers turn into category III.

Competent institutions perform an obligatory follow up of the water states of the rivers and lakes and give warning. Efficient measures can not be enacted however besides the sanction against the violators and thus it is impossible to solve the ecological problems.

In order to improve the protection of surfise waters it is of vital importance to: (i) construct systematically sewerage treatmant plants (ii) construct reservoirs for regulation of low flows, (iii) to perform a systematic erosion protection in active erosion prone areas, and (iv) to introduce a control of chemicals usage in agriculture.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SUMMARY

STATE AND PROBLEMS IN WATER SUPPLY. SEWERAGE AND POLLUTION CONTROL IN THE REPUBLIC OF MACEDONIA

By

Prof.Dr.Živko Škoklevski
Assoc Prof.Dr. Živko Veljanovski
Faculty of Civil Engineering, University of Skopje

The Republic of Macedonia with an area of 25700 km^2 covers the upper parts of the Aegean catchment basin with 85% and of the Adriatic basin with 15%. It has a semi arid climate with large space and time variations of both rainfall and runoff.

Out of the total population of 2.000.000, 62% live in urban settlements and the remaining portion in rural settlements which are nonuniformly distributed with a permanent tendency of migration from the village in the city and migration abroad.

The Association of Ecologists of the Republic of Macedonia permanently introduces incentives for solution of significant ecological problems in front of the competent authorities of the Republic. Certain success is achieved in the protection of the natural lakes of Ohrid, Prespa and Dojran by a partial construction of sewerage networks and sewerage treatment plants. The most serious ecological problem which needs an urgent consideration is the protection of Dojran Lake however an international assistance and active cooperation with the Republic of Greece is necessary.

For water supply of city population local water supply systems are mainly used which utilize high quality ground water while most of the rural settlements utilize common or individual fountains or wells. Due to improvement of the living standards in villages and small cities, construction of regional water supply systems which will use the runoff water from reservoirs applying preprocessing becomes necessary in future.

Only 68% of the urban settlements in the Republic of Macedonia have sewerage networks while the remaining portion uses septic tanks. Sewerage treatment plants have been constructed only for the three natural lakes while all other sewerage networks release the waste water directly into the rivers.

Due to the lack of more sewerage treatment plants, the efficient control of runoff waters becomes impossible. Water category in rivers being regularly controlled depends mainly upon the hydrological status, i.e. upon the discharge quantity. The need is emphasized here for construction of sewerage treatment plants in all cities and larger industrial complexes of the Republic. However, such an ecological investment seems to be unrealistic taking into account our present economic power.

THE ECOLOGIST MOVEMENT OF MACEDONIA-DEM AND ITS PARTICIPATION IN THE SOLUTION OF WATER PROBLEMS

DEM - The Ecological Movement of Macedonia was established three years ago, as an umbrella-organization of non-governmental environmental association as well as profesional organization. With its activity in rising the public environmental awareness, it became a synonym of free citizens' iniciative for the protection of environment. As a result, the Movement is spreading, so today it includes 31environmental associations and 31 profesional organizations (we enclose: The membership list).

The results of the activities of the Movement enable its oppinions and suggestions to be respected from the governmental ministries. The activities of the Movement are also noticed by European, as well as international level, where the representatives of the Movement participate equaly in the work of the international environmental forums.

According to the program of work of the Movement, the priority task is to define the bad hidrological situation in the Republic of Macedonia and the protection of the water resources. For those reasons numerous activities have been realised. The most important are:

1. The Conference for the situation and perspectives for the protection of the Dojran Lake, held in November 1990 together with the environmentalists from Greece. The conclusions and recommendations from the Conference were delivered to the governments of Macedonia and Greece. The final dramatic pledge to save the Dojran Lake was also delivered to the government and the public of those two countries (we enclose: Compilation of the science works from the Conference).

2. The Conference for the situation and perspectives for the protection of the Ohrid Lake and its area, held in June 1991 together with the environmentalists from Albania. Various environment experts participated at the Conference, representing 50 science-research works. The conclusions and recommendations from the Conference were delivered to the governments of Macedonia and Albania. To implement these conclusions, DEM and the Environmental Movement of Albania proposed production of international science-research project. The Prespa Lake and its area

is going to be included in this project (we enclose: Compilation of the work of the Ohrid conference).

3. The activists of the Movement constantly follow the finalization of the Study for integral development of the Vardar Valley, especially the ecological aspects of this study. For that occasion several discussions are already held. On the 22nd of April, the Earth Day, DEM organised round table for "The ecological aspects of the project of the Vardar Valley (we enclose the Summary from the Study for integral developement of the Vardar Valley).

4. The activists of the Movement are included in the solution of the problems with drinking water, by suggesting possible solutions and pressuring the government for their realization. In order to solve more complex problems DEM is organizing special science-research meetings such as : Round table connecting the Work problems with regional communal system "Studencica" in the Western Macedonia.

5. The Movement is making special efforts for protecting the water resources from their pollution: rivers, lakes and other ground waters. The fact that in Macedonia there are too few purification systems for waste communal and industrial waters, shows what danger the water resources are. The possibilities for getting the sanitary good water are drastically reduced.

That is the reason why the Movement is strongly pressing the government as well as manufacturies to stop further waterpollution. The meetings with the government and the managements of the factories to disscuss the urgent measures for protection, are regularly held.

All these disscussions are based on the scientific data produced by the profesional organization associate members of the Movement. We are aware that all these problems can not be solved quickly due to our bad economic situation as well as to insufficiently developed environmental awareness in our Republic. Our further efforts will be pointed at this direction and we hope for financial support from the international environmental founds.

Written by D-r prof. M. Tokarev- president
of the Science-research Commision of DEM

13.04.1993 Skopje

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Environnement Pologne

Réalités & Projets

Avril 1993 numéro 3

La parole à... Maria Stolzman

Présidente de la Fondation pour l'Eau

La Fondation pour l'Eau, créée par le Primat de Pologne, Monseigneur Józef Glemp à l'automne 1987, a commencé son activité le 1er mars 1988.

Le but de la Fondation est de soutenir l'action des collectivités rurales dans le domaine de l'approvisionnement de la campagne en eau et de la gestion des eaux usées.

Ses moyens proviennent uniquement de l'étranger.

En cinq ans la Fondation a cofinancé 1030 investissements aidant 98.700 familles d'agriculteurs dans environ 700 communes.

Dans les années 1988-90, l'aide de la Fondation prenait la forme de subventions et à partir de 1991, d'un crédit à faible taux d'intérêt. Un grand nombre d'investissements aidés concernait l'approvisionnement en eau: les réseaux d'eau et leurs raccordements, les usines de traitement des eaux et les réservoirs de régulation. Durant les deux dernières années, l'intérêt des communes a augmenté pour la construction de stations d'épuration d'eaux usées, et dans les localités à forte densité de constructions, pour l'aménagement des réseaux de canalisations.

La Fondation soutient cette voie de développement en mettant en place de nouveaux types de stations d'épuration, pas chers, simples et économiques en énergie.

La formation des cadres, ayant beaucoup de succès, est menée dans le domaine de la protection de l'environnement rural, principalement de la gestion des eaux usées. De plus, la Fondation accorde des consultations gratuites sur l'organisation des appels d'offres, le choix des procédés techniques.

L'effet de l'action de la Fondation est la stimulation des nombreuses initiatives, la baisse des coûts d'investissement, ce qui est l'une des conditions pour obtenir une aide, la mobilisation et la solidarité d'une collectivité autour de la réalisation des investissements pour l'eau et les canalisations nécessaires.

La résolution des problèmes d'infrastructure est un point de départ dans l'action de restructuration de l'agriculture, dans le but de la création de nouveaux emplois à la campagne.

La Fondation organise en mai 1993, sous les auspices du Secrétariat de l'Eau, une conférence sur le rôle et l'importance des organisations non gouvernementales dans la résolution des problèmes d'approvisionnement en eau et des réseaux. Les représentants de la plupart des pays postcommunistes, ainsi que les personnalités éminentes des organisations non gouvernementales venant du monde entier y prendront part.

S t a t u t e
of
the Foundation for Water Supply to Rural Areas

Paragraph 1

The Foundation called to life by the Primate of Poland with the Foundation Act of September 18, 1987 (reg. No. 7000/87 State Notary Office, Warsaw) shall operate in accordance with the Law on Foundation of April 6, 1984 (Journal of Laws No. 21, item 97) and this Statute. It is named Foundation for Water Supply to Rural Areas, hereinafter called "The Foundation".
The Foundation is entitled to use the abbreviation "The Water Foundation" and to translate the name into foreign languages.

Paragraph 2

1. The Foundation shall operate in the area of the Republic of Poland.
2. The Foundation's seat is Warsaw.
3. The Foundation can establish offices in the Country and abroad.

Paragraph 3

The aim of the Foundation is to support water supplies to rural areas and to assist problems of waste water disposition.

Paragraph 4

The Foundation implements its aims, mentioned in the Para. 3 above, according to yearly activity programs approved be the Council of the Foundation.

Paragraph 5

The assistance due to water supply projects and sewerage treatment will be implemented particularly by:

1) financial assistance to water supply and sewerage treatment projects,
2) technical and economical consultation and training.

Paragraph 6

1. The Foundation's activity is not oriented on profit.
2. The assistance, mentioned in Para. 5 above, will be provided gratuitously or non-gratuitously depending on local possibilities.

Paragraph 7

The Foundation can conduct economic activities directly or through:

1) self-balancing enterprises,
2) establishment of a one-man partnership in accordance with the Polish Commercial Code,
3) participation in a partnership with local and foreign physical persons or legal entities.

Paragraph 8

1. The subject of the Foundation's economic activity is:
   1) production, and particularly production in the domain of building materials industry,
   2) services, and particularly:
      - construction services, contracting and designing as well as consulting,
      - training activity,
      - economic consultation.
   3) trade, and particularly:
      - wholesale and retail turnover of commodities, machines and installations in the scope and for the needs of the industries mentioned in item 1 above,
      - trading books and printing matters.
2. The economic activity carried out directly by the Foundation is organized and managed by the Board of Foundation. Separated enterprises are conducted by their directors appointed by the Board, which also defines their powers.

Paragraph 9

For implementation of the Foundation's aims, the Foundation can enter into contracts and agreements concerning cooperation with foundations or other organizations, local and foreign.

Paragraph 10

1. The Foundation is managed by a Board of Foundation consisting of its president and 2 – 4 members.
2. The Board is appointed and recalled by the Council of Foundation, nominated by the Primate of Poland.
3. The Council of Foundation supervises activities of the Foundation.
4. The Board submits to the Primate of Poland and to the Council annual report on its activity by the March 31, each year.
5. Resolutions of the Council can pass at presence of at least 50 percent of its members. For entering into force, the resolution requires usual majority of voices, unless the stipulations of the Statute states differently. In the case of equality of vices, the voice of a Chairman of the Council is deciding.

Paragraph 11

1. The President coordinates works of the Board and is a superior of employees of the Foundation.
2. The Board manages the Foundation's operations and is responsible for representing it.
3. A declaration of will on behalf the Board may be made by two members of the Board or by one member of the Board and a proxy nominated by the Board.

Paragraph 12

1. The Foundation's funds supplied by the Donor are USD 10,000.
2. Means for implementation of the Foundation's aims and for covering its expenses, besides the fund mentioned in item 1 above, may originate from:
   1) domestic and foreign donations, legacies and bequests or subventions,
   2) interests on capital investments and revenue bonds,
   3) dividends and profits from shares,
   4) income from economic activities,
   5) other incomes and returns.

Paragraph 13

The Foundation carries on its financial activity and accounting books according to the regulations effective for physical persons.

Paragraph 14

The Statute can be changed only by resolution passed by 2/3 of the members of the Council, approved by the Primate of Poland.

Paragraph 15

1. Liquidation of the Foundation shall be decided by the Primate of Poland or, with his approval, by the resolution of the Council passed by 4/5 of voices.
2. The liquidator shall be appointed by the Council.
3. Any surplus assets, which remains after liquidation, shall be designed for purposes of the same kind as the Foundation's aims.

Poland.

LAW ON FOUNDATIONS

ANNOUNCEMENT OF THE MINISTRY OF JUSTICE

May 17, 1991

concerning the publication of the uniform text of the law on foundations of April 6, 1984.

1. According to article 5 of the act of February 23, 1991 on the change in the law on foundations (Law Journal No.19 entry 82) we proclaim as an annex to the said announcement the uniform text of the law on foundations of April 6, 1984 (Law Journal No.21,entry 97) including variations introduced by the act of February 23, 1991 on the change of the law on foundations (Law Journal No. 19, entry 82) and following the regulations released prior to the day of announcement of the uniform text and retaining the subsequent numbering of articles, passages and clauses.

2. The uniform text published in the annex to the said announcement does not comprise:

1) article 23,25 and 26 from the act of April 6,1984 on foundations (Law Journal No.21,entry 97) which say:

"Article 23 1. Foundations operating on the principles previously established are bound to submit to the court their registers, applications for entering the register of foundations within the period of 12 months from the date of implementation of this law; they should also notify the appropriate minister.

2. In case this duty described in clause 1 is not observed the provisions of article 17 shall be applied accordingly."

"Article 25. The decree of February 7, 1991 on foundations, donations and legacies (Law Journal No.15, entry 215 of 1928. No.38,entry 372 of 1947. No.66,entry 400 of 1952. No.25,entry 172 of 1957. No.1,entry 3 of 1964. No.16,entry 94) has expired."

"Article 26. The law enters into life upon its announcement."

2) Articles 2 – 4 and 6 from the law of February 23, 1991 on the change of the law on foundations (Law Journal No.19,entry 82) which say:

"Article 2. Legal proceedings concerning registration of the foundation and its statute in progress on the day of implementation of the law are discontinued."

"Article 3. Local Court of Warsaw – Praga shall pass on the register of foundations run on the day of implementation of the law to the Local Court of Capital City Warsaw."

"Article 4. Corresponding ministers shall deliver the deeds of foundations operating upon the day of implementation of the law within the territory of one voivodship to the corresponding voivodes who shall carry out all duties imposed by the act."

"Article 6. The law enters into force upon its announcement."

Minister of Justice: *W. Chrzanowski*

LAW ON FOUNDATIONS

April 6, 1984

Article 1. A foundation may be set up to realize economically and socially beneficial objectives subject to the essential interest of the Republic of Poland, such as: health care, development in economy and science, education, culture and fine arts, welfare, environmental protection and protection of historical monuments.

Article 2. Foundations may be established by persons independent of their citizenship and place of permanent abode, and by corporate bodies based in Poland or abroad.

Article 3. 1. The statement of will to set up a foundation should be placed in the form of an authenticated deed. This procedure is not requested if the establishment of a foundation is done in the last will.

2. In the statement of will the founder should specify the purpose of the foundation and the property constituents devoted to this goal.

3. Property constituents mentioned in clause 2 are understood as money, valuable papers, as well as movable and real estate property.

Article 4. The foundation operates within the framework of regulations of the said law and the statute.

Article 5. 1. The founder decides about the statute which determines the name, premises and property of the foundation, goals, rules, forms and scope for its activities as well as the composition and structure of the management, its recruitment, responsibilities and rights of the board members. The statute may provide for other regulations, especially these relating to the foundation's economic activities, feasibility conditions for its merger with another organization, the change of statute or objective. The statute may as well provide for the constitution of other bodies within the foundation, next to its board.

2. The founder may pick up a minister suitable for the purpose of the foundation. The founder's statement on that issue should be enclosed with the statute and delivered to the court which runs the register of foundations.

3. The foundation which operates within one voivodship should have premises on the territory of the voivodship covered by its activities.

4. If the statute defines the appropriation of the foundation's property after it has been liquidated, the resources ought to be used according to the purposes stated in article 1.

5. The foundation is licensed to carry on economic activities within the scope necessary to achieve its aims. If the foundation runs any economic activity, the value of

resources engaged in that activity cannot be lower than 10 m PZL.

6. The Council of Ministers may, by decree, determine reductions and exemptions when a foundation uses part of its economic profits to account for statute aims. The reductions and exemptions are then different than these specified by other laws.

Article 6. 1. The founder is permitted to resign from creating a statute on his own, he may appoint another person or corporate body to do so.

2. Regulations concerning the creation of the statute by the founder, following the provisions of clause 1 should be used in that procedure.

3. If the founder established a foundation in his last will and did not define its statute, neither authorized anyone to do so, adequate regulations of Volume IV of the Civil Code on recommendations ought to be applied.

Article 7. 1. A foundation acquires the legal status as soon as it is put on the register of foundations.

2. The register of foundations is run by the Local Court for the Capital City Warsaw, further called "the court".

3. The register is not confidential and open to the third parties.

4. The Ministry of Justice , by decree, determines ways of dealing with the register of foundations, data suitable for record, and its form as well as sets detailed rules for inspection.

Article 8. 1. There are no notarial charges collected for issuing an act which is a pure statement of intention to set up a foundation.

2. Proceedings concerning the register of foundations are exempted from any court charges.

Article 9. 1. The court puts the foundation on the register after it has found out that legal actions constituting a basis for registration have been undertaken by an authorized person or corporate body and that they are legally binding. The court also discovers whether the purpose and statute of the foundation are legal.

2. The court notifies about the registration the appropriate, as for his field of responsibility, minister, called further "the appropriate minister". If the territory of activity is one voivodship, the court informs as well the appropriate, as for the foundation's premises location voivode, called later "the appropriate voivode" and it delivers the statute to him.

3. If the aims of the foundation are related to activities and responsibilities of two or more ministers, the court shall notify the minister with whose field of operation the crucial goals of the foundation are in correspondence, and send him a statute.

Article 10. The management of the foundation governs its activities and represents it outside the organization.

Article 11. 1. Taking up an economic activity not provided for in the statute requires a prior change in the statute.

2. The alteration of a statute requires registration. Provisions of article 9 should be applied consequently.

Article 12. 1. Whether the operations of a foundation comply with the legal regulations, the statute and the purpose for which it was set up is stated by the court in the non-trial proceedings on the request of the appropriate minister or voivode.

2. The foundation is bound to report back to the appropriate minister annually on its activities, the framework for which shall be specified by the Minister of Justice.

3. The reports mentioned in clause 2 should be made available by the foundation to the wider public.

Article 13. The appropriate minister or voivode may pursue a lawsuit to overrule decisions of the foundation's management that remain in an acute controversion with its declared purpose, statute or the existing law. This body is also permitted to address the court to suspend the realization of this decision until the court verdict is proposed.

Article 14. 1.If the activities of the management hinder seriously legal regulations or the provisions of the statute or breach its basic purposes, the body mentioned in article 13 may set the time to remove these inadequacies or demand a change in the management in the given time.

2. After the given time has expired without result or in case the management of the foundation carries on its activities violating the law, statute or the purpose of the organization, the body mentioned in article 13 is licensed to request the court to suspend the present management and to appoint a compulsory manager.

3. The compulsory manager shall represent the foundation as for management duties, court proceedings including; he is also obliged to fulfill any duty necessary for the foundation's functioning.

4. The court shall withdraw its decision about the compulsory management and suspending the previous management as soon as the circumstances prove that activities named in clause 1 have been abandoned.

Article 15. 1. In case the aim for which the foundation was established has been fully accomplished or the financial resources and property of the foundation have been used up, the foundation is due for liquidation according to the statute directions.

2. If the statute does not provide for the liquidation or its provisions in that respect are not put into effect, in all cases named by clause 1 the body mentioned in article 13 addresses the court to effect the liquidation.

3. In all other cases the liquidation provided for in clause 1 may be effected only by provisions of the legal act.

4. If the statute does not specify the appropriation for the remaining financial resources after the liquidation, the court shall decide about that taking into consideration the purpose of the foundation.

Article 16. Acquiring by the foundation by means of legacy or donation of money, other movables or property rights is exempted from the tax on donations and legacies.

Article 17. Any property controversion, in which the foundation is one of the parties shall be investigated by the court.

Article 18. Any time the appropriate minister is mentioned in the act it pertains as well to the director or the

appropriate central office.

Article 19. 1. Foreign foundations which have their headquarters abroad may establish their representative offices on the territory of the Republic of Poland.

2. Setting up a representative office requires a license which at the same time constitutes a permission for activities mentioned in the license. The license is issued by the appropriate, as for the field of operation and foundation's purpose, minister.

3. The license may be granted if the representative office serves the purpose defined in article 1; if the representative office is to run economic activities the provision of article 5, clause 5, first sentence shall be applied.

4. The representative office has to observe legal regulations binding on the territory of the Republic of Poland.

5. The appropriate, as for the field of operation and the foundation's purpose, minister may withdraw the license if the representative office does not keep the conditions of the license or if it seriously breaches the law existing in the Republic of Poland or the interest of state.

6. If the representative office or its mother-foundation

puts the security of the country or any other important interest to risk, the appropriate minister may suspend the license. Such suspension causes , till the decision on the lifting of license is made, an immediate abandoning of the activity provided for in the permission with no compensation for it.

7. The economic activity of representative offices is determined by separate regulations on carrying economic activities by the representatives of foreign subjects in the Republic of Poland.

Article 20. The provisions of this law do not breach regulations of the private international law.

BUREAU DE COOPERATION FRANCO-POLONAISE
DANS LE DOMAINE DE L'ENVIRONNEMENT

Poland

Bernard Kaczmarek

LA GESTION DE L'EAU
ROLES RESPECTIFS DES DIFFERENTS ACTEURS

Le simple fait de vouloir parler de gestion de l'eau peut sembler une gageure. En effet, comment peut-on gérer une ressource naturelle partiellement renouvelable, dont le renouvellement est, bien souvent, indépendant de l'homme, qui est un besoin vital de l'homme, essentiel pour l'économie, catastrophique quand surabondant?

De plus, la multidimensionnalité de l'eau, tout à la fois vecteur, solvant, source de vie, élément fondamental de l'éco-système et enfin, source de richesse artistique, de culture, d'émotion rend cette approche encore plus difficile. Quelle valeur accorder à la beauté d'un lac?

Or, qui dit gérer dit avant tout quantifier, mesurer, peser, accorder une valeur, un prix. Et, pendant longtemps, dans nos pays au climat tempéré, il n'y avait pas besoin de gérer, au moins globalement l'eau; celle-ci était là en abondance, largement disponible à peu de frais, de bonne qualité (au moins le croyait-on). Tout au plus, l'homme a-t-il voulu canaliser ce qu'il appelait les excès de la nature (les inondations) en créant des digues, des retenues. Il ne se préoccupait, par contre, que peu des problèmes liés à l'épuration de cette eau, à la réparation des dommages qu'il lui faisait.

Et puis, les problèmes ont commencé à se faire jour; l'évolution croissante des besoins liés à la demande des habitants des villes et des campagnes, des industries, des agriculteurs, la pollution croissante engendrée ont conduit d'abord à percevoir une insuffisance locale des ressources en eau et très vite une insuffisance globale de celles-ci, soit en qualité, soit en quantité.

Dans chaque pays, sous une forme ou sous une autre, il a été demandé à des planificateurs d'essayer de gérer ces problèmes. Ceci n'était malheureusement pas facile, car soit, il y avait assez d'eau et donc, pas de problème, pas de coût affecté à cette eau; soit, il y avait problème et très vite, celui-ci devenait majeur.

En effet, l'eau est indispensable aux hommes et au développement économique et on ne conçoit même pas en manquer, toute restriction étant considérée comme une atteinte directe à une certaine liberté. De plus, l'eau est bien souvent, considérée au même titre que l'énergie, les télécommunications; elles sont nécessaires dans notre vie professionnelle et personnelle et il suffit d'en produire plus pour en avoir plus. Or, on ne crée pas d'eau, comme on crée de l'électricité ou des lignes téléphoniques. On doit, simplement, se contenter d'utiliser ce qui existe et de l'utiliser au mieux.

Quand les hommes et les structures se sont intéressés de près à ces usages de l'eau, il est apparu très vite que 2 approches pouvaient être utilisées.

La première était purement réglementaire ou juridique: on accordait des autorisations de prélèvement, de pollution et on interdisait, réglementait l'utilisation de l'eau. Mais, de par l'ampleur du problème, des difficultés pratiques (peut-on empêcher un agriculteur de capter de l'eau dans ou pour ses champs?), il est bien souvent apparu qu'il était impossible de mettre un gendarme derrière chaque utilisateur d'eau et qu'il fallait donc trouver d'autres solutions. De plus, le "on" (celui qui accorde ou qui refuse) qui était-il, en quoi pouvait-il accorder à l'un ce qu'il refusait à l'autre!

Une seconde approche a alors été utilisée, en complément à la première; une approche économique: celui qui prélevait l'eau, l'utilisait, la rejetait polluée, ne la rejetait pas était taxé en proportion des dégâts ou des prélèvements faits sur la ressource en eau. En somme, le principe pollueur-payeur qui a été mis en place dans un certain nombre de pays, dont la France et la Pologne.

Mais, encore une fois, combien doit-on payer? Qu'elle est la valeur de cette eau? Faut-il faire supporter au pollueur le coût de la dépollution, alors même que celle-ci est extrêmement variable selon les paramètres, les débits, le temps dont on dispose, l'espace dont on dispose?

Toutes ces questions nous ramènent insensiblement à la question centrale qui se pose ou se posera toujours: qu'est-ce qu'une bonne gestion de l'eau, à laquelle il ne peut y avoir qu'une réponse paradoxale ou une lapalissade: une bonne gestion est une gestion considérée comme telle par l'ensemble des intéressés.

Ce qui signifie une gestion démocratique de l'eau, donc une gestion où chacun a son mot à dire et où il voit que son opinion est prise en compte.

Alors, bien sur, il convient que l'Etat indique ce qui faut pour l'intérêt supérieur et qu'il règle les problèmes avec les pays voisins par exemple. De même, les collectivités locales représentatives élues par les habitants doivent apporter leur contribution. Mais aussi, les utilisateurs, gros consommateurs que peuvent être les agriculteurs irritguants ou certaines entreprises, mais aussi toutes les associations qui estiment que l'eau les intéresse, qu'ils soient pêcheurs, écologistes, animateurs, ou simplement concernés.

Il faut, bien évidemment, que les techniciens apportent leurs compétences, qu'ils éclairent des choix possibles, qu'ils en dessinent les conséquences éventuelles mais il convient de garder à l'esprit que les choix eux-mêmes doivent être opérés par l'ensemble des intéressés et non uniquement par les techniciens.

Et, c'est la base même de la gestion de l'eau que de s'apercevoir que celui-ci doit être avant tout politique, mais politique au sens noble du terme. Cette question politique consiste à opérer des choix souvent difficiles entre usages qui peuvent être concurrents de l'eau.

Ces chois peuvent s'opérer, soit sous forme réglementaire: l'assemblée accorde ou non des autorisations pour l'usage de l'eau, soit sous forme économique: le niveau des taux fixés pour des taxes pour telle ou telle utilisation étant alors une indication indirecte de choix politiques précis effectués par cette assemblée.

En France, un système de gestion de l'eau basé sur ces principes fonctionne depuis maintenant plus de 25 ans à l'échelon du bassin hydrographique, et depuis maintenant 2 ans, les autorités polonaises se sont engagées sur une voie similaire et on peut présenter les principaux principes de cette gestion:

- 1er principe: Les problèmes de l'eau doivent être traités dans le cadre naturel du bassin hydrographique d'un fleuve important et de ses affluents. Ainsi en addition aux circonscriptions administratives qui ne permettaient pas de résoudre le problème dans leur cadre naturel, 6 Bassins (ou groupes de Bassins) ont été créés dont 4 organisés autour des principaux fleuves de France qui sont la Seine, la Loire, le Rhône, la Garonne, les deux derniers bassins couvrant des zones plus petites ou coupées par des frontières: Bassin du Rhin par exemple.

- 2 ème principe: A l'intérieur de chaque Bassin, il existe une concertation étroite entre les corps élus des collectivités territoriales, les industriels, les fermiers, les pêcheurs professionnels, les pêcheurs à la ligne, les écologistes, les représentants d'autres usagers et de l'Etat. Cette concertation permet d'éviter et de régler les conflits concernant les utilisations de l'eau; elle permet d'élaborer les programmes d'aménagement des fleuves et de décider des moyens financiers.

- 3 ème principe: Une solidarité financière a été établie entre les usagers de l'eau et les pollueurs. Chaque dégradation de l'eau ou l'utilisation d'eau est soumise à une redevance financière payée à l'Agence de l'Eau qui fournit une assistance financière aux réalisations concernant la lutte contre la pollution ou les aménagements des ressources en eau. Cette assistance financière consiste en subventions, crédits ou prêts aux organismes publics ou privés qui désirent combattre leur propre pollution qu'ils rejettent, en construisant par exemple des réseaux d'assainissement et des stations d'épuration d'eaux usées.

Un élément intéressant concerne la participation des utilisateurs d'eau à la gestion globale de l'eau. D'abord, il y a 25 an, il n'y avait pas de participation d'associations à caractère écologiques ce qui est loin d'être le cas actuellement dans la mesure où les écologistes participent désormais activement aux décisions petites ou grandes de la gestion de l'eau. Ensuite, au-delà des appréciations différentes des uns et des autres, des procédures de travail en commun ont été progressivement mises au point au plus grand bénéfice commun du Bassin; mieux s'écouter, mieux s'entendre toujours été le but de ces formes. Or, il est très important pour les associations souvent pauvres en moyens de participer pleinement à des prises de décisions financières importantes: le budget cumulé de l'ensemble des Agences de Bassin françaises est de l'ordre de 1, 5 milliards de dollars, alimenté par des redevances dont les taux ont été fixés par les Assemblées de Bassin, et toute décision financière d'octroi d'aides financières est soumise à ces Assemblées de Bassin.

Une critique qui a été faite à ce processus décisionnel est justement d'y avoir associé d'autres représentants que ceux de l'Etat et des collectivités locales qui sont sensés représenter

l'ensemble des composantes de la société. En fait, l'expérience montre que sur des problèmes "ad hoc" comme peuvent l'être les problèmes de l'eau par exemple des intérêts divers peuvent se faire jour et qu'il est, non seulement utile de consulter ces intérêts mais de les faire prendre part aux décisions.

Il faut néanmoins indiquer qu'il y a une contrepartie pour les associations de participer à cette prise de décision: c'est le fait de devoir défendre ces décisions à l'extérieur de l'assemblée auprès de ses propres membres: la base est toujours plus radicale et il faut lui expliquer les avantages qu'il y a eu de peut-être choisir un moindre mal. Participer aux décisions signifie choisir. refuser les choix toujours difficiles, c'est s'enfoncer dans l'inaction et à terme disparaître. C'est pourquoi, il est nécessaire que chacun prenne sa part du travail à effectuer.

Cet essai de participation de la société dite civile en France semble avoir jusqu'à présent parfaitement fonctionné et nul n'envisage sa remise en cause à court ou long terme. On ne peut que souhaiter que, sur la base de principes très généraux comme le sont ceux qui ont été présentés ici, le système de gestion de l'eau en Pologne ou dans les pays d'Europe Centrale et Orientale évolue vers la voie d'une plus grande participation de la société civile aux décisions fondamentales qu'elles soient stratégiques ou tactiques nécessitées par la gestion de l'eau.

Bernard Kaczmarek

SOME PROBLEMS OF WATER IN ROMANIA

Nicolae Găldean

Romania, along with other Eastern European nations, has followed a Soviet- inflounced pattern of economic reliance on heavy industry, concentrating on metallurgy, oil refining and petrochemicals. Industrial output, which appears to have stagnated since the early 198o, also has been characterized by inefficient use of energy and relative neglect of environmental controls.

For Romania, the main potable water resource is formed by rivers (Danut and inland rivers).

Configuration of the hydrographic network and its organisation: 96,9% of the romanian rivers are below 5o km long, 2% between 5o and 1oo km, 1% between 1oo and 5oo km and only o,1% (4 rivers) more than 5oo km. The density of the hydrographic network induces not only the density of human geographic areas but also the polluted ones.

Some 6o% of Romania's territory falls under the incidence of urban influence. A close correlation could be established between the size of the influence zone and the economic and demographic capacity of towns. At the same time, certain areas fall under the incidence, of two or even three urban centres.

Romanian rivers are polluted by waste water discharge estimated at about 1o bil.m^3/year. Of this quantity, only 1o% is adequately treated, 6o% partially treated and 3o% is discharged without any treatment. According to Ministery of Environment Sampling, water quality in 39% of monitored river lengths fall into top category I - suitable for a drinking water supply source with minor treatment, 9% falls into category II - requiring some level of treatment before use and 12% falls into category III - requiring a high degree of treatment. The remainder, 18% is considered unfit (inadequate) for most uses.

Ialomita river is category IV for 52% of its length, the Olt 43% and the Siret 31%.

Extreme water pollution is a local phenomenon concentrated in river stretches downstream of industries and larger cities (Someş downstream of Cluj: at Someşeni; also Someş downstream Gherla and Dej); Vîlsan downstream Brădet village (a sanatorium with sulphur water trstment).

The Danube River enters Romania in poor condition with a river quality of category III. Then, due to its natural self purification capacity, it improves to category I at Turnu Severin but, near the Danube Delta it deteriorates to category II at Tulcea. The Danube provides about 55% (2o bilion m^3/year) of all the developed water resources in Romania. It provides water for domestic, industrial and live stock uses as well as irrigation uses for 2,2 milion ha of agriculture areas.

In general, the water quality is good, however, in certain areas is present the effect due to pollution from tributaries (from Romania, Bulgaria, ...).

The Danube Delta traditionally acted as an environmental buffer between the Danube river and the Black Sea, filtering out pollutants and permitting water quality and natural habitats. Delta is a large wetland with a special importence for the hydrological cycle.

Industry contribute to environmental degradation and accounts for 62% of water.

Industry uses and discharges about 3 bilion m^3 water per year - much of which is polluted. But some major polluting industries have forced to reduce production by between 3o-5o% and, as a consequence, there has been a reduction in industrial waste generation.

The discharge and improper reinjection of saline water from drilling rigs continue to be the major cause of soil and groundwater pollution. The drinking wells are contaminated also with crude oil (Poldeşti and Videle).

In Romania, water use is estimatde at about 36 bil.m^3/year - about 27% of totel water evailable. Inner rivers and lakes provide 13 bil.m^3/year (36%), the Danube River, 2o bil.m^3/year (56%) and grou water 3 bil.m^3/year (8%). The per capita water demand is relatively low being about 89o m^3/cap./year (199o), while for USA it is 2,65o m^3/ cap./year. In the short term, water use is expected to decline with the major reduction being in industry and energy.

agricultural use	59%
industrial use	33%
domestic and municipal use	8%
Acces to safe water urban population	1oo%
rural population	9o%

The use of fertilizer has been one of the lowest in Europe and with price rises its use is likely to decrease furthere in the short term.

Nitrogen can be transported through leaching and erosion and phosphorus by runoff to both surface and underground waters. In the surface waters they enrich the nutrien content (entrophication) and promote algae. The ground waters of southern Romania in particular polluted with nitrates. The anomalies of low fertilizer use and nitra pollution may be partially explained by the relatively low crop yield and use of an estimated 6% excess of nitrogen.

The quality of municipal drinking water supply system is general ly good but a very difficult quastion is the maintaining of this good quality. The phenomena of eutrophication of water resource are freque not only for lakes (especially Danube Delta lakes) but also some rive

This eutrophication is a consequence of the waste water inflow. During summer, algae bloom in the source water creates taste and odor problems.

Most of the dwellers in peri-urban and rural areas (about 46,0%

of population) depend on groundwater for their drinking water source. In some areas ground water is heavily polluted with nitrates, pesticides, heavy metals and other toxic substances.

In about 4o% of the departments (districts) the 15-2o% of the wells are contaminated with nitrogen; in 3o% of the departments, 25-75% and only 3 departments (1o%) are not contamined.

An important source of nitrate pollution is the agriculture: the irrigated areas support this type of pollution.

More than 5oo localities have sewer networks, of which about 2oo have treatment plants.

The largest populations centers (Bucharest, Braşov, Cluj) discharge their waste water untreated.

The Association for the Protection of Consumers has informed in press about some cases of inefficiency in utilisation of treatment installations for drinking water. There were recorded microorganisms and insect larvae, which reveal a poor quality of the water. In some departments the technical equipment for analysis is inadequate or is missing.

The treatment of waste waters was the subject of a national conference (Iaşi, beginning of april, 1993).

There were presented modern techniques and technologies and were discussed the possibilities of collaboration with foreign specialists.

The public accesibility of data concerning the water quality it's rather unsatisfactory. There are some informations in newspapers and magazines and some altempts of NGOS to popularize these informations.

A group of scientists is working to realize the first ecoregional map of Romania which shall allow to do correlations between different natural and anthropic factors affecting the environment.

There has been created a national monitoring system for water quality in slow flux and rapid flux; through analytical sampling and lab analyses, this system constantly determines the values of the quality parameters in the most important river courses and signals accidental pollution.

The Geological Institute from Bucharest realized, in 1992, a stu along the Danube, focused on the presence and concentration of heavy metals, hydrocarbons, pesticides, DDT in the sediments and in the mussel shells and living matter. This research programme was controlled by the Equipe Cousteau.

The amount of Zn is 3.6 higher and Sr amount is 2.2 higher in shells collected from Danube Delta as compared to the similar content in shells from Danube River. The analysis of mussel's living matter indicates that Cu contents are 4.5 times higher and Co is twice higher in the Danube River as compared with the Danube Delta. Pb and Th have been detected only in shells collected from de Danube bottom.

The pesticides content has been under the limit imposed by the norms CEE 86/363.

The romanian specialists are also concerned with biological treatment of waste waters in an integrated part of biotechnology.

There are very important the researches of dr.M.Godeanu who realized a practical method for the treatment with Pistia in a plant from Piteşti (a town with a lot of environmental problems).

The Environment Law, which must be approveed in the Romanian Parliament, has , in the 2nd chapter, a section about the water and aquatic ecosystems protection. It contains specifications about protection of drinking water quality, about wetlands, running waters, lakes, Danube and Danube Delta and Black Sea.

It contains specifications about control and manage waste discharges, effectivness of practices adapted and implemented upstream by local and national authorities, opportunities for the utilization of the aquatic resources.

The essential problem of water quality and water resources must be understood only as a global one, taking into account the fact that any aquatic resource is not a simply reservoir but is an ecosystem.

This means that a river, a lake, an impoundament, a spring, groun water spurce and even a well there are aquatic systems, which are es-

sential not only for thelife of humen beings but also for the life of the nature.

The people are not prepared to understand that in Romenia water is a problem. Everybody think that water is a neverfailing resource. This is an educational issue, and NGOS can do something.

But, the possibilities (capacity) of the NGOS to aquire data about the quality of water are rather bad.

More succesfully, seem to be the attempts to realise a proper data base or to work with people who can observe natural phenomena which are characteristic for the quality of water.

Biological monitoring, based especially on invertebrate benthic groups is in focus hidrobiologists' attention.

In 1992, an ecological expedion, organized by Tisza Club, Szolnok (Hungary) and Liga pro Europa, Tîrgu Mureş (Romenia) along the whole Someş River has proved the utility of such a biological monitoring.

The scientific and practically results of this expeditions were possible because an integralistic approach of the river system was applied.

The collaboration amoung biologists, chemists, ecologists and manager was succesfully.

A lot of indirect effects (because of the action of anthropic agents as hydroenergetical damms, managements in respect of irrigations, regularization and sewerage, operations of the ballast) can be more easily analysed.

Another roumanian NGO, People and Environment from Ploieşti, organized First international search expedition for Romanichthys valsanicola (a relict fish from Vîlsan River). The result of this expedition will be used for the monitoring of a polluted zone (Vîlsan is a tributary of Argeş River).

The NGO Danube Forum Experts meeting (Bucharest, nov.1992) established some possibilities of collaboration in support of policies which put the public interest first. Complete, accesible, international-

ly compatible data about pollutant levels in all media and in all part of the Danube Pasin are necessary.

The need for monitoring and evaluating hydrological data throughout the basin as part of an information system supporting environmental decisions should be stressed.

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Some problems of water in Romania

NICOLAE GALDEAN

(abstract)

For Romania, the main potable water resource is formed by rivers (Danube and inland rivers).

At a governamental level has been created a national monitoring system for water quality in slow flux and rapid flux; through analytical sampling and lab analysis, this system constantly determines the value of the quality parameters in the most important river courses and signals accidental pollution.

The Environmental Law, which must be approved in the Romanian Parliament, has, in the 2nd chapter, a section about the water and aquatic ecosystems protection. It contains specifications about protection of drinking water quality, about wetlands, running waters, lakes, Danube and Danube Delta and Black Sea.

In Romania, water use is estimated at about 36 bil.m^3/year. Agricultural use represent 59%, industrial use 33%, domestic and municipal use, 8%. The quality of municipal drinking water supply system is generaly good but a very difficult question is the maintaining of this quality. Most of the dwellers in peri-urban and rural areas (abou 46,8% of population) depend on groundwater for their drinking water source. In some areas groundwater is heavily polluted with nitrates, pesticides, heavy metals and other toxic substances. In about 4o% of the departments (districts) the 15-2o% of the wells are contaminated with nitrogen; in 3o% of the departments, 25-75% and only 3 department are not contamined. An important source of nitrate pollution is the agriculture; the irrigated areas support this type of pollution.

A very difficult problem is the treatment of waste waters. Romanian rivers are polluted by waste water discharge estimated at about 1o bil.m^3/year, Of this quantity, only 1o% is adequately treated 6o% partially treated and 3o% is discharged without any treatment. Extreme water pollution is a local phenomenon concentrated in river stretches downstream of industries and larger cities. Industry contribute to environmental degradation and accounts for 62% of water. Some areas are contaminated with crude oil.

The phenomena of entrophication of water resource are frequent not only for lakes (especially Danube Delta lakes) but also for some rivers. This entrophication is a consequence of the waste water inflow

In the management of water resources there are signaled some indiscipline actions as a consequence of the insufficient applying of the laws (it's the situation of the Alba department where, the unsatisfactory chemical treatment of the drinking water unleashed an epidemic disease).

The people are not prepared to understand that in Romania water is a problem. Everybody think that water is a neverfailing resource.

The possibilities of the NGOS to acquire data about the quality of water are rather bad. More succesfully seem to be the attempst to realise a proper data base or to work with people who can observe natural phenomena which are characteristic for the quality of water.

There are to mention the lack of founds for the NGOS which can b interested in the problem of water, lack of cooperation between the authorities and NGOS, lack of efficient cooperation between NGOS.

FONDATION ECOLOGIQUE DE BUCOVINE
str. Alex. cel Bun, 24,
bloc H3, sc. A, apt. 7,
5800 SUCEAVA - R O M A N I A

MUTATIONS SIGNIFICATIVES DANS LA PATHOLOGIE HUMAINE EN CORRELATION AVEC LA DEGRADATION DU MILIEU AMBIANT DANS LE N - E DE LA ROUMANIE

Dr Ioan IETCU, médecin à l'hôpital de Suceava,
Dr Eduard VARZARU, médecin à l'hôpital de Suceava,
Ing Iluta COCRIS, expert à l'Agence pour la Protection du Milieu de Suceava

Sans aucun doute, "l'eau est-elle le miroir de notre avenir". On s'y intéresse de plus en plus: "l'eau de tous est l'eau de chacun", l'eau - tout comme l'air - est un élément essentiel à la vie. La crise de l'eau douce, sous son aspect quantitatif, n'est plus un secret depuis longtemps, mais l'homme simple en sait moins. Quant à sa qualité, le problème n'a guère moins d'importance. La contamination des eaux de surface et, plus récemment, des eaux souterraines également, est la cause de certaines maladies contagieuses hydriques et d'aspects de pathologie faisant tache dans la pathologie classique qui ne connaissait que tout à fait accidentellement la contamination chimique, sans parler de la contamination avec des radionuclides.

Nous allons vous présenter quelques données concernant les conséquences de la pollution chimique chez nous de ce solvant universel qui est l'eau.

La région de Suceava (la Bucovine), que je représente en tant que médecin et écologiste, est située au N - E de la Roumanie, étant couverte en proportion de 52% par des forêts et étant assez riche en eaux de surface, à faible débit quand même.

Les trois dernières décennies d'avant décembre 1989 ont connu un développement anarchique et anti-écologique de l'industrie chimique dont l'emplacement fut le centre même de la ville; elle n'était pas prévue de moyens de protection et de dépollution, très coûteux. Les effluents polluants, à

un débit de 2,6 mc/sec., étaient déversés dans la Suceava, dont le débit est souvent inférieur à 2 mc/sec., ce qui fit que la rivière devint sur une grande distance un canal collecteur abiotique. La pollution la plus grave de cette zone industrielle venait de l'Usine de soie artificielle à base de cellulose, ayant une productivité basse à des coûts très élevés; éléments polluants: S_2C, H_2S, mercaptans etc. Les médecins remarquèrent des modifications surprenantes dans la structure de la morbidité à des âges de plus en plus bas.

Dès 1988, dans une communication présentée à l'occasion des "Jours académiques" du centre universitaire de IASI, nous attirions l'attention sur la fréquence inquiétante des polyneuropathies toxiques, de certaines maladies neuro-psychiques, génitales, d'endocrinologie, du sang, ainsi que sur des accidents de travail parmi les trois mille ouvriers de l'usine; la relation avec la pollution dramatiques des eaux, de l'air et du sol était évidente. La situation était connue et se trouvait à l'origine d'un état de tension toujours plus intense dans la population. On ne pouvait rien faire: officiellement on n'admettait pas l'idée de la pollution et on rapportait les maladies professionnelles sous d'autres noms. Des trois mille ouvriers, mille partaient ailleurs chaque année, mais leurs places étaient acceptées par d'autres à la recherche de travail. Immédiatement après décembre 1989, l'usine fut fermée; les ouvriers des sections en danger reçurent d'autres travaux, après que les autorités eurent déclaré la ville de Suceava "zone de désastre écologique" par le risque sulfocarbonique.

Deuxième aspect significatif: dans le cadre de la Conférence écologique nationale de Suceava, 1990, on a présenté la communication "Incidence de la pathologie cancéreuse génitale et de la glande mammaire avant et après l'accident nucléaire de Tchernobyl" dans un territoire incluant aussi les régions se trouvant autour de nous. A partir d'examens histologiques rigoureux, ce travail relevait qu'après l'accident en discussion les cas de cancer génital et de la glande mammaire sont deux fois plus nombreux; on y présentait l'analyse de 1883 tumeurs bénignes et malignes. Les détails pourraient faire l'objet d'une discussion de stricte spécialité.

Troisièmement, en septembre 1991 a lieu à Suceava le Congrès national d'urologie. Entre autres, on a présenté la fréquence particulièrement augmentée du cancer de la vessie urinaire dans la ville de Suceava par rapport à la région avoisinante. On ne put s'empêcher de ne pas se rapporter à la pollution chimique locale, vu que les effets de Tchernobyl avaient été sensiblement les mêmes dans tout l'est et le nord-est de la Roumanie prékarpatique. On fit aussi, pour la première fois, des remarques sur la fréquence, inconnue antérieurement, du néoplasme du côlon.

Quatrième et dernier exemple: en pleine région montagneuse, dans la vallée de la Suha, dont les exploitations minières des monts Calimani

(minerais de sulf, de baryte) font le bassin hydrographique, il y a tout récemment des cas de maladies de la peau et des cheveux, ainsi que d'autres dystrophies chez les enfants. Le résultat des recherches n'est pas encore établi, mais les conclusions mènent à incriminer l'excès de barytine dans l'air et dans les eaux de la région.

Ce ne sont que quatre des nombreux exemples d'implication de la pollution des eaux, de l'air et du sol dans la détermination de certaines maladies endémiques graves.

Evidemment, "nous aurons le destin que nous aurons mérité", de tous les points de vue, y inclus celui de la survie dans un milieu naturel toujours plus artificiel où l'on "respire", "boit" et "mange" de l'industrie à l'intérieur du conflit technosphère - biosphère, arrivé au paroxisme. A la dispute planétaire N - S en plan industriel s'ajoute le conflit O - E en plan d'écologie et de pollution, mais on ignore qu'à une pollution transfrontalière il faut opposer une écologie sans frontières. Malheureusement on n'oppose pas une écologie efficace de niveau global à l'extension globale de la pollution des eaux, de l'air, du sol et à la dégradation précipitée du milieu, même si moins d'une année s'est à peine écoulée depuis cette rencontre sans précedent qui fut l'„ecological summit" de Rio.

Dès 1968 et en donnant suite à la Recommandation de l'Assemblée parlementaire du Conseil de l'Europe sur la lutte contre la pollution des eaux douces, le Comité des ministres a adopté "La Charte européenne de l'Eau" pour une meilleure préservation et gestion des ressources d'eau et a envisagé pour 1993, en prévision de l'achèvement du Marché Unique, la mise en place d'une véritable politique intégrée européenne de l'eau avec l'aide des organisations internationales, des gouvernements, des autorités locales et régionales, des ONG, des spécialistes, du public etc.

En gérant la crise de l'eau, l'Europe se préparait à gérer l'eau même, tandis qu'en Amazonie les forêts, l'un des deux poumons de la Terre, sont incendiées par les garimpeiros, des Blancs déclassés qui, tout en extrayant de l'or illégalement, empoisonnent les eaux avec du mercure et font passer aux tribus primitives d'yanomamis, récemment découverts (1961), des maladies inconnues: le paludisme, le SIDA, des maladies vénériennes et le monde civilisé assiste impuissant à ces écocide et génocide comme dans un film de Hitchcock.

Il faut connaître et faire connaître les risques et les conséquences de la pollution multiple de l'eau par les rejets d'eaux usées non traitées, par les infiltrations souterraines de déchets mal stockés, par les accidents d'une industrie polluante que l'homme se proposait de transférer dans le cosmos dès 1974 (la revue "Spaceflight", Ing G. H. Stines).

Pour protéger les générations à venir dentre la raréfaction du capital d'eau, il faut réaliser une discipline d'avenir par une bonne connaissance

de la place de l'eau dans le monde et de son prix pour l'homme.

Le pénultième accident nucléaire - celui de Tchernobyl - montra que non seulement les polluants chimiques, mais les radioactifs également subissent un processus de concentration biologique dix, cent, même mille fois plus important pour les bêtes, les plantes et l'homme par rapport au milieu ambiant. Il était bien normal qu'on assistât à toutes sortes de désordres et à une anarchie dans la multiplication des cellules avec des conséquences connues: accroissement du taux des malformations congénitales, des tumeurs bénignes et malignes, des décès subits, inexplicables, chez des individus sans antécedents pathologiques.

Le coût de la civilisation que nous bâtissons est de plus en plus élevé. La capacité naturelle d'épuration de l'eau et de l'atmosphère est par trop sollicitée à cause de l'industrialisation excessive, de la protection insuffisante du milieu, auxquelles s'ajoute la réduction de la capacité de philtre naturel à cause de la déforestation (diverses maladies et mort des forêts).

Dans le département ouest du nôtre, l'usinage des suffures métaliques est devenu la principale source antropogène de pollution avec des métaux lourds: Cu, Pb, Zn, Cd, Cr, Co, Ni, qui se déposent sur le sol, étant ensuite lavés par les eaux de surface. Conséquence immédiate: les collègues de cette région-là ont décelé des cas graves d'anémies, de maladies hépatiques, rénales, des muscles; plus vers l'ouest, au centre même de la Transylvanie, à Copsa Mica, autre zone de désastre écologique, la complexe pollution acquit une résonance européenne à cause de la morbidité et de la réduction significative de l'espérance de vie (de 4 - 5 ans).

Les activités économiques deviennent de plus en plus inacceptables du point de vue de l'écologie et, si la pollution est par endroits réduite en Roumanie, ce n'est que le résultat de la récession économique. Chez nous on ne réalise un contrôle des métaux lourds et des autres matières toxiques que de manière discontinue, non systématique. L'urbanisme, vrai mirage pour la génération d'après la guerre, est devenu de nos jours un piège. L'industrialisation, l'„enfant prodige" d'un pays principalement agraire, tel que l'était la Roumanie, est devenu un monstre, un apprenti sorcier, surtout que l'homme se conduit d'après les conceptions les plus utilitaires. L'écologie est très coûteuse. Mais à Bergen, en Norvège, l'on a récemment ditque "l'écologie ne devrait pas être seulement un chapeau de mendiant où, de temps à autre, les gouvernements jettent un sou". Il s'impose des mesures efficaces, tout au moins à l'échelon continental, pour améliorer la santé du milieu, mesures qui aillent de pair avec des mesures locales.

La ville de Suceava a perdu le privilège de la triste célébrité dont parlait le journal "Svenska Dagbladet" en février 1990, mais il y a encore

de graves aspects concernant la pollution des eaux de surface même avoir stoppé la pollution sulfocarbonique qui dépassaient les concentrations admises de dizaines de fois en ville et de centaines de fois à l'intérieur de l'usine.

A cette fin de millénaire, l'on peut éprouver le sentiment d'une imprévisibilité certaine quant à notre devenir. Cependant il y a en Europe des tendances qui nous permettraient d'imaginer les environnements futurs de notre continent, de l'Atlantique à l'Oural. On devrait s'attendre à une Europe"plus verte", ayant plus de territoires boisés et des parcs nationaux réellement efficaces, une agriculture à même de faire resurgir des activités agro-sylvo-pastorales où les paysans assumeraient le rôle principal de protecteurs d'un environnement harmonieusement "humanisé", avec des surfaces agricoles moins étendues mais exploitées de manière intensive afin d'éviter les excedents qui pourraient obérer nos politiques agricoles. Par conséquent, sur l'ensemble européen il y aurait moins de fertilisants, de pesticides, d'herbicides, donc une moindre pollution des eaux de surface et souterraines. Mais il est peu probable que l'aube du troisième millénaire trouve un monde idéal, du point de vue de l'écologie également, sur cette planète tellement saccagée.

Les stratégies d'un développement durable doivent satisfaire les générations actuelles sans compromettre celles à venir. Un développement durable doit protéger les ressources naturelles et le milieu physique, mais en même temps le développement économique et l'évolution humaine prochains. La pauvreté est l'un des dangers le plus à craindre pour le milieu. Dans bien des pays, elle est la cause du déboisement du sol, de l'apparition de zones désertiques ou salines, d'assèchements et de dépollution insuffisants et la détérioration du milieu accentue la pauvreté: et voilà le cercle vicieux.

La participation des ONG est extrêmement importante et rentable grâce à une assistance spécialisée et à des aides financières. Les intérêts économiques, écologiques et biologiques sont communs. Assurer en perspective la sécurité écologique mondiale est possible non pas par séparation N - S ou O - E, mais tout au contraire par l'accomplissement d'un liant écologique unificateur.

Bien que dans de nombreuses villes de la Roumanie il y ait de sérieux problèmes d'ordre quantitatif concernant l'alimentation avec de l'eau, de ce point de vue notre département de Suceava n'est pas confronté avec des difficultés dramatiques. Il y a suffisamment de ressources dans les eaux de surface; les problèmes apparaissent dès qu'il s'agit du réseau de distribution qui - hélas! - est mal adapté, dégradé, dépassé. Il nous manque les moyens techniques de laboratoire pour réaliser des déterminations physico-chimiques, biologiques, bactériologiques et de la radioactivité. Il

nous est impossible de déterminer la présence dans l'eau des pesticides, des métaux lourds, des cyanures, des phénols, des hydrocarbures. Notre espoir le plus grand serait de nous faire inclure sur la liste des bénéficiaires de ce forum international auquel nous prenons part avec beaucoup d'intérêt et de confiance.

Nous vous remercions!

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Jufit S.S. Russia

Purification of Drinking Water in the Russian Federation. Water Chlorination and the Problem of Dioxides

1. We are drinking not natural water polluted with impurities, but sewage diluted with natural water.

   Numbers: Don River Water intake - 64% of annual sewage. Pollution sources: 100 industrial enterprises, mines, agricultural complexes. Impurities: copper, petroleum products, phenol, organochloric compounds, metaphosphates.

   Kuban River: in 1991 80% of sewage was taken in (copper, petroleum products, nitrogen in the form of nitrates)

   Volga River: 38.6 KK or 33% of the total water intake of Russia.

   Ural River: water intake - 26% of sewage

   Terek River: water intake - 68.5% of sewage

   Northern Dvina River Basin the rivers Pielmsha and Puksa: ammonia nitrogen, phenol, sulfolignin (up to 50 - 100 of the maximum allowable concentration)

   (Bacteriological) infection from infection sources:

Kalmutsya	85.7%
the Briansk district	67.2%
Yakutsya	66.4%

   Saint Petersburg 62% (the Leningrad district 21.4%)

2. Virus hepatitis A as an indicator of pollution of drinking water. In 48% of the examined towns the drinking water did not meet the GOST requirements (110 bacteria in 1 cm^3), in the Scandinavian countries virus hepatitis A is 1 per 100,000 people, nearly exclusively in visitors from abroad. In Ukraine (1991) 10:100,000 people, Middle Asia - 1000:100,000 people.

Russia: 87.9% of all viral disease is hepatitis A: 157.1 per 100,000 people. The highest sickness rate - in Tuv 530.9, the lowest - in the Tamb district - 68.1 per 100,000 people.

3. Chronology of ecological disaster in Ufa.

   Drinking water - phenol - chlorine - chlorophenols - dioxides (?)

4. Archangel. Occurrence of contagious diseases 40 per 1000 inhabitants (1990); primary: 125.2

   In the Northern Dvina river basin - cellulose-paper industrial complexes and intense floating of timber. Large areas of forest are flooded. This leads to accumulation of phenols in river waters. Only part of the sewage is purified, which causes immense overstepping of the maximum allowable bacterial concentrations of rivers (by thousands of times). For many years now swimming has been forbidden in the Northern Dvina within the city. In river deposits in the city center, dioxides have been found in an amount 1000-times in excess of any norms.

5. To chlorinate or not to chlorinate? Alternative projects for waters highly polluted by organic substances (all the northern rivers of Russia).

6. Dioxides as a problem for Russia. The state of legislation. The analytical base. Education. Dioxides and hepatitis. Dioxides and radioactivity.

Doctor of Chemical Sciences

Yufit S.S.

Russia

RADIOACTIVE POLLUTION OF THE ECOSYSTEM OF THE RIVERS TOM AND TECHA

M.V. Khotuleva, V.A. Chechotkin

V.A. Sieriezhenkov, N.A. Milenichenko

1. In the years 1992-1993 the Social-Ecological Union carried out on its own a complex assessment of the radioecological state of the rivers Tom and Techa. Both rivers essentially constitute one water network - a part of the Ob river basin. The pollution of the ecosystem with radioactive artificial and natural nuclides was studied. Special emphasis was placed on investigation of the pollution with nuclides that emit α particles.

2. The pollution of the Techa River was tested near the Muslimovo settlement in the Celiabinsk district and the pollution of the Tom River below the settlement of Chernilshchikovo up to the mouth of the Ob River.

3. Studies of the Tom River ecosystem showed that near the Chernilshchikovo settlement the levels of pollution with artificial radioactive nuclides are quite high. The presence of cesium-134, 137, europium-152, manganese-54, zinc-65, cobalt-60, strontium-90, plutonium-239 was found.

Radiographic analysis of water samples from the Tom River below the Chernilshchikovo settlement up to the confluence with the Ob River, conveyed by NIIBB employees, showed that all samples are significantly polluted with decaying elements. In addition, these were found on the scales of some fish in the form of small particles glued to the surface. In one sample a diffusive decomposition of decaying elements according to structure was found. Unfortunately, the material submitted to us did not allow for identification of the sources of radiation or quantitative

measurements due to the small weighed portion.

Fish samples (bream) taken from the Tom River are characterized by a high concentration of artificial radioactive nuclides. Some of these nuclides have a small radioactive half-period and quite hard gamma radiation energy (cobalt-60, zinc-65). In the fish scales decaying elements were also found. At the same time, the people actively make use of the river for fish breeding.

4. Pollution of the ecosystem of the Techa River with artificial radioactive nuclides has been examined in detail on the example of the Musliumovo settlement. It was shown that the deposits of overflow land are highly polluted by artificial radioactive nuclides. They contain large quantities of cesium-137, strontium-90 and plutonium-239.

By radiographic methods it was shown that the decaying elements can be found in the deposits of overflow land and silt, as well as in plants occurring on the overflow land and in the fish scales. No plutonium was found in the water of the Techa River.

5. The effect of radioactive pollution on the population inhabiting the banks of the river has been shown on the example of the Musliumovo settlement by ERP biodosimetry, radiochemistry and radiography.

Social-Ecological Union
Center for independent ecological programs

POLLUTION RADIOACTIVE DE L'ECOSYSTEME DES RIVIERES TOM ET TETCHA

M.W.Chotulewa, W.A.Czeczotkin, W.A.Sieriezenkow, N.A.Mielniczenko

1. Dans les années 1992-1993, L'Union Socio-écologique a effectué par ses propres moyens un examen radiologique complexe des rivières Tom et Tétcha. En fait, les deux rivières constituent un seul réseau hydrographique - une partie du bassin de l'Ob. L'examen portait sur la pollution de l'écosystème par les radionuclides artificiels et naturels, et notamment par le nuclides émettant des particules gamma.

2. La rivière Tétcha a été examiné aux alentours de Mouslioumovo, dans la région de Tcheliabinsk. La rivière Tom a été examinée en aval de Tchernilchtchikovo et jusqu'à l'embouchure de l'Ob.

3. L'examen de l'écosystème du Tom a révélé des taux de pollution importants aux alentours de Tchernilchtchikovo. On y a découvert césium-134, 137, europium-152, manganèse-54, zinc-65, cobalt-60, strontium-90, plutonium-239.
L'analyse radiographique des échantillons de l'eau de Tom pris entre Tchernilchtchikovo et l'embouchure de l'Ob et transmis par les employés de NIIBB a démontré que tous les échantillons sont pollués d'éléments en désintégration. On les a trouvés également sur l'écaille de certains poissons sous forme de particules collées à la surface. Dans un des échantillons on a constaté la désintégration d'éléments par diffusion selon la structure. Hélas, l'échantillon dont nous disposions ne nous a pas permis d'identifier la source de

radiation ni d'en effectuer des mesures quantitatives, à cause de sa pesée minimale.

Les poissons (brème) pêchés dans Tom sont caractéristiques par une concentration importante de radionuclides artificiels. Une part de ces nuclides se caractérise par une courte période de radioactivité et par une énergie assez dure de rayons gamma (cobalt-60, zinc-65). L'écaille de poissons abritait également des éléments en désintégration. Il faut signaler que la population locale utilise la rivière à la pisciculture.

4. Le degré de la pollution de l'écosystème de Tétcha par radionuclides a fait l'objet d'examen minutieux dans les environs de Mouslioumovo. Il s'est avéré que les dépôts d'inondations sont fortement pollués par des radionuclides artificiels qui contiennent des quantités importantes de cesium-137, strontium-90 et de plutonium-239.
Des méthodes radiographiques ont permis de prouver de l'existence d'éléments en désintégration dans les dépôts d'inondations, dans les argiles, dans les plantes sur les terrains d'inondations et dans l'écaille de poissons. La présence de plutonium n'a pas été constatée dans Tétcha.

5. L'influence de la radioactivité sur la population riveraine est démontrée sur l'exemple de Mouslioumovo à l'aide des méthodes de biodosimétrie ERP, radiochimie et radiographie.

Union Socio-écologique
Centre de programmes écologiques indépendants

D-r-Eng. V.Maksimchouk
Ukrainian ecological association
"Zelenij svit"

Ukraine experience in the struggle for renaissance of Dnieper river and protection its water resources against pollution and exhaustion.

Ukraine inherited from the Soviet empire degradating ecosystems, polluted environment that caused in result exceeding death-rate upon birth-rate of the population.

Oversatiation of the Ukraine by the ecological dangerous enterprises with non effective or not acting purifying structures, erosion and exceeding tillage caused the extintion the lots of small rivers,diminishing the water resources and change for the worse of its quality.Now there are situation that all the rivers of Ukraine does not correspond to the demands for the drinking water supply sources.

It was turned out that the largest river of Ukraine -Dnieper (the third of the greatest Europian rivers) is in the state of ecological collapse.

Beginning in Russia and crossing Belorussia,Dnieper river is 2201klm. in lenth and more than half of that lenth belong to Ukraine.The total area of the river water-shed is 505,8[illegible] thousand sq.klm. and 294,5 of them are the ukrainian territory, where 35 million population live.

Now the river within Ukraine is completely regulated by six dams and is transformed into the chain of the artifficial lakes - water reservoirs with the total volume of water in 48cubic klm. This circumstance tothether with an extencive and unecological economy results in aggravating ecological situation on the Dnieper

and the neighbouring lands.

The shallow water and swamp lands were formed instead of the preveously froutful soils on more than 200 thousand hectares.They are the field of action of the poisonous blue-green seeds and eutrofication of waters.

The regime of the stagnant waters results in accumulation of harmful substances,esspecially salts of the heavy metals,mineral fertilizers,oil products,fenols and pesticides.The quantity of the effluents is 21cubic klm. now,that is more than one third of the annual water discharge.Moreover the volume of untreated waste waters increases from year to year.Polluted waters that come from Belorussia and Russia make the Dnieper river renaissance an international problem.

The Chornobil catastrophe did great harm to river.The main part of its water-shed feels radioactive pollution,the bottom of the Dnieper water reservoirs are now consisted of the radioactive silt deposits (for example - Kiev water reservoir has 100million ton of such a silt).

Taking into account the influence of ecological situation upon the health of the ukrainian population,the need of conservation of historical and cultural environment of Ukraine the scientists,writers and lovers of nature several years ago orgenized the public Commitee of the Dnieper renaissance and renewal of the other rivers of Ukraine that became the collective member of the Ukrainian ecological assotiation "zeleniy svit".

The mmmm necessity of creating such a commitee was caused by the following circumstances:

- By the antiecological developement of productive forces that was supported and approved by official representatives of the Ucrainian academy of sciences and esppecially by Ministry of irrigation and water menagement and Ministry of energy and electrification.It is a

pity that such a tendency survived among officials of these ministries up to now.

- By the governmental goal to construct in the estuary of Dnieper the gigantic dam that would lead to the final collapse of the water ecosystems in that region and in the near-by regions of the Black sea.
- By systematic concealment from population data about ecological situation in the Ukraine.
- By changing to the worse in drinking water quality in municipal water-supply networks.
- By increasing from year to year the volumes of captured waters from already exhausted Dnieper,by abundant irrigation of lands tht causes their salting and lossing fertility.

The Committee of Dnieper renaissance carried on its struggle for renewal of the river through mass media,ecological meetings, scientific conferences and expeditions,by petition to government and by organization of local ecological groups.Now the wide social layers and some people in the government are understanding that Dnieper river are on the edge of the ecological catastrophe,that there is an acute neccessity to trasfer from extensive to economized water consumption adapted to the preservation of nature.

The programme of action for Dnieper renaissance was developed and throuhh mass media was let to know to the sivil sotiety and the government that the following practical steps are needed:

- The full cessation of throwing off the untreated water -wastes in Dnieper.
- The little by little elimination the four of the six artifficial Dnieper reservoirs and renewal river self-purification ability.
- The evacuation of the radioactive silt deposits from the bottom of the Kiev water reservior.
- The cessation of increasing fresh water consumption from Dnieper

the transition to water-closed and dry technology in industry and "small-water" methods in irrigation.

The creation of water protective forest strips on all the river banks and creation of the two Dnieper national parks.

- The signing of the state treaties between Belorussia and Russia about protection of the water recources of Dnieper.

-The creation the modern water legistration with the clean definition of ecological crimes.

-The obligatory public expertise of all projects of hydraulic engineering in Ukraine.

-The systematic ecology education of school age and adult populati[illegible].

The main results of the work of the Committee and other sivil society organizations,scientific institutions and through our lobby were:

1.The cessation of building of the channel Dnieper-Danube and Dnieper-Boug dam.

2.The cessation of abundant developement of irrigation and drainage.

3.The public expertise of the series of dangerous projects on small rivers.

4.The creation of the governmental Extraordinary commission on problems of ecological condition of Dnieper and drinking water.

Our main opponentare as previously The state committee of water menagement and Ministty of energy and electrofication.

Our main governmental colloborators are The ministry of environment and Extraordinary commission on Dnieper but even among them we do not meet the perfect understanding of the necessity to eliminate the Dnieper artifficial reservoirs.For that reason we need to exchange experience and to organize colloboration with International river network and other international civil society instititions.

For putting into operation the practical actions for the struggle

with the radioactive pollution of Dnieper and renewal of the small river we feel the need in financial sponsor support from UNDP and other international organizations.

We feel deficiency in our connections with some local ecology groups for pursueing common actions against not permitted throwing-off untreated effluences and for creating water protective forest strips on the river banks.

Too our deficiency is the unadequate propaganda through televisio the ecology culture among children.

And of course we have the acute need to build the working partnership with NGO in neighbouring states with whom we have common rivers.

PhD Pavlo Zhovnirenko
Head of the Project
"Krynka-river-2000"'
Ukrainian Environmental
Association "Green World"
Adviser of the Head of
Parlamentary Commission
on External Affaires

Mr Chairman, ladies and gentlemen,

I am very pleased to be able to be here and address the distinguished participants of this seminar. The theme of the seminar is of crucial importance to all of us and looking through the programme and the list of participants listening of the first speakers I am convinced that the outcome of our meeting will be a very valuable contribution to the improvement of the environmental situation in the Central and Eastern Europe.

Until the recent data of the shoking results of environmental studies which was published after proclamation of independence, Ukrainians had been sure they were drinking the cleanest water in the world, breathing clean air and eating healthiest food. It turned out that the levels of nitrates in vegetables and fruits sold in markets and shops were sometimes 200-300 times higher than the acceptable level.

They discovered that over the last few years, thousands of small rivers have dried up and nine out of ten rivers are seriously polluted due to the indiscriminate exploitation of farmland, excessive ploughing of river banks and the overuse of poisonous chemicals. Also, due to a lack of sewage installations over 7,8 billion cubic metres of industrial and sewage wastes are being discharged annually into Ukraine's rivers and lakes.

Exluding Chernobyl region, the most serious - I evev want to say the most catastrophic situation is in the Eastern Ukraine, in so cold Doubass region - the centre of coal, metallurgic and chemical industry, where a concentration of industries and consequently a level of environmental toxicity per square metre is 10-15 times higher than the average for the rest of Ukraine.

Practically all Donbass territory is poisoned and not only surface of the earth: 4 years ago tens of miners in Horlivka-city were poisoned, and 3 of them were died, by the phenol, which passed about 1500 metres from military chemical plant to the miner's working places.

The Asov Sea where all rivers of Donbass are flowing and which about 15-20 years ago provided more fish than all other water of the Soviet Union, is duing. There has been no commercial fishing there for several years and practically all seaside areas are closed to holiday-makers.

Given long-standing policies calling for rapid industralization and increasing agricultural production the main priority has been development with little regard for the people themselves or the natural environment. One of the characteristic slogans was: "Don't wait for the favours of nature, we must take them by force."

As a result, workers were settled near metallurgical and chemical plants whose wastes were not purified. The construction of super powerful hydroelectric schemes on unsuitable rivers produced artificial dirty lakes 1-2 ,metres deep which flooded thousands of acres of fertile land.

Because land and water were - and still are - considered "public property" and thus regarded as free, there was no way to measure their destruction or rehabilitation in financial terms because officialy there was no financial loss for something that had no value.

There is practically no legislative mechanism effectively governing environmental protection. Laws were passed but almost nobody implemented them, and nobody monitored their implenautation. More than a half of pure environmental budget of Ukraine are using for payment of thousands of officers in the system of Ministry for Env. Protection, majority of them are not specialists but former communist and military functionary.

Today, the growing awareness of ecological deterioration has prompted emerging environmental organizations to unite under the umbrella of Zelenyi Svit (Green World). One of them is "Project Krynka-river - 2000" and I am a head of this project.

Krynka is a small, 160 km lengthwise river. Why we have choosen only Krynka? At the first, we can think about purification of all rivers in country but as to me we must begin from one of them. Secondly, Krynka is one of the most polluted river in Donbass. And finally I spent my childhood at its banks , my parents are

living there and I want to give possibility may be not to my children but grandchildren to swim there. So, I have my private interest there.

What is the main idea: how to regenerate Krynka-river? To prevent dumping of pollutants to the river - it means to construct or modernize purification systems in all plants, farms and cities at the Krynka basin and after this - to purify a riverbed. The main problem is a lack of money in the situation of economical crisis. Now all local authorities are preparing answers on our special questionaires. After that we will know how much money for the project they have and what is shortage of money. Then we will send our applications to such state bodies like Ministry for Environemntal Protection, Ministry of Health, to financial organizations in Ukraine, to foreign and international environmental organizations. We are organizing absolutely independent nongovernmental special foundation with not more than 2 employees with such main tasks: to find money and to use them only for elaboration and realization of the project.

It is not only technical, financial or environmental project. Nothing can to join different people as a common goal and common enemy. In realizarion of the project are deep cooperating democrates and communists, who didn't want even contact each with other for years. They all understand that we all and our children are equal as simply persons, we all need fresh air and clean water.

In the process of implementation of the project we integrate possibilities and forces of different institutions: environmental groups, state bodies, local authorities, project institutes, enterprises, financial institutions. Each of them has its own interest but their realization depends on the realization tha main goal: regeneration of Krynka-river.

The main difficulty of the project is that it is firs in Ukraine and nobody can help us by advice. We have to construct the whole working mechanism by ourselves. But we understand that we are not only helping to Krynka-river, we also and may be first of all are elaborating a model, which can be useful for regenerating other rivers in Ukraine and not only in Ukraine.

Water Supply and the Living Standard

A paper on the condition of water supply in Riga, capital of the Republic of Latvia

This paper has been prepared on the basis of the "Drinking Water" project developed under the decision no 800-p of the Municipality of Riga dated 4 December 1990 by a working group composed of:

U. Bambe	- Manager, Riga Water and Sewage Management Authority,
W. Juchna	- Chief Engineer, Riga Water and Sewage Management Authority,
M. Cepuritis	- Engineer, Technical Department of the Riga Water and Sewage Management Authority,
A. Jakovskis	- Engineer, "Daugava" Experimental Station, Riga Water and Sewage Management Authority,
A. Brambis	- Chief Expert for Water Supply, "Pilsietprojekt" Institute,
G. Pafiorow	- Head of Water Supply Department, Riga Technical University,
J. Tolstov	- Head of a complex hydrological party, Complex Geological and Exploratory Expedition, United Industrial Enterprises "Latvijas Geologia",
W. Drikis	- Vice-Chairman, Riga Regional Committee for Nature Preservation.

Analysis of the Present State of Water Supply

Riga's municipal water supply system has historically developed as a centralized system, water being supplied from all the intakes to a single distribution system.

There is no centralized industrial water supply system and instead the individual plants and enterprises pump water from surface and underground sources.

The large number of sources within the system determines its unique character, and at the same time it generates operation problems which will affect the further development of the system.

At present, the municipal water supply system in Riga provides drinking water for over 15,000 consumers, with a daily supply of 450,000 cu.m 60% of the volume comes from underground sources, the remainder - from surface sources. Eight operational sources are situated in the Maza Baltezera region, along the left bank of the Gauja, in Garkanin and Katlakalin, and the surface resources are the Jugla Lake and the water reservoir of the Riga water power station.

The water intakes and the main pumping stations were built in the following years:

- Baltezer pumping station - 1904.
- Zakiumujra - 1936,
- Baltezers-1, Rombergi, Gauja - Experimental, Jugla, Katlakalns - the sixties,
- Baltezers-2, Gauja-1 and Daugava - the seventies.

All the pumping stations are working at full power

and with no reserves, which testifies to a tight situation in water supply. Under such circumstances no preventive repair work is possible on schedule, which adds to failure proneness.

Most of the water supplied to the city, i.e. 55 per cent, is used by the residents for their household purposes. Budgetary and social institutions consume 15 per cent of the total water volume. A 23 per cent share is used by the industry, both for the purposes of their employees and for process purposes; 10 per cent of water is used by other enterprises operating under the "economic accountability" rule.

All the water is fed from the sources into the municipal water mains by large diameter pipes. Water distribution to consumers is performed via a municipal distribution network, a complex engineering facility. This is mainly the case in the central part of the city where high-density development prevails.

The total length of the water pipework is over 1,100 km of pipes laid at different times, made from various materials and to various diameters.

Irregularity in water consumption is compensated and emergency reserves are accumulated in the city by means of two reservoirs and a water-tower of a total capacity of 77,600 cu m. The city lacks regulated reservoirs to compensate the differences between water intake and the volume supplied by a pumping station. At present, the overall capacity of the reservoirs should be at least 160.000 cu m. This is one of the reasons of water cut-offs frequently affecting higher floors of buildings.

The municipal water supply system is closely related to the urban development population number, improvement in housing stock standards, intensification of production and it is liable to respond immediately to any small disproportion, and the disproportion has been increasing.

In its operations, the Riga Municipal Water and Sewage Management Authority has so far followed a general water supply concept developed in 1965, with a view to meeting the city's needs to 1980. The present state of water supply in Riga is unsatisfactory due to the discrepancy between the municipal system and the assumptions of the general development plan.

The capacity of the system was to have reached 590,000 cu m. daily before 1980, including 53,000 for Jurmala. And though water still is not supplied to Jurmala from Riga's water supply system, now, ten years after the scheduled date its capacity is only 523 cu m/day.

It must also be mentioned that recently the water supply situation has become even more drastic for the following reasons:

- lack of water purification agents which used to be supplied be enterprises controlled by all-union departments;
- quality of water from the Jugla lake is unstable and dependent on weather conditions;
- sanitary control institutions tighten water standards as far as colour and precipitate are concerned;
- critical ecological situation in the open sources, in particular the pollution of the entire bed of Dvina;
- frequent cases of water pipe inundation in houses due

to poor quality of installations and breakdowns.

In order to avoid mistakes in water supply system development in future and to eliminate the disproportion between the system and the urban development, a water supply plan has been prepared for Riga up to 2005.

The study is based on the decision no 293 of the Council of Ministers of the Latvian Republic dated 23 May 1984 "On Measures Required to Improve the Cold and Hot Water Supply in Riga". Under this decision, in 1985 the Riga Municipal Water and Sewage Management Authority commissioned a design study. Leading design institutes were involved in the projects, including the "Pilsietsprojekts" Institute. The work was based on the general development plan of Riga for 1981 - 2005.

Necessary amendments were introduced to the general development plan, taking into account the actual situation and the decision no 5/64 taken during the 5th session of Riga's 20th term popular council of "On Riga's Drinking Water".

A Programme for the Development of Necessary Water Supply Facilities up to 2000

Cities and their districts have witnessed delays in the development of water supply facilities, compared with housing and industrial construction. In practice, over the last five years not only water supply to the city has failed to increase but vice versa – it has decreased.

Analysing the basic technical indicators of water supply in most cities in the moderate climatic zone with populations of about 1 m, it can be noticed that Riga is far behind in terms of the total water reservoir and water-tower capacity. The reservoirs and water-towers in Riga are only capable of storing 17% of the average daily water consumption. By way of comparison, the same indicator is 277% for Stockholm, 440% for Copenhagen, 130% for Amsterdam and 155% for Antwerp.

The station reserve capacity compared with the average daily water supply is: 109% in Stockholm, 37% in Copenhagen, 84% in Amsterdam, 71% in Antwerp and as little as 13% in Riga.

Therefore Riga's water supply system is very sensitive to any changes in water consumption, which results in considerable pressure oscillations in the water network depending on the time of day.

Such oscillations, combined with increased water consumption, spur an undesirable chain reaction: pipeline corrosion and impediments in hot water circulation, which consequently lead to an increase in heat consumption caused by draining hot water off to the sewage system.

Implementation of the main water supply facilities design and construction programme in Riga would require an increase in investment outlays by approximately five hundred per cent, but it must be remembered that financing alone will not solve the problem, as the capacity of specialized construction enterprises must also be increased.

Over the last decade the length of the water networks increased and it is now 1,100 km; the scope of repair work has also expanded. Therefore several operation areas have been established as well as two emergency service stations in the Central and Kurziem districts. There are 70 employees, but they are unable to provide the suitable standard of service or safety in terms of both technology and materials. These negative factors make any efficient emergency or preventive repairs hardly possible.

The condition of the water supply system deteriorated considerably in 1986, following the decision of the municipal authorities on the "Transfer of Local District Water and Sewage Networks" under which the Water and Sewage Management Authority took over from the district housing administration the water supply networks operated within districts. However, the water supply service was not provided with the technological support required under the existing standards or with premises necessary for the network operation service.

Given the considerable need for production facilities, the Riga Water and Sewage Management Authority has commissioned with the "Kommunalprojekt" Institute a design for a technical facility to be situated at Ilzenes

and Stopiniu streets (the documentation is now in the final development stage).

Stabilization and Intensification of Water Intake Operations

The last three decades have seen a considerable increase in drinking water consumption in consequence of housing and industrial development. The capacity of the pumping stations fails to meet the city's drinking water demand. The putting into operation of the Daugava pumping station in 1979 only delayed the drinking water supply crisis in the city a couple of years.

The urban development is continued but at the same time incommensurably small funds have been allocated for the construction of water supply facilities. This disproportion in urban development, in addition to economically unjustified, low water charges and unsatisfactory technological solutions which should encourage water saving in residential buildings, continues to result in a huge water deficit.

Taking into consideration the fact that new water supply facility projects take a long time to materialize, in order to partially cover the deficit it is necessary to intensify the operation of the existing water intakes as far as possible.

Since the exploitation of open water sources is closely related to the current, unfavourable ecological situation, a maximum effort must be made to utilize the

underground supply sources, bearing in mind the high quality of such water.

In order to increase the underground intake capacity, it is necessary to drive artesian wells down to the Devonian layer. According to hydrological research data, the additional water volume available for pumping by the "Rombergi" and "Zakiumuyzha" stations is 12.5 cu.m.
The hydrological forecast does not exclude the presence of unused water resources (about 16,000 cu m. daily) in the Devonian layer, in the "Gauya-Experimental" pumping station. To obtain a more precise forecast, it is necessary to drive three more boreholes.

Since the existing pumping stations have been operating with high intensity for many decades, based on obsolete equipment and without general overhauls (as it has never been possible to stop them for a required period because of the drinking water deficit in the city), there is presently an urgent need to modernize a number of stations, such as the "Baltezers" station.

In order to avoid further deterioration of the city's water supply condition before new pumping stations are built, it is necessary to take additional measures aimed to ensure a maximum water supply from the existing overground pumping stations "Jugla" and "Daugava". This requires a large input of work - replacement of the drainage system, installation of additional pumps and other technical work.

Water Supply to Catering Enterprises, Plants, Schools, Kindergartens and Housing in Emergency Situations

An emergency in water supply to the city's catering enterprises, plants, schools, kindergartens and hospitals can be caused by a water main failure, power cut-off, equipment failure, a lack of water purification agents or dangerous water source pollution.

Water main inefficiency will only result in a partial or total stoppage of supply to a small area; in such a case provision of water to consumers is not a problem because water can be taken from nearby hydrants, utility taps in the neighbouring buildings, or it could be delivered by tankers.

An emergency can also be due to a lack of water purification agents in the city (mainly chlorine and aluminium sulfate) or a dangerous pollution of water intake sources.

If the purification agent reserve is less than five time the daily requirement, water is supplied to consumers under an emergency schedule and is then reduced by 40,000 - 50,000 cu.m. daily. In consequence, the water pressure in the Pardagaugavy district drops by 8-10 m/h, and in the central part of the city, i.e. the Kernagars, Purvciems, Plavnieki districts by 4-5 m/h.

Should the purification agents (aluminium sulfate and chlorine) run out completely, the Daugave and Jugla pumping stations will stop to supply water and the city will receive 200,000 cu.m./day less. In such a case the pressure in the entire municipal water supply network will

drop radically so that only the lower floors of buildings will be supplied with water, and a particularly acute deficit will be suffered in the Pardaugavy district. Under such circumstances water tankers would be used.

In order to ensure water supply in such a situation, the plants must reduce their water intake from the municipal network by 50%. Tanker filling points will vary in each case subject to the situation in consultation with the Riga Water and Sewage Management Authority. The public will be notified of an emergency by mass media, and local governments in the districts will be able to obtain detailed information from the emergency service of the Water and Sewage Management Authority.

A similar situation will occur in the city in the event of dangerous pollution of an open water source.

In an exceptional case, when the stock of chlorine is sufficient, but there is no aluminium sulfate, in order to ensure elementary sanitary and hygienic conditions to the population and to maintain central heating of houses in the heating season, a decision will be taken in consultation with sanitary control institutions concerning emergency operation of the Daugava and Jugla pumping stations, with chlorine as the only disinfectant.

Rationality in Drinking Water Consumption by the Population

Riga's existing pumping stations provide an average water intake of 450,000 cu m. daily, of which 55.5% is

used by the population, which means that per capita water consumption is 230 l.

In European cities with high standards of housing stock, the daily per capita water consumption is 100 - 150 l (Amsterdam 100 l/day, Antwerp 85 l/day, Copenhagen 173 l/day, Vienna 173 l/day). The above data and a water consumption analysis conducted in Riga indicate a huge waste of water. The reason for this is that in Riga, just as throughout the whole territory of the former Soviet Union, there have been no individual water meters in the housing units (flats or private houses). Introduction of measuring equipment into households will be effected by stages, first in one or two residential districts, so that all problems arising from this could be identified, and subsequently drinking water meters will be implemented in the entire housing stock.

Summary

(Proposed Water Supply Improvement Projects in Riga)

The Council of Ministers of the Republic of Latvia has passed a resolution "On the Improvement of Riga's Water Supply System" under which specific project proposals have been developed, including the following large facilities:

- construction of a 110.000 cu m reservoir at the Jugla pumping station,
- construction of two reservoirs of 10.000 cu m each at

the "Zijemielblazma" pumping station (one has already been built and the other one is under construction),

- modernization of the existing water-towers (general overhaul) of a total capacity of 7,200 cu.m. (modernization of two out of four towers is completed - at Alises and Gaujas streets),
- construction of the "Baltezers-3" and "Daugava-2" pumping stations (project documentation is under preparation),
- construction of two reservoirs "Plawnijeki-Dreilini" of 10,000 cu.m. each and the second part of the Palwnijeki pumping station to ensure better supply of water to the Purwciems and Darzciems districts (project documentation is under preparation),
- construction of a 800 mm water main from the "Daugava" complex to the "Drejlini" pumping station (project documentation under preparation),
- construction of a 900 mm water main along Dimitrowa street from Wienibas gatve to Lielirbes street (project documentation being prepared),
- construction in the city centre of a water-tower of a capacity of 10,000 cu.m. (project documentation being prepared).

Contributie IRC + travel report

IRC
International Water and Sanitation Centre
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WHO Collaborating Centre / Centre Collaborant de l'OMS

COMMUNITY MANAGEMENT OF WATER SUPPLY SYSTEMS.

The International Secretariat for Water
Central and Eastern Europe International Seminar

"Civil society and its involvement in looking for solutions to drinking water, sanitation, environment and quality of life problems

Warsaw, 17-19 May, 1993

Paper presented by
Ms. Marieke Boot
based on material prepared by Dr. Phil Evans

IRC INTERNATIONAL WATER AND SANITATION CENTRE

IRC is an independent, non-profit organization. It is supported by and linked with the Netherlands Government, UNDP, UNICEF, the World Bank and WHO. For the latter it acts as a Collaborating Centre for Community Water Supply and Sanitation.

The centre aims to ensure the availability and use of appropriate knowledge and information in the water, sanitation and environment sector in developing countries.

Activities include capacity development for information management, exchange of available knowledge and information, and development and transfer of new knowledge on priority issues. All activities take place in partnership with organizations in developing countries, United Nations organizations, bilateral donors, development banks, and non-governmental organizations.

Emphasis in programme activities is on community-based approaches including rural and low-income urban water supply and sanitation systems, community participation and hygiene education, the roles of women, maintenance systems, rehabilitation and environmental management.

The multi-disciplinary staff provides support through development and demonstration projects, training and education, publications, documentation services, general information dissemination as well as through advisory services and evaluation.

For further information:

IRC
P.O. Box 93190
2509 AD The Hague
The Netherlands

Telephone: +31 - (0)70-33 141 33
Telefax : +31 - (0)70-38 140 34
Telex 33296 irc nl
Cable Worldwater, The Hague

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1. INTRODUCTION

Management by communities of water systems goes back hundreds of years, and is nothing new in itself. Adapting to the changing circumstances of the modern world has not always been easy, however, and new problems and challenges have arisen which require new solutions. Community management raises many issues, from finding the most appropriate forms of local organization, to the strengthening of problem-solving skills in both communities and agencies, the establishment of financial and other management systems, and the building of local capacity for operation and maintenance.

If community management capacity is to be further enhanced, new tools and methods will be required. These need to be based on a detailed knowledge of the current management capacities displayed by communities, and the constraints to be overcome in further strengthening these. Although there is significant evidence in the literature that communities are capable of taking on complex management roles, studies which systematically analyze the performance of systems operated and maintained by users are hard to find.

2. DEFINITIONS AND SCOPE

The discussion in this paper focuses on the roles of communities in managing improved water supply systems (wells, boreholes, protected springs, simple piped supplies, etc.). The management by communities of improved sanitation systems is not directly considered, though many of the basic principles of water system management may be seen to apply equally to these.

For the purposes of the discussion in this paper, the "community" means the group of users who live in the same area and have access to, and use, the same improved water supply system.

3. THE GOALS OF COMMUNITY MANAGEMENT

The shift in terminology from community participation to community management became increasingly apparent from about the middle of the 1980s (cf. Williamson, 1983; Wood, 1983; Briscoe and de Ferranti, 1988), as the International Drinking Water Supply and Sanitation Decade (1981-90) gathered momentum. By the end of the decade, community management was placed firmly on the agenda by its inclusion as one of four guiding principles for sector development in the 1990s outlined in the New Delhi Statement (see Box 1).

Box 1.

THE NEW DELHI STATEMENT

In September, 1990, hundreds of delegates from around the world gathered in New Delhi, India, to attend a Global Consultation on Safe Water and Sanitation for the 1990s. The purpose of the meeting was to review the achievements of the International Drinking Water Supply and Sanitation Decade, and point to directions for further development in the 1990s. The meeting ended with the issuing of a statement identifying four guiding principles for sustainable water and sanitation development:

1. **Protection of the environment** and safeguarding of health through the integrated management of water resources and liquid and solid wastes.

2. **Institutional reforms** promoting an integrated approach and including changes in procedures, attitudes and behaviour, and the full participation of women at all levels in sector institutions.

3. **Community management of services**, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes.

4. **Sound financial practices**, achieved through better management of existing assets, and widespread use of appropriate technologies.

Source: UNDP, 1990b.

The water and sanitation decade led to important advances, with lessons being learned from both success and failure. As more and more improved systems have been built, it has become increasingly difficult for governments to maintain them. For instance, estimates for developing countries suggest that 30-40% of water systems may be broken down at any one time. For individual countries and systems, percentages as high as 60-70% have been reported (WHO, 1990a). If water supply systems can not be kept in good working order, the benefits to be gained from building and using them will be hard to obtain. With more than 1.5 billion people in the world still lacking access to a safe water supply, and funds available from governments and donors unlikely to increase in the foreseeable future, a larger share of responsibility will inevitably fall on the users themselves.

An enhanced management role for user communities is seen as a way of increasing cost effectiveness, improving reliability, and ensuring sustainability by placing a larger share of the responsibility for operating and maintaining water and sanitation systems in the hands of the users themselves. It is also seen as an approach which may provide solutions to broader problems: these include the insufficient achievement of health and other benefits; the inequitable distribution of improved systems and benefits; excessive costs; insufficiently prominent roles for women; apparently low levels of self-reliance; and technology and service level choices which do not match community demand. Community

management is a potential vehicle for achieving a broad range of development goals (see Box 2).

In addition, as noted earlier, governments have often proven unable to cope with the recurrent cost and manpower implications of operating and maintaining new systems, leaving communities little choice but to take on these responsibilities themselves or abandon them altogether. Community management is thus seen as a general vehicle which should lead to more efficient, sustainable, and cost effective water supply development.

Box 2.

GOALS OF COMMUNITY MANAGEMENT

The goals of community management are to:-

* Improve system reliability.
* Improve the attainment of health and other benefits.
* Promote greater democracy and equity in the development process.
* Promote a more prominent role for women in development.
* Ensure more appropriate choices of technology and service level.
* Reduce the costs to agencies of improvements by making better use of local resources, skills and knowledge.
* Build community confidence and capacity to undertake further development activities.

(Sources: Cox and Annis, 1982; Dworkin, 1982; Whyte, 1984; van Wijk and Visscher, 1987; UNDP/World Bank, 1988; McCommon et al, 1990; UNDP, 1990b; Narayan-Parker, 1990; Franceys, 1991; Indonesia-Australia Development Cooperation Programme, 1991; Renard, 1991).

4. WHAT IS COMMUNITY MANAGEMENT?

According to the dictionary, to manage is to "organize; regulate; be in charge of" something, and managing is "having executive control or authority". To participate, on the other hand, is to "take a part or share in" something (Allen, 1990).

Box 3.

BASIC COMPONENTS OF COMMUNITY MANAGEMENT

Responsibility:
The community takes on the ownership and attendant obligations of the system.

Authority:
The community has the legitimate right to make decisions regarding the system on behalf of the users.

Control:
The community is able to carry out and determine the outcome of its decisions.

Source: McCommon et al, 1990.

On this basis, community management is "more than participation" in that it "emphasizes the communities' own decision-making power over those water supplies or components for which they hold or share responsibility.." (Wijk, 1989). While it is possible for a community to participate in a water supply improvement programme designed and controlled by an outside agency, it is not possible for the community to manage the system without having significant autonomy and decision-making powers. The three basic components of community management can be defined as responsibility, authority, and control (see Box 3).

The authors of this model stress that choosing community management is more than a simple choice between a top-down or bottom-up approach:

"Rather, it is the outcome of a collaborative partnership between the community and the government in which neither is dominant and each understands and accepts its role." (McCommon et al, 1990).

Most discussions of community management usually refer to more or less the same basic set of characteristics. These are summarized in Box 4.

An important feature of many definitions is the strong link made between community management, on the one hand, and community financing, on the other. For some, this relationship is indispensable, and is closely linked to the ownership of improved water supply systems by communities themselves (Briscoe and de Ferranti, 1988; McCommon et al, 1990; UNDP, 1990a; UNDP/World Bank, 1991). For McCommon and her co-authors, community management only makes sense if communities are also prepared to meet at least part of the running costs.

"In community-managed systems, users identify and mobilize resources. A community that is unwilling to use its available resources, however limited, for this purpose or that is unwilling to obtain them from elsewhere, can hardly be in control of its system". (McCommon et al, 1990).

Box 4.

CHARACTERISTICS OF COMMUNITY MANAGEMENT

Community decides on:

* technology choice
* service level
* form of local organization
* use regulations
* financing mechanism

Community responsible for:

* maintenance and repair
* regulation of use
* local management organization
* financing

Community owns the system

Not all those who write about community management are prepared to be so direct, but none of the documents covered in this review attempts to challenge this argument head-on.

The idea that community ownership is a precondition of effective community management raises complex issues, though "sense of ownership" is often used in project and programme evaluations as an indicator of community commitment (for example, see Mukherjee, 1990). In some cases, communities may not perceive themselves as the owners of systems for the very good reason that from a legal standpoint they do not have ownership rights. As Wood has noted, however, the important question is not so much "who owns the system?" as "who is responsible for taking care of it?" (Wood, 1983). Many business enterprises are run by managers who do not own them, but who nevertheless accept responsibility for their success or failure. Even when communities do acknowledge ownership of a water supply system, they may not always feel that they are in control of it. A project evaluation in Rwanda, for example, found that community members, while expressing a sense of ownership of their water systems, nevertheless perceived decision-making authority as originating from outside the community (Coreil and Beaudoin, 1989).

In a review of experience in Nepal, Williamson identifies three different management approaches (see Box 5), indicating a progression from agency-management, via community participation, to community management. In the case of community management, responsibilities can be shared between agency and community, but it is the community which ultimately decides on how things are to be done. Williamson omits to mention the issue of financing in his model, but it serves to illustrate both that different options are available, and that community management, where feasible, can have clear advantages.

Community management can take many forms, in the same way that community participation can have many variants (cf. White, 1981). McCommon and her co-authors identify a broad range, from low-cost management of simple dug wells and boreholes in Sierra Leone, Togo, and Kenya, through more complex management systems taking care of piped schemes in Malawi and Guatemala, to relatively sophisticated local water associations in rural areas of the United States, Finland and Switzerland (McCommon et al, 1990; Katko, 1991; Heijnen, 1990). Community management need not imply that communities must take care of everything (or necessarily pay the full costs). The idea of

partnership referred to earlier allows scope for a sharing of responsibilities between agencies and communities.

Whether or not a community is really managing its water supply system is much easier to see in practice than to strictly define at a theoretical level. At the same time, there is a general consensus that, although the relationship between them is complex, the distinctive features of community management are that:

* The community has direct management and decision-making control.
* The community is committed to contributing towards covering costs.
* The community accepts responsibility for running the system.

In many projects and programmes, communities play important roles in performing basic operation and maintenance, and other tasks. If the elements of decision-making, contributions to covering costs, and acknowledged responsibility are missing, however, it is difficult to say that they are truly managing the system on their own behalf. It is clear from the literature that community management means transferring greater authority and control to communities. This has significant implications for the way in which sector development proceeds in the future. In particular, it implies the development of the relationship between supporting agencies and communities into one of partnership.

Box 5.

OPTIONS FOR WATER SYSTEM MANAGEMENT

	Agency–managed (Centralized)	Limited community–involvement (People's participation)	Community–managed (Decentralized)
Flow of ideas	AGENCY → COMMUNITY	AGENCY → ← COMMUNITY	AGENCY → ← COMMUNITY
Basic assumption	Local people know nothing and can't learn new things	Local people have knowledge which can be used in design. They can also provide labour for construction	Local people have management skills and quickly learn needed technical skills
How need is realized	Agency decides community needs water	Local political official decided community needs water	Community realizes own need
Who makes decisions	Agency	Agency and local leaders	Community
Strategy	Survey, design are done by agency staff. Little time is spent in community. Design is done in office	Survey is done by agency staff with advice given by local leaders on location of water sources, tank and tap stands. After design is completed in office it may be sent to community for information	Community asks agency for survey. Local people assist and understand survey. Community makes decisions about design. Design is prepared in the community; everyone is able to understand it
Construction	Construction is done by contractor hired by agency	Agency provides technician who organizes all work and does skilled work himself. Community provides volunteer unskilled labour	Agency provides technician who teaches necessary skills. Community organizes all work
Maintenance	Agency provides for maintenance by placing own staff to look after own system	Maintenance is left for community to work out	Maintenance is organized by community who have skilled persons able to make repairs
Approval of designs	Agency	Agency	Community and agency
Primary beneficiaries	Agency–its 'good name'	Agency–its 'good name'	Community
	Contractor–profit	Local political leaders	
End result	Dependence on agency	Continued lack of initiative	Self-reliance

Note: 'Agency' refers to Government or Development Agency which implements the drinking water project

Source: Williamson, 1983.

5. COMMUNITIES AS TRADITIONAL MANAGERS OF WATER SUPPLY SYSTEMS

Although community management has recently been promoted as a new approach in the water and sanitation sector, the management of water supplies by communities is certainly nothing new in itself. At a common sense level, it is obvious that communities have managed their own water supplies (if not "modern" water systems) for thousands of years.

Rules for regulating access to water sources, and agreements on appropriate uses for different sources, are commonplace, and numerous examples of these forms of management can be found in historical and anthropological literature. In many developing countries today, traditional water sources are subject to similar locally developed management rules that operate outside of, or alongside, the regulatory frameworks of national states. Water collection and use is seldom a free-for-all, and is often carefully thought out (cf. White et al, 1972). Communities often come to explicit or implicit agreements that define uses (drinking, livestock watering, clothes and body washing, irrigation, etc.) for water from different sources (wells, springs, streams, rivers, dams, etc.), or at different locations at the same source (along a river bank, or on a lake shore). Many of these decisions are made by women, who have long played a crucially important role in the management of water use (cf. Wijk-Sijbesma, 1985).

New water supply systems imported from the outside often make new demands on communities and require new approaches for successful community management. National social and economic developments can also undermine pre-existing community-based management systems and reduce the appropriateness and effectiveness of these in new settings.

It has been argued that new community management systems should as far as possible build on existing community traditions and institutions (cf. Fortmann, 1983, for an example from Botswana; and Renard, 1991, for a discussion based on experience in the Caribbean). Whether considered by agencies or not, indigenous systems and traditional leadership in any case often play an highly important role.

In some cases, traditional and customary approaches can be in direct conflict with national goals. In Botswana, for example, the government tried to introduce a new community-based management approach to regulate the use of seasonal dams. These were intended exclusively for livestock watering, and the government wanted to optimize water use and protect the environment by limiting the number of livestock using each dam. Dams were to be fenced off and controlled by local dam groups, which were also required to collect money from users to pay for their upkeep. It is customary in Botswana, in common with many other arid and semi-arid areas, to consider water as a common-property and open-access resource that should be freely available to all. This makes both limiting access to water, and charging a fee for it, extremely difficult in rural areas, particularly in remoter regions where water is scarce (Fortmann, 1983).

Where traditional authority systems exist alongside modern institutions they are always likely to make their presence felt to some degree or another. Development programmes often ignore this at their peril. Acknowledging the presence of these systems and where possible seeking ways to integrate them, rather than setting up new ones which may lead to conflict or resistance, is an important first step towards the development of effective local management organisations.

6. LOCAL ORGANIZATION FOR COMMUNITY MANAGEMENT

Although the significance of traditional management practices and local leadership are often acknowledged in the literature, the general trend is to assume that new water supply technologies require new forms of local organization to manage them. As noted already, community management can cover a broad range of options, from very local individual or household level management all the way to highly formal community water boards (cf. Wijk-Sijbesma, 1981; McCommon et al, 1990). The degree of autonomy of local organizations can also vary considerably, with some being closely tied to formal local government institutions and others being much more informal (Wijk-Sijbesma, 1981). The level of organization (from individual household upwards) may have an important influence on the success of community management. In Indonesia, for example, in a successful handpump project supported by the NGO Yayasan Dian Desa, householders opted to organize themselves around private or small group wells, rather than communal water points, on the grounds that this would avoid conflicts over sharing, amount of water use, and payment (Sudjarwo, 1988).

The most commonplace approach by government and donor agencies is to require communities to establish committees to coordinate local management of new schemes. In Zimbabwe, communities are expected to form small user committees at every water point to take care of day-to-day operation and preventive maintenance (Cleaver, 1991). In some cases, the form of these local organizations is very closely defined. In a programme in Tanzania, communities are required to form water committees with five members, at least two of which must be women (Andersson, 1990).

Local management organizations can either be specifically established to run the water system alone, or the necessary management tasks can be undertaken by existing general development organizations (Wijk-Sijbesma, 1981). Which is more appropriate depends on local circumstances, and, according to the principles implied by the community management concept, should be decided by the community itself. Under the right circumstances, multi-purpose community organizations have proven to be highly effective, as the successes of the Saemaul Undong ("New Village") movement in South Korea (USAID, 1981), and the Village Organizations (VOs) supported by the Aga Khan Foundation in Pakistan (Pasha and McGarry, 1989), indicate.

An often unseen factor in the effectiveness of community management is the influence of charismatic individual leaders in mobilizing community enthusiasm and interest in undertaking management tasks. Katko also notes the importance of energetic individual leadership, pointing out the decisive importance of a "champion" for the success of local water associations in Finland (Katko, 1991).

Community cohesion is another important factor contributing to the likelihood of successful community management. A dynamic leader can help to pull a community together and create a common purpose. A study in Yemen suggests, however, that cohesion does not necessarily mean that communities always need to act in an harmonious and peaceful way. Arguments and disputes, if properly regulated and resolved, can actually serve to strengthen cohesion by providing an important source of validation for local management rules (Vincent, 1990). Competition for water resources can be a positive force in a community in strengthening willingness to manage. This only appears to work,

however, when there is an adequate and legitimate legal and authority framework to provide clear boundaries within which disputes can be settled if and when they arise.

Most donor agencies prefer that community water organizations are democratically elected and represent all interests within the community (hence, for example, the insistence of many that women be included). Many communities, however, lack the democratic model of elected representation on which this insistence is based, and find it difficult to quickly adjust to such demands when they are made. A community-based project in Rwanda, while showing considerable promise, nevertheless faced many problems. One of these was the difficulty of adopting the elective model for water users associations introduced by the support agency. This was because the method of open election of representatives "departs significantly from the existing political system" (Coreil and

Box 6.

TASK DESCRIPTION FOR A COMMUNITY WATER COMMITTEE

* To represent the community in contacts with the agency
* To organize contributions by the community, in cash or kind, towards construction, and towards operations and maintenance
* To organize proper operation and maintenance, including supervision of caretakers
* To keep accurate records of all payments and expenditures
* To promote hygienic and effective use of the new facilities
* To hold regular committee meetings to discuss and decide on issues, procedures, and problems
* To inform the community regularly about decisions and to report on revenues and expenditures

Source: IRC, 1991.

Beaudoin, 1989).

The functions to be performed by local management organizations can vary considerably, depending upon the agreed division of responsibility between the agency and the community. Box 6 gives a typical task description for a village water committee.The example list is brief, but even so the tasks described cover a broad range of skills. Such models require committee members to negotiate on the community's behalf, coordinate and administer technical and managerial tasks, keep accurate financial and administrative records, promote good use of the water system, and regularly communicate and report back to the community. Building the capacity of communities to undertake these

responsibilities is seen by many as a major support task for agencies (cf. McCommon et al, 1990; Yacoob, 1990; Yacoob and Rosensweig, 1991).

As well as having an adequate skills base, local management organizations also require proper recognition and the legitimate authority to perform their functions. A study of village water supplies in Lesotho in the 1970s argued that community management must be seen as a form of "delegated authority", supported by legal sanction. If governments want community-based organizations to take management responsibilities, they must back them with the force of law (Feachem et al, 1978). While in Latin America community water boards can be found with very closely defined legal status, village water committees in Africa and Asia more often than not lack this official recognition and authority.

Although various organizational options can be found in the literature, it is hard to find a systematic account of the full range of possibilities and a thorough analysis of the strengths and weaknesses of each. The bringing together of current experience in this way would be a useful contribution to further strengthening the capacity of agencies to support community management organizations.

7. COMMUNITY OPERATION AND MAINTENANCE

The clearest indicator of the success of community management is the extent to which water systems are kept in good working order by the users. A community management approach implies that far greater responsibility for operation and maintenance will fall on the shoulders of the users. In many cases, community roles in operation and maintenance are limited to simple care of water points and it is often assumed that users can do little more than undertake protective measures to minimize breakdowns. Even a brief review of case material, however, indicates that communities may be capable of much more.

In Colombia, community water committees successfully manage small piped schemes, including simple water treatment with slow sand filters and chlorination. An evaluation report showed that the communities carried out and financed all daily operation, maintenance and management. Water treatment was managed so well that E.coli counts were reduced continuously by more than 99%. Although some problems remain to be solved, and full 24 hour services have yet to be achieved, the Colombian case indicates that with the right support and motivation communities are able to manage relatively sophisticated water supply technologies (CINARA, 1990).

As with other aspects of community management, adequate support is required to ensure that the full potential of communities is developed. This includes:

* Proper training in the performance of technical tasks.
* The development of approaches which allow communities to strengthen their problem-solving skills and learn from experience.
* Appropriate technical design to maximize the number of tasks which can be done by community members themselves.
* The development of simple but effective monitoring tools to allow communities to assess and improve their own performance.

The range of issues which need to be addressed in strengthening the operation and maintenance of community water supplies is very broad, as the WHO Working Group on Operation and Maintenance has noted (WHO, 1990a). According to the group, operation and maintenance has not yet been given the serious attention it deserves. If increased community management is adopted as a goal, the need to address this aspect will become of even greater importance. A prerequisite for this will be a clearer understanding and documentation of exactly what communities are currently showing themselves capable of, and an analysis of how community capacities can be further strengthened.

8. COMMUNITY FINANCING

The strong relationship seen between community management and community financing is highly important. Discussions of community involvement in water supply programmes have often seen this as a means of cost recovery and cost reduction (cf. Baum and Tolbert, 1985). Although others (cf. Andersson, 1989) are quick to point to other reasons for encouraging community management, such as community empowerment and greater self-reliance, community financing has been seen as both an indicator of community willingness and capacity to take on management responsibilities, and as a precondition for success (for example: Dworkin, 1981; Briscoe and de Ferranti, 1988; McCommon et al, 1990; UNDP, 1990b; UNDP/World Bank, 1991).

Community financing of improved water supply systems is a complex issue, as a recent IRC publication shows (Evans, 1992). A wide range of factors are involved, with the achievement of benefits and the ability and willingness of communities to pay for services being among the more important. The insistence that as far as possible communities should contribute towards the costs of services, as well as taking management responsibility for them, is seen as a central precondition for the now widely advocated transformation from a supply to a demand-driven approach to basic service provision.

On a practical level, the options for community-based financing are broad (Wijk-Sijbesma, 1989). Whichever one is chosen, part of the process of capacity building is likely to require support to communities in developing effective financial management and accounting procedures. At the same time, communities themselves have a major role to play in identifying the most appropriate approaches. Successful community financing is far from universal and remains a major challenge. The assertion that community management makes no sense without community financing also needs further investigation.

9. PLANNING AND COMMUNITY MANAGEMENT

To improve the prospects for success, community involvement should begin as early as possible in project development. If communities are directly involved in planning new schemes and deciding how they are to be run the chances are much better that the development will meet their own felt needs (cf. Briscoe and de Ferranti, 1988; Narayan-Parker, 1990; Franceys, 1991; IRC, 1991; Rondinelli, 1991). Attempts are being made to develop techniques to involve communities more closely in planning, but there is still a lot to learn.

At the same time, it is important to recognize that governments may wish to pass management responsibilities to communities long after schemes have been built. In many such cases communities may have had little or no involvement in project planning, and little is yet known as to how this can be overcome. Further study is needed to more clearly see the relative importance of community involvement in planning in ensuring long-term success, and what is required to hand over management to communities when this has not been a feature.

10. MONITORING AND EVALUATION

The monitoring and evaluation of progress is an important management tool in projects of all kinds. If communities are to take on greater management responsibilities, an important part of establishing the necessary capacity is likely to be the development of suitable monitoring and evaluation tools. Agency monitoring and evaluation is often predominantly concerned with quantitative and technical aspects of scheme development, operation, and maintenance. Even when a broader approach is taken, the information collected is often primarily of use to the agency. Communities have information requirements of their own to enable them to carry out their management functions.

The need for new approaches to monitoring scheme performance and the effectiveness of community management on a continuous basis has been recognized, and the development of such tools is being actively pursued (see, for example, Narayan-Parker, 1990). This is an important new area for further knowledge base development and testing in the field.

11. THE LIMITS OF COMMUNITY MANAGEMENT

The idea that community management should be based on a partnership suggests that limits are recognized. Although communities may be able to take on a very substantial share of management responsibility, agency involvement may always be required to some degree. The principAL agency role in the future has been seen by some to be that of facilitating management by communities (cf. Briscoe and de Ferranti, 1988). This can involve anything from establishing suitably supportive legal and policy frameworks, to providing skills training and ensuring that the necessary spare parts are locally obtainable.

Water management on a broader scale also means that governments will always have an overall responsibility to ensure that national resources are protected and properly used, and national public health standards maintained. Certain technical requirements, such as the maintenance of sophisticated water treatment works or the monitoring of water quality, may also be beyond the capacity of communities to perform. What these limits are, however, remains to be seen. Communities in some places have proven themselves able to carry out sophisticated technical tasks on their own behalf.

12. BUILDING CAPACITY FOR COMMUNITY MANAGEMENT

Capacity building for community management can be seen to have different levels of meaning. At its most basic, it refers to the transfer of skills to communities to enable them to perform management tasks. This includes the provision of technical training for the performance of routine operation and maintenance tasks, financial control methods, guidance on how to develop and implement community monitoring and evaluation systems, and so on. Though very basic, this level of capacity building is extremely important. According to Yacoob, "..in most cases, communities do not have the skills or training to make wise decisions about system development or to undertake system management." (Yacoob, 1990). Although there is evidence to suggest that many communities do have high skill levels, there is nevertheless a consensus that basic support to community managers is an important requirement. As Wijk has noted: "..when change is limited to shifting responsibilities to local authorities and users, without working methods and means to match, community management will make little or no difference to sustained functioning, use and hygiene." (Wijk, 1989).

The growing emphasis on management, rather than participation, has led to the development of innovative and more participatory capacity building methodologies that place the emphasis on developing learning and problem-solving abilities rather than simply transferring technical skills. Examples include the methods developed through the UNDP supported Promotion of the Role of Women in Water and Environmental Sanitation Services (PROWWESS) project (Srinivasan, 1990; Narayan-Parker, 1990), and the participatory approaches developed by CARE International in Africa and elsewhere (CARE, 1988; CARE, 1990).
IRC is currently actively involved in promoting such approaches, for example through support currently being given to community water and sanitation projects in Guatemala and Honduras financed by the German development bank KfW.

The broader level at which capacity building works can be identified by examining a basic set of preconditions which have been identified for successful community management (see Box 7). This list will undoubtedly be further refined as experience with community management approaches grows. In the meantime, however, it serves in part to underline the importance of the factors of responsibility, financing, and control that sit at the centre of the community management concept. It also shows that community management does not necessarily mean a diminished role for supporting agencies. Community management capacity needs to be built and supported. Agencies may not therefore have less to do than before, but will instead need to concentrate on new and different inputs than in the past. In this sense, they will have to build new capacities of their own, as well as assisting in building capacity in communities.

In the version given in the background paper for the New Delhi conference (UNDP, 1990a), the list of preconditions was divided into two parts. Six of the preconditions (demand, willingness to take responsibility, willingness to invest, empowerment, institutional capacity, and availability of human resources) were identified as preconditions at the community level. The remaining four (provision of information, technologies and service levels, policy framework, and external support services) were seen as factors contributing to the creation of a suitable "enabling environment" in which community management can flourish. While the partnership concept suggests that both

Box 7.

PRECONDITIONS FOR COMMUNITY MANAGEMENT

* There must be community demand for an improved system.
* The information required to make informed decisions must be available to the community.
* Technologies and levels of service must be commensurate with the community's needs and capacity to finance, manage, and maintain them.
* The community must understand its options and be willing to take responsibility for the system.
* The community must be willing to invest in capital and recurrent costs.
* The community must be empowered to make decisions to control the system.
* The community should have the institutional capacity to manage the development and operation of the system.
* The community should have the human resources to run these institutions.
* There should be a policy framework to permit and support community management.
* Effective external support services must be available from governments, donors, and the private sector (training, technical advice, credit, construction, contractors, etc.).

Source: McCommon et al, 1990.

agencies and communities should work together at all levels, it seems clear that the creation of the enabling environment is principally an agency responsibility.

Adequate support to communities to prepare them for management roles is indispensable, both in terms of skills development and proper information.

13. THE EFFECTIVENESS OF COMMUNITY MANAGEMENT

The effectiveness of community organizations in undertaking management tasks varies considerably. In Latin America, which has the longest experience in community water supply management, highly successful community water boards are often found (cf. Cox and Annis, 1982). In Africa and Asia experience has been very mixed. The success of local management does not only depend upon the availability of skills. In India, for example, communities were found to have a very low level of perception of their own role as managers, with handpumps being seen as the government's responsibility. They therefore did very little to take care of them (Mukherjee, 1990). In a comparative analysis of experience in Asia and Africa, Black noted that in India community self-help was actually discouraged by the high levels of national political support and resources given to the rural water and sanitation sector. In Bangladesh, by contrast, communities have taken on much higher levels of responsibility simply because these levels of support are missing. In Nigeria, a decline in resource availability following the collapse of world oil prices persuaded communities to accept lower service levels and take a greater share of responsibility (Black, 1990).

The extent to which communities themselves determine the form which local management organizations take may have an important impact on their success. A study of water committees in Latin America found that those that were locally developed, rather than being imposed from the outside, were the most effective (Espejo, 1989).

At the same time, leaving communities entirely to their own devices may not always be the best way to protect the interests of less powerful members of the community and ensure equity. In Namibia, government support to the operation and maintenance of deep motorized boreholes in the arid Herero region was largely withdrawn during the transition to national independence. User groups were left to devise their own local maintenance and financial management systems, with very mixed results. Some groups established highly equitable arrangements, agreeing to share running and repair costs on a pro rata basis linked to the numbers of cattle each member of the group owned (thus linking contributions directly to use and ability to pay). In others, however, powerful local leaders insisted that all group members pay the same, irrespective of their level of livestock holding, thus serving their own interests at the expense of poorer members of the group (Evans, 1990).

Where local water management has been successful, this has been attributed to many factors. These include that communities are paying for their supplies (Dworkin, 1982, UNDP/World Bank, 1991), the scarcity (and hence felt need) of water in the area (Yacoob and Rosensweig, 1991), the growth of an active and central role for women in decision-making and control (Wijk-Sijbesma, 1985; Wijk-Sijbesma and Bolt, 1991), the community's awareness that if they do not take care of their own water supplies nobody else is likely to (Black, 1990), and the extent to which communities have an awareness and desire for the health and other benefits to be obtained (WHO, 1990b).

Yacoob and Walker make the very important point that the taking on of management tasks has cost implications (in both time and resources) for communities that will affect both their willingness and ability to perform them. Communities may also be unwilling to take on management responsibilities if they are unable to see in advance what the cost implications are likely to be (Evans, 1992).

The broad range of variables influencing success clearly indicates that prescriptive approaches are unlikely to be appropriate, but that suitable strategies and frameworks need to be developed which will allow supporting agencies to adapt and respond to local conditions. To be effective, it is important that such approaches are developed in close collaboration with communities, and through the agencies working most closely with communities themselves.

14. CONCLUSIONS

On the basis of current experience, the prospects for successful community management appear to be quite promising. There are examples in the literature of high levels of skill and ability being displayed by communities in taking care of both traditional and improved water supply systems. Although many communities display the necessary potential to take management responsibilities, community management as an approach is still very much at a theoretical stage of development. In many cases, communities do not accept full responsibility for improved water supply systems, pay little or nothing for their construction and upkeep, and have little real control over them.

The true potential of communities to take a higher degree of management responsibility is not yet known. The absence of systematic analyses of the performance of community managed systems, and the associated identification of the most effective approaches to strengthen community management capacity, represent major gaps in current knowledge and practice.

Moving further forward will require work on several fronts. These will include the building up of more practical experience from which lessons can be learned, the establishment of a wider knowledge base on which to build, and the development and field testing of improved strategies, tools, and methods to further build management capacity in communities, and to assist agencies in making the necessary adjustments to provide effective support to the capacity building process.

Although much knowledge and experience is already available, it is generally scattered and an integrated picture has yet to be built up. Many innovative tools and methods have also been developed to strengthen community roles in sustaining water supply improvements. These need to be pulled together, and further developed, in close collaboration with communities themselves in order to devise coherent strategies to give further support to community management. The agencies providing direct support to communities also need to strengthen their own capacities to provide the necessary support. Detailed studies of community management experience in the field, undertaken as far as possible by locally-based support agencies, are urgently needed to cope with the increased call for community management. These need to be linked to the development and testing of new methods and tools to strengthen both the willingness and ability of communities to manage water supply systems, and improve the capacity of agencies to provide the necessary support.

Annexure

Aspects of Sustainability in a Swiss Village Water Supply Scheme

VITZNAU

Introduction

The original water supply project was constructed around 1870 to supply water for the steam locomotives of the Rigi mountain railways. A public standpost was constructed for the villagers near the railway station.
By 1890 the supply became inadequate to serve the needs of the 800 inhabitants and the scheme was expanded. 12 households then also obtained a house connection. By the turn of the century Vitznau become also a tourist resort with a fairly constant hotel capacity of some 700 beds. As some of the hotels had their own waters supply the demand on the village system was initially not so large. Around 1930 however, the main source used and owned by the Parkhotel, was purchased and incorporated in the village water supply scheme and all hotels now took their water from that system.
The system was maintained and repaired as necessary and hardly any major changes occurred in the operation system for the last forty years. Since 1986 a telemetric operation system has been installed in the local school which allows remote operation and control of the system. The "Brunnenmeister" (village maintenance worker and operator) runs the system from here. The present Brunnenmeister (exact English translation: the master of the well or spring) is a very respected community member who has done his job for the last forty years or so. Now in his seventies he will retire and his son - who is also the technical staff member at the local school - will take over.

Physical aspects of the scheme

The water supply scheme of Vitznau could well have been located in a mountainous developing country. The intake structures, the pipeline, reservoirs, flow regulation, break pressure devices, chlorination equipment and the general surrounding of the system are very similar to schemes one finds in Nepal or Central Sri Lanka.
The scheme takes most of its water from the mountain side above the village. From a first collection reservoir at about 1000 m elevation the water flows down through a series of reservoirs to the supply area some 500 meter lower in elevation. An additional source is further located just above the village.

Aspects of sustainability

1. Organisation

The council of Vitznau consists of five councillors, one of whom is also responsible for the water supply scheme. Since 1989 the responsible councillor is a woman. As she felt that she would require some technical assistance in the running of the water supply scheme, she decided to establish a water committee consisting of the present Brunnenmeister and his son, the two owners of the two local pipefitting & sanitary workshops and herself as chairperson. The committee meets a few times a year to discuss maintenance and extension issues and according to two of its members functions well.

The Vitznau water supply scheme is financially self-sufficient and can even put aside a few minor funds for future investments. Because of the large number of tourists in the village and because a lot of houses are not occupied all year round (and thus rate payment for actual consumption by the owners of such houses would not cover the cost of water supply), it was decided to charge a flat rate of sFr. 20 a year per (inhabitable) room.

Connection charges are further a major source of income to the scheme. A large hotel complex that was renovated in recent years provided through its various connection charges a major part of the funds required to purchase the telemetric unit.

In a discussion (with the author) the water committee acknowledged that tourism contributed considerably to the income and thus financial stability of the scheme. If tourism would wane, an increase of the local water rates would become necessary.

2. Brunnenmeister

The present Brunnenmeister had been in his post for the last 40-odd years.His son was now succeeding him. Payment was minimal but he had done the work out of personal interest. Because his son was now employed by the village council as the school caretaker, he could afford to continue his father's work on similar terms. Both were proud of the work and were quite willing to discuss the various aspects and considerations involved. Concern for the proper functioning of the scheme was displayed in all discussion but in particular when talking about the initial problems relating to the telemetric unit where persistence and adequate siting of the various measuring instruments ultimately made the system work.

Another group of Aguasan workshop participants went to have a look at the water supply scheme at Gersau, a few kilometres from Vitznau. There the Brunnenmeister (also a small local contractor) was not so motivated due to inadequate payment and also because he was often not chosen when a tender for work on the water supply scheme was issued. It showed in the scheme which was not so well maintained, whereas also the pump house and the reservoir were dirty and requiring a spot of painting. Also the village council did not show too much interest and so general attitude of neglect could develop.

3. Environmental concerns

Since a few years the herbicide Atrazin had been discovered in the drinking water. Various mountain springs were tested and a few indeed contained a substantial Atrazin pollution. Though temporarily stopping the intake from these sources would be possible, it would in the long term create problems as the sources concerned were the larger ones of the scheme.
The Brunnenmeister - after a long time of investigations - found out from some farmers on the slopes above the village that the sources concerned started to give a larger yield of water later in the spring when also the Northern slopes of the mountain were warmed by the sun. It was concluded that the sources thus must be fed by melting snow on the North face of the mountain, would then percolate through the mountain to emerge on the South face above the village. To confirm this assumption a coloring test was made whereby pigments (Uranin) were placed in the suspected watershed area on the North face. This was done in July 1989 and indeed by the end of January 1990 traces of Uranin were found in the spring water. Peaks of Uranin concentration in the water were found during March and April.
In the watershed area supplying the springs of Vitznau the Arth-Rigi Railway is situated. To keep the weeds down on the railway the authorities sprayed with the herbicide Atrazin. This polluted the watershed and over time entered the springs of Vitznau.
Upon the successful proof that the weed-killing of the Rigi railway also threatened the water quality for the Vitznau water supply, it was decided to find other ways of keeping the weeds down. Furthermore now that the watershed area is better known steps will be taken by the water committee of Vitznau to secure some water protection areas on the North face. (see also annexure).

Han Heijnen/IRC
Aguasan Workshop 1990
Rotschuo, Switzerland

Annexure

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VITZNAU

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Der von der Wasserversorgung Vitznau in Auftrag gegebene Farbversuch vom 21. Juli 1989 brachte nun erste die ersten Resultate.

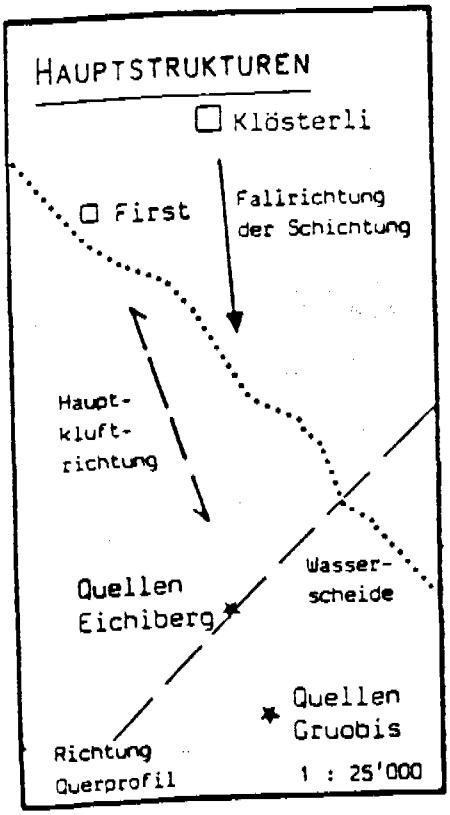
Ziel der Untersuchung war, nachzuweisen, ob eine direkte Wasserverbindung zwischen der Rigi-Nordseite (Klösterli-Gebiet) und der Rigi-Südseite besteht. Der Versuch sollte einerseits Daten liefern für die gleichzeitig laufende Quell-Schutzzonenausscheidung und andererseits etwas Licht in das leidige Atrazinproblem bringen. Bekanntlich weist ein Teil der Quellen seit einigen Jahren Atrazinrückstände auf.

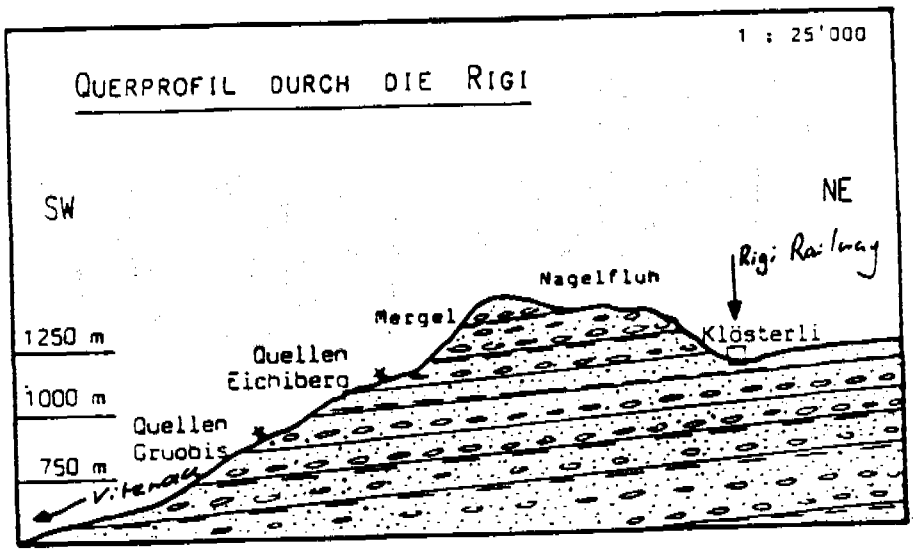
Die geologischen Voraussetzungen für einen relativ schnellen Durchschlag des Farbstoffes von Norden nach Süden sind theoretisch gegeben (Fig. 1 und 2). Wie das Wasser im Innern des Gebirges tatsächlich zirkuliert, das lässt sich unter anderem anhand von Markierversuchen ableiten. Allerdings liegen für Molassegebirge, wie sie das nordwestliche Rigigebiet darstellt, nur wenig vergleichbare Versuchsresultate vor.

Zu den Ergebnissen: 6 Quellen auf der Rigi-Südseite wurden seit dem 21. Juli z.T. täglich nach Farbstoff analysiert. Am 21. August, also nach 31 Tagen, wurde der Farbstoff in der vorderen Gruobisquelle zum ersten Mal festgestellt. Rund 10 Tage später wurde der Farbstoff auch in der hinteren Gruobisquelle nachgewiesen. Diese Nachweise blieben bis zum 18. September die vorläufig einzigen. Das Untersuchungsteam ist jedoch überzeugt, dass der Stoff wieder auftreten wird. Aus Erfahrung in Kastgebieten (z.B. Jura) weiss man, dass dies manchmal Monate dauern kann.

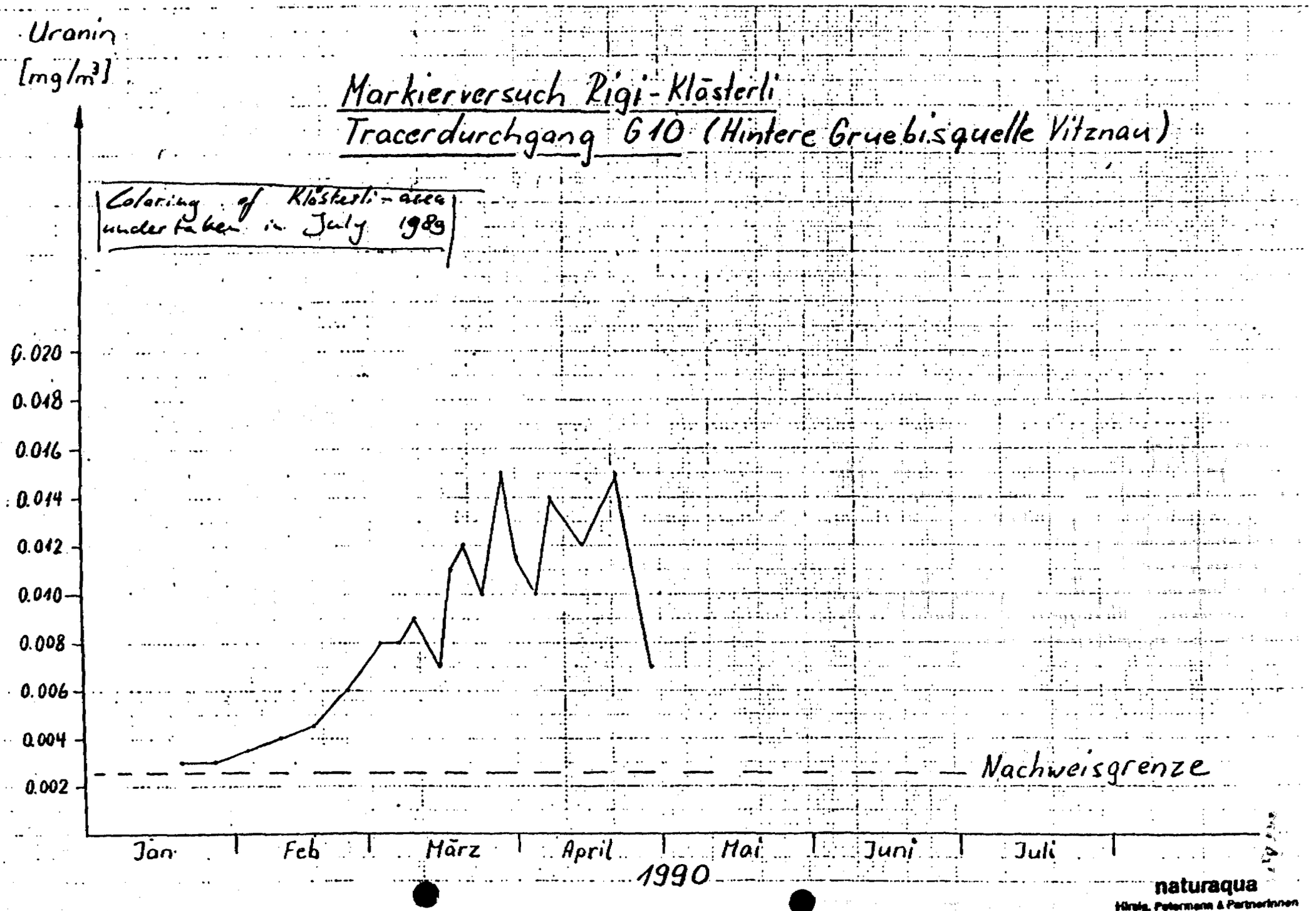
Aus diesen Ergebnissen lassen sich erste Schlüsse ziehen: 1. Ein sog. direkter Durchschlag von Norden nach Süden wurde nicht nachgewiesen. 2. Die Wasserwege im Berginnern der Rigi sind sehr verwinkelt und diffus. Es ist somit denkbar, dass Wasserverschmutzungen aus irgend einem Teil des Rigigebietes das Quellwasser nachhaltig über Monate und Jahre belasten können. Letztere Erkenntnis wäre eine Erklärung für die Tatsache, dass auch dieses Jahr im Vitznauer Quellwasser Atrazin festgestellt wurde, obwohl die Rigi-Bahnen (beidseitig) dieses Pflanzengift seit zwei Jahren nicht mehr einsetzen.

Geologisches Büro
Dr. Max Korner





Das Bild links zeigt die Präparierung einer sog. Impfstelle in einer Felsspalte, während auf dem rechten Bild die eigentliche Markierung mit Farbstoff in einem zerklüfteten Bächlein dargestellt ist.



naturaqua
Hürzig, Petermann & Partnerinnen
Aneheimstrasse 17
3006 Bern ✆ 031 44 35 71

Contributions other countries

Water and Civil Society International Seminar

Warsaw, Poland

The Role of Civil Society in The Provision of Water Supply and Sanitation

By: Lilia O. Ramos
Executive Officer
Aprotech Asia
Manila, Philippines

THE ROLE OF CIVIL SOCIETY IN THE PROVISION OF WATER SUPPLY AND SANITATION: THE APPROTECH ASIA EXPERIENCE

By: Lilia O. Ramos
Executive Officer, Approtech Asia

INTRODUCTION:

Safe water supply and sanitation are important basic human needs. They are key to life, health and human development; they are vital for protecting the environment and alleviating poverty. But for many decades, Third World countries have been beset with the problem of how to provide these two basic needs to their ever-growing population.

Concerted efforts during the 1980s brought water and sanitation services to hundreds of millions of the world's poorest people. The most outstanding of these efforts was the launching of the International Drinking Water Supply and Sanitation Decade with goal of "drinking water and sanitation for all". But even the unprecedented progress achieved during the Decade was not enough. One in three people in the developing countries still lacks these two most basic requirements for health and dignity. The supply of safe water and provision of sanitation facilities are losing the race with population growth and urbanization. Each day, water related diseases kill 30,000 people and triggered 75 percent of the sickness afflicting humanity and hubbled women - the haulers of water - across the Third World.

In today's world of a rapidly growing and dynamics population, the importance of water supply and sanitation takes on new dimensions. A top priority in the socio-economic development is to provide access to safe drinking water and sanitation to the low income communities to the rural and urban areas. This is a major challenge faced by development actors in the 1990s, particularly in the developing countries, where one in three people still lacks these two most basic requirements for health and dignityt.

ROLE OF CIVIL SOCIETY IN THE PROVISION OF WATER AND SANITATION:

The provision of adequate supply of safe water and sanitation has traditionally been the concern of government institutions, although other sectors in the society have been providing supports, but not on a sustained basis. Despite efforts to fulfill these needs, the demand for clean water supply and sanitation in rural as well as urban poor community is still considerably high.

As such, new approaches must be instituted within the country level in order to meet present and future needs. Since the government cannot do the task alone, there is a pressing need for all sectors in the society to play a lead or supporting role

A. Approtech Asia's Regional Programs Focusing on Water and Sanitation:

During its initial stage of operation, the Alliance organized the first major forum on water and sanitation among Asian NGos. That forum brought together Asian leading NGOs to discuss and learn affordable technologies in the provision of water supply and sanitation for rural and urban poor.

As an offshoot to this Forum Approtech Asia has implemented the Diviner Project (Approtech Asia Information System on water and Sanitation). The first phase was started in 1987 with the goal of developing and maintaining a database of experts, projects and literatures on water and sanitation that are produced and/or appropriate to NGOs in the Asian region. Phase 1 resulted in the setting-up of a regional database consisting of directory of projects, registry of experts and practitioners and bibliographies. A second phase of the Project has been implemented with the goal of building-up the skills of selected NGOs to handle information in their day-to-day work in implementing community-based water and sanitation programs. Three national NGOs, all members of Approtech Asia, and four provicial NGOs were selected to act as Focal Points for the implementation of the Diviner Project's second phase.

In 1991, Approtech Asia organized the first Asia NGO Consultative Meeting on Water Supply and Sanitation which was held in Manila, Philippines. The objectives of the Consultative Meeting were: a) to identify issues that affect the development and implementation of water supply and sanitation projects; b) to identify factors that affect the capacity of NGOs to implement larger-scale projects; c) to exchange experiences on modalities of project design and implementation; and, d) to identify the means for promoting and strengthening the role of NGOs within the national sector-related policy and program development and implementation process.

One priority issue identified during the Consultative Meeting was the creation and strengthening of national NGO networks and fora to reinforce the competence, effectiveness and credibility of NGOs working in water supply and sanitation sector. As such, Approtech Asia, in collaboration with thye International Secretariat for Water has organized in the Philippines the first "National NGO Consultation-Workshop on Water and Sanitation".

This Consultation-Workshop hopes to establish country-level linkage mechanisms as a precursor to the integration of local NGOs into the national water supply and sanitation policy and development and implementation framework. Hopefully, the gathering will enable NGOs to bind together for a stronger representation in the formulation of national policy and program on water and sanitation.

B. Water and Sanitation Programs of AA Member-NGOs:

Approtech Asia member-NGOs have been pursuing their water supply development projects with the same urgency and fervor that such a life-or-death need demands. Programs to tap and develop water sources, whether for drinking or other purposes are visible in all of Approtech Asia's members' work. And in implementing these projects, these NGOs always solicit the active participation and involvement of various sectors in the community. The following are Approtech Asia's member-NGOs and their respective projects on water and sanitation:

1. Population and Community Development Association (PDA), Thailand

PDA's Project *Tungham* trains people to construct bamboo-reinforced water catchment tanks, the local term for which gives the project its name. These tanks can store up to 11,300 liters each. Over 5,000 tanks have been built by PDA.

The Association has also constructed 320 water jars in 16 southern Thai villages while teaching the local people the technique for making these. Al alternative ownership scheme promoted by the association has encouraged the installation of 60 community handpumps.

2. Sarvodaya Shramadana Movement, Sri Lanka

Water wells cost little, in fact, demand very little cash outlay for a movement that is rich in dedicated and organized people. Sarvodaya digs and seals wells, and installs a cheap but durable handpump. Moreover, gravity water supply systems are being constructed in Sri Lanka's hilly areas.

Sarvodaya workshops manufacture the well rings and pumps while well-digging and renovation is organized through people's camps. The PVC handpump was introduced in Sri Lanka as an exotic but potentially adaptable technology. The pump is now moving out in the hands of the technicians and into the hands of the people - an appropriate technology of the kind most likely to bring clean water to all who need it.

3. Bhagavatula Charitable Trust, India

BCT operates 4-1/2" and 6" rigs for tapping groundwater. In its integrated rural development program for villages, it has helped dig open wells and bore wells. It also trains rural youth in pump maintenance. BCT has also installed windmills.

4. Kerala Gandhi Smarak Nidhi, India

In collaboration with the Water Resources Development Center of the government, the Nidhi sets up the drip irrigation system for dry land cultivation. The Nidhi centers also undertake projects that provide drinking water facilities and

sanitation programs such as construction of latrine and cleaning of water sources and public places

5. Bangladesh Rural Advancement Committee, Bangladesh

Landless rural people are now entrepreneurs: they communally own irrigation systems and sell water to farmers. With BRAC's assistance, the landless owning groups buys shaallow tubewells or low-lift pumps, and build irrigation channels to supply the water. As payment for the water, farmers give them a portion of the harvested crops.

6. Gonoshasthaya Kendra, Bangladesh

This organization has the knowhow for purifying water for use in manufacturing low-cost, high-quality drugs for the poor. Their processed water must be free from unwanted minerals such as calcium, manganese, iron, and silica. It must also be germ-free.

7. Yayasan dian desa, Indonesia

Water supply systems and related technology have been at the forefront of YDD's rural development activities. Among their projects are: gravitational water supply systems for villages with spring sources; hydraulic ram pumps to bring water from rivers to higher villages; bamboo and ferrocement water catchment tanks for storage. Low-cost purification techniques such as simple sand filtration and the use of Moringa seeds as purifiers have been introduced to villages by YDD.

8. Pagtambayayong Foundation, Philippines

Adequate water supply is vital in Pagtambayayong's housing projects. A communal water supply comprising an artesian well and a bamboo-reinforced water tank was built in their low-cost housing site in Cebu province. Homeowners were also taught how to construct concrete water jars for storage. For sanitation, Pagtambayayong encourages and teaches the dwellers to construct comnpost toilets using waste cans, bamboo thatch and mud.,

THE ROLE OF PRIVATE SECTOR:

Approtech Asia, in implementing water and sanitation activities, articulates the importance of the participation of the private sector through programs that harness the knowledge and skills of the corporate sector situating their social development strategies in the context of their business objectives.

1. Philippine Business for Social Progress: A Business = Sector Initiative

An innovative approach in this concept is being implemented the Philippine

Business for Social Progress (PBSP), a member of Approtech whose water supply project, in collaboration with the business sector, has proved to be one of the most successful NGO-Business sector collaboration in the Philippines.

The PBSP was established in 1971 by the Philippine business sector as a group to answer the needs of the disadvantaged and is now recognized as a credible social development institution with a people-oriented agenda. Annually, member companies contribute 60% of 1% of their net income before taxes to PBSP. Since 1971, member companies have contributed over 100 million Pesos to PBSP which, in turn, uses these funds to provide poverty groups with access to resources and power for their own progress.

In mid 1980s, PBSP launched "Tubigan ng Kalayaan" (Water of Freedom) Project which was able to raise much needed funding from the business sector for the installation of around 500 water supply systems (shallow and deep wells, spring developments, rainwater cisterns) and sanitation facilities in 17 provinces benefitting 14,000 households. This project was so successful that it spurred the formation of a new NGO, the "Tulungan sa Tubigan" (Helping for Water) Foundation (TSTF) in 1987. TSTF took over the "Kalayaan" project of PBSP and now provides financial, technical and training assistance to organized groups, whether, government or private, engaged in potable water supply projects. International and local institutions in both public and private sectors have generously supported TSTF's efforts. The magnitude of the task requires more resources and TSTF conducts regular fund campaigns to solicit financial support from the civic-spirited and philantropic citizens, leaders and organizations.

2. Bangladesh NGO Forum: Collaborates With the Civic Organizations

Another Approtech Asia member, the NGO Forum for Drinking Water in Bangladesh, promotes inter-sectoral collaboration in implementing community-based projects. It solicits the support of all possible sectors in the community - the school, the youth, women, civic organizations and business - in implementing water and sanitation projects. It formed a national task force on social mobilzation to ascertain the area of responsibilities among the concerned agencies/sectors on the basis of mutual consultation. Members of its Social Mobilization sub-committee includes representatives from the Lions and Rotary Clubs and the artists. Today, the NGO Forum has been successful in beefing up the complementary role of the NGO sector for water and sanitation in Bangladesh.

3. NGO-Private Sector Consultation:

The scheduled National NGO Consultation-Workshop in the Philippines being organized by Approtech Asia is significant in the sense that the private sector was invited to this consultation-workshop designed to strengthen country-level networking and coordination among NGOs and their participation in the formulation and implementation of national programs and policies on water supply and sanitation. The

presence of the private sector in this event would provide a clearer perspective on the role of NGOs in the provision of water supply and sanitation and the support that they would need and possibly get from the private sector. This encounter between NGOs and the private sector hopes to provide boost to the concerted effort of the sectors in implementing water and sanitation projects.

CONCLUSION:

Approtech Asia , as a network of development NGOs, pursues its commitment of promoting the development, transfer and utilization of environmentally sustainable technologies that will benefit a greater number of people. Water and sanitation will be a priority program of the Alliance. In implementing water and sanitation projects, Approtech Asia shall strive to promote the participation of all possible sectors in the society in its effort to provide safe water supply and sanitation to its target beneficiaries.

In so doing, Approtech Asia will intensify its efforts to expand its program coverage through global networking and collaboration. It hopes to maintain its collaboration with international NGOs which deal with water and sanitation, particularly with the International Secretariat for Water (ISW) and its network partners.

The challenge for NGOs in the water and sanitation sector is immense. We have to respond to this challenge.

ABOUT ASIA:

Asia today is a region of stark contrasts. While it is one of the most buoyant regions of the world, Asia on the other hand continues to be home to widespread poverty. Just how widespread is this poverty can be seen in the World Bank's World development Report which estimates the number of poor in Asia to be as high as 800 million people (280 million in East Asia and 520 million in South Asia).

Poverty in Asia - in the sense of low income and nutritional deficiency - is likely to persist in low and middle-income countries because of the lack of effective institutions and policies to help the poor. Poverty however is characterized by more than low-income and malnutrition. It also means poor health and lack of facilities such as education, housing, safe water and sanitation facilities.

ABOUT THE PHILIPPINES:

The Philippines, referred to as the "Pearl of the Orient" is comprised of 7,107 islands, of which only 11 main islands account for more than 95% of the country's total land area of 300,400 sq. kms. The islands are dotted with numerous white-sand beaches, exotic tropical vegetation and beautiful lakes and rivers. Its population as of 1990 is 60,684,887. The Philippine represents the northern-most extension of the Malay culture, although its people have been deeply influenced by the Spaniards, American and Chinese culture and influence. English is widely spoken -the Philippine is the third-largest English-speaking country in the world. Majority of the population, about 85%, is Roman Catholic.

Despite the devastating eruption of Mt. Pinatubo, the Philippines remains an attractive tourist destination because of its round-the-year warm climate, comparatively low prices, breathtaking natural scenery - and its people's unique kind of hospitality, which remains as sincere as ever despite difficult economic times.

WORLD HEALTH ORGANIZATION
Regional Office for Europe
Environment and Health Department
European Centre for Environment and Health
Nancy Project Office

THE NANCY PROJECT OFFICE

WHO WE ARE

The World Health Organization (WHO) is the specialized agency of the United Nations with primary responsibility for international health and public health. Through WHO, which was created in 1948, Member States exchange their knowledge and experience with the aim of creating Health for All by the year 2000.

The WHO Regional Office for Europe, located in Copenhagen, Denmark, is one of six regional offices throughout the world. It serves the needs of more than 850 million people living in an area stretching from Greenland in the northwest and the Mediterranean in the south to the Pacific shores of Russia.

The Nancy Project Office, which officially opened in October 1992, is part of the Environment and Health Department of the WHO Regional Office for Europe. The Environment and Health Department consists of a network of five locations: Copenhagen, Athens, Bilthoven, Nancy and Rome.

The locations in Bilthoven, Nancy and Rome are gathered together under the banner of the WHO European Centre for Environment and Health. The governments of the Netherlands, France and Italy, respectively, fund the Centre as contributions to the work of the Regional Office. The Centre was created as a direct outcome of the European Charter on Environment and Health, adopted by 29 European countries and the Commission of the European Communities in December 1989 at the First European Conference on Environment and Health in Frankfurt, Germany.

WHAT WE DO

Each location of the Centre has specific areas of skills and expertise. The Nancy Project Office concentrates on resolving the more intractable problems of community water, wastewater and waste management. As these problems are particularly acute in central and eastern Europe and the newly independent states of the former USSR, we focus our efforts there.

The rapid industrialization of the recent decades in this part of the world has been bought at the cost of the natural environment and a consequent loss of human wellbeing and damage to public health. Many communities face real health threats from the lack of reliable and clean water services - even in major cities, proper waste disposal services, and urban and industrial wastewater treatment.

While technical solutions to urban environmental services are often straightforward, the great economic difficulties of many countries are likely to thwart simple and quick answers. The world-wide evidence is clear that community health and community economy are inextricably intertwined. The Nancy Project Office is well aware that a community's environmental progress is constrained by its economy, and that its economy is equally constrained by its environment.

It is expected that most communities must develop long-term, step-by-step improvement programmes with budgets, financial forecasts and revenue management that must go hand-in-hand with engineering, construction, laboratory analysis and staff training. The Nancy Project Office can be helpful in identifying many of the priorities and the cost-effective intermediate steps that economic circumstances dictate.

The Nancy Project Office is already cooperating with authorities in Poland and the Russian Federation on difficult issues of community environmental services.

HOW TO CONTACT US

The Nancy Project Office offers its advice and assistance to Member States of the WHO Regional Office for Europe. We invite them and their communities to contact us to discuss their water, wastewater and waste problems.

Nancy Project Office
WHO European Centre
for Environment and Health
149 Rue Gabriel Péri
54500 Vandoeuvre
France

Tel: (+33) 83 15 87 70
Fax: (+33) 83 15 87 73

ORGINAL

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12 Mai 1993

Water Supply Foundation

La Societé civile et son implication dans la recherche de solution aux problèmes d'eau potable et d'assainissement, d'environnement et de qualité de vie.

Les problèmes de l'eau en Europe Centrale et Orientale: contribution et participation du secteur associatif aux solutions

Varsovie, 16-19 Mai 1993

Patrick Marchandise, Directeur de Projet, Eau
Organisation Mondiale de la Santé
Bureau de projets de Nancy
Centre Européen de l'Environnement
149 rue Gabriel Péri
54500 Vandoeuvre
France
Téléphone: 33 83158776
Fax: 33 83158773

M. le Président, Mesdames, Messieurs,

On m'a demandé dans le cadre de ces journées, de présenter rapidement en introduction de ce thème, un exposé un état de la situation de l'eau et des perspectives d'amélioration dans les pays d'Europe Centrale et Orientale

L'eau est effectivement un élément primordial de l'environnement et de la qualité de la vie, ou de la vie tout simplement. Ceci n'a pas échappé à l'OMS qui après la décennie de l'eau des années 1980 a fixé parmi ses objectifs pour la santé pout tous en l'an 2000 un objectif no. 20 qui concerne l'eau et qui est "d'ici l'an 2000, toutes les populations de la Région Europe devraient disposer d'un approvisionnement satifaisant en eau potable, et la pollution des eaux souterraires, des cours d'eau, des lacs et des mers ne devrait plus engendrer de risques pour la santé".

Dans cette optique, l'OMS, bureau Europe a renforcé ses moyens en créant au sein de son département Environnment Santé, un centre européen Environnement-Santé qui comprend un bureau de projet à Nancy dont la mission est l'aide à la résolution des problèmes liés à l'eau en particulier: distribution fiable- conformité aux normes - traitement des eaux usées urbaines et industrielles

Les améliorations de l'environnement et les évolutions économiques et sociales sont intimement liées mais la vocation du bureau de Nancy est d'aider les collectivités à identifier les priorités et à établir des programmes d'amélioration à long terme.

Toutes les analyses de situations qui peuvent être faites doivent partir d'une situation existante; celle ci est toujours spécifique et nécessite un examen particulier et il m'est impossible de décrire ici les cas particuliers examinés; on peut cependant faire un certain nombre d'observations générales que je vais vous présenter.

Celles-ci vont être orientées en essayant de faire préciser les rôles et les responsabilités de chacun qui pourront faire l'objet d'études de cas dans la suite de ces journées.

Il est vrai que l'eau est un bien social indispensable qui doit être à la disposition de tous mais c'est un produit qui n'est ni inépuisable en quantité ni toujours de qualité correspondant aux usages qu'on veut en faire.

C'est donc un bien collectif qu'il faut gérer ensemble au différents niveaux de responsabilités nationaux, régionaux, municipaux.

1. Au niveau national

Il appartient de fournir les bases législatives et réglementaires nécessaires à la gestion:

- normes de qualité
- moyens répressifs et incitatifs
- organisation du contrôle
- développement des programmes d"éducation et de la recherche
- information et évaluation

Le contrôle est souvent un point faible de l'organisation; alors que les normes s'appuyant sur des recommendations internationales comme celle de l'OMS pour les eaux potables par exemple existent en général.

2. Au niveau régional

La "région" hydrologique doit reposer sur une unité de gestion. L'unité naturelle est celle du bassin versant. Ce niveau correspond tout à fait à celui de la concertation entre différents usagers d'un même bien qui peut avoir divers usages; ces derniers requièrent diverses exigences nécessitant une implication de ces usagers, implication pouvait être facilitée par des objectifs "au niveau du bassin" bien définis, bien compris et des mesures incitatives. L'intérêt de tous les usagers étant commun puisqu'il est de connaître et de préserver leur ressource.

3. Au niveau local

L'arsenal réglementaire doit pouvoir être utilisé pour protéger les ressources par des périmetres de protection, pour réglementer les rejets polluants, etc.

Les ressources des agglomérations ont souvent été, à l'origine, de qualité correcte et de quantité suffisante. Mais la qualité a été dégradée soit par une protection insuffisante soit par une "demande en eau" importante qui impose un dépassement des capacités des installations ou qui nécessite le recours à des ressources de qualité moindre. D'où la nécessité de développer des traitements de plus en plus coûteux sans pouvoir satisfaire un service continu partout. Cette insuffisance du service en qualité (voir illustration sur quelque pays) et en quantité nécessite des remèdes.

Ces remèdes ne sont pas, souvent, une augmentation des capacités de production et de distribution qui, sans que le client soit satisfait, atteint déjà des chiffres de "consommation" de 2,3,4,5 fois ceux des pays occidentaux, chiffres qui pourraient augmenter indéfinement. Ces remèdes doivent être des actions des responsabilisation telles que:

- une information du public
- une formation des jeunes
- une nécessaire responsabilisation économique des usagers qui paieront pour le service que représente l'usage d'un bien qui leur est livré à domicile.

Il est important d'aller vers une notion d'équilibre budgétaire d'un service de gestion des eaux; équilibre comprenant à la fois les coûts de fonctionnement et les coûts d'investissement. Ceci est une notion importante qui peut conduire le gestionnaire à favoriser l'entretien de ses réseaux et faire de cette manière des économies d'eau (réduction des pertes) ayant pour conséquence une augmentation de la qualité et une diminution des coûts de fonctionnement.

De même la notion d'unité de production et d'unité de gestion (du pompage au consommateur) rend nécessaire l'appartenance des équipements à la collectivité publique - la municipalité en l'occurence -, que ce soit elle qui gère directement ou non le service des eaux.

Enfin, la nécessaire confiance que doit avoir le client dans la qualité du service rend obligatoire le contrôle de qualité (dont la nature et la fréquence sont à définir au niveau national) par des organismes dont la qualification est reconnue au niveau national.

Ces quelques éléments introductifs d'information m'amènent à conclure cette présentation en laissant la parole à tous les partenaires consommateurs que nous sommes tous afin de démarrer la concertation précédemment évoquée.

OFFICE INTERNATIONALE DE L'EAU

INTERNATIONAL SEMINAR "NON—TRADING COMPANY AND ITS INVOLVEMENT IN THE SOLUTION OF PROBLEMS CONCERNING WATER MANAGEMENT AND ENVIROMNENT" WARSAW — 17/19 MAY 1993

Report of Mr. Jean-Francois DONZIER

OFFICE INTERNATIONAL DE L'EAU
INTERNATIONAL OFFICE FOR WATER
21, rue de Madrid - 75008 PARIS (FRANCE)
Tel (33-1) 45.22.14.67.- Fax (33-1) 40.08.01.45

Taking into consideration the environment in the process of growth and development require a really democratic life that is based on clarity of information on the participation of all concerned parties and their opportunity to express, on effective and independent control, means of recourse and sanctions.

Efficiency gives access to organisation of decentralized management and administration at the territorial level, which is the closest to different actors concerned by each category of decisions. In consequence, this implies the existence of instances, of partner debates or arbitration that allow to ensure the universality of approaches, the continuity of solutions and means, the integration of all stakes, the settlement of conflicts.

From these different points of view, the general or specific provisions in the sector of water that have been gradually elaborated in France, without being presented as a model, can serve as the example to consider

A - DECENTRALIZATION OF COMPETENCIES

The State obviously ensure:

- the negotiation of the international agreements and guide lines or rules within the European Economic Community,

- the definition of legislative and statutory framework and the standardization,

- "water policy", the authorization of sampling and wastes as well as the control of the factories classified hazardous or insalubrious and the consumer protection (health),

- large developments are being planned and controlled by the local public institutions (CNR, SCP, SBRL) or by the

organizations of interdepartmental or shared by communes cooperation (EPALA, EPIDOR...),

- but especially, the communes (36 763 of them) or their syndicates, ensure the direct responsibility for the organisation and management of drinking water supply, collecting and treatment of waste and rain-water, for the control of individual purification and control of rivers as well as the branches "water" of the plans of land development or regrouping of land.

It also has to ensure the protection of water intakes against the risks of pollution.

The decisions are made within the framework of the legislation in force by local government, elected in direct universal suffrage or by Syndicate Committees that consist of elected representatives of concerned communities.

B - PARTNERSHIP

It is organised permanently with the users principally at three levels:

- At the level of river basins within six Basin Committees that gather the representatives of local communities, farmers, industrialists supervisors and other users of water (fishermen, aquiculturists...), associations.

These committees are consulted obligatorily in order to:

- decide about the amount of payments collected from sampling and wastes,

- define the most important objectives and conditions of aid envisaged in the five-year program of Agencies for Water,

- elaborate new guiding Projects of Planning and Management of Waters (SDAGE),

Each of the Basin committees is presided by an elect of the regional communities.

- At the level of affluents, local communities can form a Local Commission for Water that elaborates, according to SDAGE, the Project of Planning and Management of Water (SAGE).

The SDAGE as well as SAGE after their approval by the authorities are the official and public documents that allow to motivate the authorities of the Administration referring to the planning of basins and utilization of water.

- At the level of towns, the Consultative Commission of Local Public Services allows to associate the users of these different services, especially water consumers, with the help of their representative associations with the organisation and the management.

C - INFORMATION AND CLARITY

Concerned citizens or the representative associations of general or collective interests have the possibility to access to all administrative documents that they can consult without restraint.

Important operations of development, plans and documents binding to a third party, creating or improving the servitude, projects leading to expropriation, transfer or reduction of right of use or right of property are object of public purposes inquiry.

The dossier is placed at the disposal for a long period, for the population in Local Government Service, in prefect's offices and Administrative Departments.

Everybody can consult these documents and write down his opinions, suggestions or critiques in an inquiry book and he can meet a Commissioner, totally independent of the investor and administration, who after having finished the inquiry, present his report to the competent authorities.

In support of all demands of administrative authorization, of declaration of public purposes, administrative procedures, the dossier has to include obligatorily either a Study of Impact on the Environment, whose content is determined by the law or a short report of impact for the smallest projects.

The Plans for Land Planning include a sanitary annexes for drinking water and purification, a study on exposure to major natural and industrial risks, a plan of servitude as well as delimitation of individual purification sectors and collective purification sectors; they are placed at the public disposal before their approval.

D - CONTROL, RECOURSE AND SANCTIONS

State administration has to control the conformity during the project realization and the waters policy in order to verify that there are no underground sampling or wastes, or emission of pollutions hazardous to health or ecosystems, or destruction or modification of sites or biotopes.

State services can:

- make administrative provisions especially suspend or close-down institutions,

- prosecute the contraveners or those who pollute the environment who can be given, for certain offenses, the penalty of fine or imprisonment, and should the occasion arise they can be sentenced for indemnification

The associations of users, consumers or the associations for nature protection legally entitled to act under certain conditions can refer a matter to the courts and they can even stand as plaintiff claiming damages.

Every citizen or representative association can contest all administrative acts:

- either by appeal through the official channels to the competent Ministry,

- or by bringing a matter before the administrative court and by appeal of the Council of State.

E - ACCESS TO KNOWLEDGE

There can be no efficient partnership or constructive contestation without good knowledge of the approached topics and of the institutional framework of the project and of the possibility of intervenience.

It is always against the rules to speak or do no matter what, no matter how, especially to convey false ideas, even commonly accepted, and to act beyond the law.

This knowledge should be acquired in different fields:

NATURAL RESOURCES, THEIR USAGE, THEIR FRAGILITY

From this point of view, an easy access to data-base facilitating the acquaintance with the quantity of water available at the surface and in the water-bearing beds, the quality according to different physical, biological and chemical parameters, sampling and wastes, abundance and fragility of fauna and flora, is absolutely necessary.

French Department of Environment have placed a project of creation of:

- the National Network of Data for Water (RNDE) aiming to render easily accessible all information from specialized data banks, and to allow "inter-banks" synthesis.

- the Secretariat of Nation Administration of Data for Water (SANDRE) in order to build a dictionary of available data and to harmonize the record of measures and analyses, the vocabulary and the methods of management so that information exchange, comparisons and correlations are more available, and to simplify the users' access to data.

From now on, the communities of certain big rivers as Loire, are in course of organization of the "observatories" that compile and diffuse studies and data necessary for good information.

The analyses of distributed drinking water as well as the quality of baths water have to be posted up at town halls and placed at the public disposal permanently.

INSTITUTIONAL FRAMEWORK AND MECHANISMS OF ADMINISTRATION AND MANAGEMENT OF A SECTOR

It is always very difficult to know well:

- the legislation
- the mission and competence of different administrative actors,
- the methods of intervention of each partner, distribution of powers, financial policy etc..,
- the principles of management of the budget and accountancy.

Partners, elects, professionals, persons responsible for associations become often confused facing such complexity. They rarely have the access to "digested" information or time to go deep into all problems.

Besides, often and paradoxically, these responsible agents receive superfluous information from the press or varying mail that they cannot assimilate. The elects become victims of such overdose of paper.

This is why in France it was decided to introduce the specific programs of "help for decision making" for partners of water management, especially for those who do not have any permanent counselling services.

- the elects of small communities
- the managers of small industries,

based on the pedagogic methods adapted to their specific needs and assuming the realisation of numerous information sessions taking place in proximity of the residence of interested persons, scheduled after their work-hours and with teaching aids (video, booklets, slides projections) especially designed for this specific public.

From now on 57 french departments initiated this type of program for benefit of their municipal elects; International Office for Water is their national operator and have already acquired wide experience in this field, presented during a conference "EUROPE BLEUE" (Blue Europe) organised in Limoges in March 1993 by the Council of Europe. Its topic, concerning educational training was:

"Taking decisions in water sector by the local elects and administrators"

But beyond these specific programs, information has to be easily accessible and always available to everybody.

This is the reason why International Office for Water was chosen to create the National Service of Information and Documentation of Water that spreads by TELETEL 36-17 Eaudoc all references helpful for the elects, professionals, associations and educators;

- office activities
- training programs
- research in progress
- organisms of administrations and public institutions,
- educational sessions for local elects,
- the list of research departments and material deliverers,
- in the end, water library that make possible the access to over 150 000 economic, legal, technical documents. For the latest ones, the subscribers may immediately place an order and automatically receive numbered copies through their fax within an hour.

General and Specialized press is also a powerful instrument of education, information and lobbying.

Large ecologic movements throughout Western Europe and North America established their capacity to be "against authorities", particularly effective, teaching to use mass-media in a professional way.

The capacity to widespread information through specialized press is an important element of ecological awareness, so that the decision makers as well as the public become educated and sensitive. Thanks to them we improve patrimonial management of water resources and we also improve the quality of services offered to population.

OFFICE INTERNATIONAL DE L'EAU

INTERNATIONAL SEMINAR
"NON-TRADING COMPANY AND ITS IMPLICATION
IN THE SOLUTION OF PROBLEMS CONCERNING WATER MANAGEMENT AND ENVIRONMENT
WARSAW - 17/19 MAY 1993

Annexes to the report of Mr Jean-Francois DONZIER

WATER MANAGEMENT IN FRANCE

OFFICE INTERNATIONAL DE L'EAU
INTERNATIONAL OFFICE FOR WATER
21, RUE DE MADRID - 75008 PARIS (FRANCE)
TEL (33-1)45.22.14.67 - FAX (33-1) 40.08.01.45

OFFICE INTERNATIONAL DE L'EAU

WATER MANAGEMENT IN FRANCE

I - COMMUNAL FRAMEWORK

II - ROLE OF STATE:

- At the central level
- At the basins level
- At the local level

III - PUBLIC INSTITUTIONS AND NATIONAL COMPANIES

- Administrative and financial
- Of development

IV - COMPETENCIES OF LOCAL COLLECTIVITIES

- For the management of water supply
- For the control of rivers and communal site planning

V - INTERNATIONAL OFFICE FOR WATER

OFFICE INTERNATIONAL DE L'EAU

WATER MANAGEMENT IN FRANCE

I

COMMUNAL FRAMEWORK

Under the "Unique Act" the Commission of European Economic Committees follow the competencies in the matter of Environment:

Provisions and rules

Norms

Observation of the state of the environment (European Agency of Environment)

OFFICE INTERNATIONAL DE L'EAU

WATER MANAGEMENT IN FRANCE

II

ROLE OF STATE

AT THE CENTRAL LEVEL:

- International negotiations (treaties and provisions EEC)

- Legislation and regulation (especially, transcription to national law of EEC provisions)

- Coordination:

  * of ministries - Inter-ministerial Committees for Water

  * of partners - National Council for Water

- Observations: French Institute of Environment
National Bank of Water - S.A.N.D.R.E.

- Management of National Funds for Development of Water Supply (FNDAE)

At the basin level:

- 6 prefects coordinators of basin and representative mission of basin

- 6 basin committees - elaboration of SDAGE

At the local level:

- water policy - control of sampling and wastes: DDAF,DDE and DRIRE

- Sanitary control - fitness for drinking and quality of baths: DDASS

- Control of classified institutions: DRIRE and DDAF
- Planning and observing: DIREN

OFFICE INTERNATIONAL DE L'EAU

WATER MANAGEMENT IN FRANCE

III

PUBLIC INSTITUTIONS, NATIONAL COMPANIES

Agencies for Water:

- collection of payments on the principle "who pollutes - pays" for sampling and wastes

- five-year planning

- studies and research

- observation of basin

Superior Council for Fishing

Waterways of France

Investors

- Electricite de France - storage dam management

- Compagnie Nationale du Rhone

- Companies for Regional Development
  - Compagnie d'Amenagement du Bas-Rhone et du Languedoc (Company for Development of Bas-Rhone and Languedoc

  - Societe du Canal de Provence (Company of the Channel of Provence)

  - Companie d'Amenagement des Coteaux de Gascogne (Company for Development of Gascogne)

  - Societe de Mise en Valeur de l'Auvergne et du Limousin (Company for Land development of Auvergne and Limousin)

  - Compagnie d'Amenagement Rural d'Aquitaine (Company for Rural Development of Aquitaine)

  - Office Regional Hydraulique de Corse (Regional Hydraulic Office of Corse)

OFFICE INTERNATIONAL DE L'EAU

WATER MANAGEMENT IN FRANCE

IV

COMPETENCIES OF LOCAL COLLECTIVITIES

- Departments:

  * organize rural public services

  * plan the National Funds for Development of Catchment Area (FNDAE)

  * intervene for na equalization of charges for water between the communes

- Communes and their grouping and syndicates:

  * organise and manage municipal services of catchment area, of collection and treatment of waste and rain water or hands it over to the companies of private distribution

  * protect resources - mayor policy and perimeters of catchment area protection

  * control individual purification

  * distribution of waters

  * land development - regrouping of land

- Local committees for water and local communities for water

  * elaborate Projects of Planning and Management of water (SAGE)

  * execute planning and works

OFFICE INTERNATIONAL DE L'EAU

WATER MANAGEMENT IN FRANCE

V

INTERNATIONAL OFFICE FOR WATER

Gather all partners:

- Agencies of bi and multilateral cooperation (EEC, the World Bank, P.N.U.E., G.T.T., C.C.C.E., B.E.R.D.)

- Ministries
- 6 Water Agencies
- Local collectivities
- Universities and research centres

Develop collective services:

- National service of Information and Documentation on Water TELEM'EAU -36-17 EAU DOC

- National Administration of Data for Water Resources (SANDRE)

- Professional further education

- Popularization of studies and researches

Organise international cooperation for water

- Institutional support to governments, sleeping partners, municipalities, offices and national companies for water

  * valuation and counselling
  * information and training
  * legal and documental support

- Study and development of projects, support of international network of educational centres and support of national and regional transfer of technology

OFFICE INTERNATIONAL DE L'EAU

SEMINAIRE INTERNATIONAL
"LA SOCIETE CIVILE ET SON IMPLICATION
DANS LA SOLUTION DES PROBLEMES
DE GESTION DE L'EAU ET DE L'ENVIRONNEMENT"

VARSOVIE – 17/19 MAI 1993

Exposé de Monsieur Jean-François DONZIER

OFFICE INTERNATIONAL DE L'EAU
INTERNATIONAL OFFICE FOR WATER
21, rue de Madrid – 75008 PARIS (FRANCE)
Tél. (33- 1) 45.22.14.67 – Fax (33–1) 40.08.01.45

Une réelle prise en compte de l'environnement dans l'aménagement et le développement suppose une véritable vie démocratique qui repose sur une information transparente, sur la participation et la possibilité d'expression de toutes les parties intéressées à la préparation des décisions, sur des contrôles efficaces et indépendants, des moyens de recours et de sanctions.

L'efficacité commande l'organisation d'une gestion et d'une administration décentralisée au niveau territorial le plus pertinent, qui soit le plus proche des différents acteurs concernés par chaque catégorie de décisions. Cela implique, comme corollaire, l'existence d'instances selon le cas de coordination, de débat partenarial ou d'arbitrage, qui permettent d'assurer la globalité des approches, la continuité des solutions et moyens, l'intégration de tous les enjeux, le règlement des conflits.

De ces différents points de vue, les dispositions générales, ou spécifiques au secteur de l'eau, que la France a mis progressivement en place, sans être présentées comme un modèle, peuvent servir d'illustration à la réflexion.

A - LA DECENTRALISATION DES COMPETENCES

Si l'Etat assure bien évidemment :

- la négociation des accords internationaux et des directives ou règlements au sein de la C.E.E.,

- la définition du cadre législatif et réglementaire et la normalisation,

- la "police des eaux", l'autorisation des prélèvements et des rejets et le contrôle des établissements classés dangereux ou insalubres, ainsi que la protection des consommateurs (santé),

- les grands aménagements sont désormais pour l'essentiel programmés et gérés par des établissements publics régionalisés (CNR, SCP, SBRL ...) ou par des organismes de coopération interdépartementale ou intercommunale (EPALA, EPIDOR ...),

- mais surtout, les communes (au nombre de 36.763), ou leurs syndicats, assurent la responsabilité directe de l'organisation et de la gestion des services de l'eau potable, la collecte et le traitement des eaux usées et pluviales, du contrôle de l'assainissement individuel, de l'aménagement des rivières ainsi que des volets "eau" des plans d'occupation des sols ou des remembrements agricoles.

Elles ont à assurer également la protection des points d'eau contre les risques de pollution.

Les décisions sont prises, dans le cadre de la législation en vigueur, par les Conseils Municipaux élus au suffrage universel direct ou les Comités Syndicaux composés des représentants élus des collectivités concernées.

B – LE PARTENARIAT

Il s'organise de façon permanente avec les usagers principalement à trois niveaux :

• Au niveau des grands bassins versants, au sein des six Comités de Bassin qui regroupent les représentants des collectivités locales, des agriculteurs, des industriels, des aménageurs, des autres utilisateurs de l'eau (pêcheurs, aquaculteurs ...), des associations.

Ces comités sont consultés obligatoirement :

+ pour fixer le montant des redevances perçues sur les prélèvements et les rejets,

+ pour définir les objectifs prioritaires et les modalités des aides prévues aux programmes quinquennaux des Agences de l'Eau,

+ pour élaborer les nouveaux Schémas Directeurs d'Aménagement et de Gestion des Eaux (SDAGE).

Les comités de bassin sont chacun présidés par un élu des collectivités territoriales.

• Au niveau des affluents, les collectivités locales peuvent constituer une Commission Locale de l'Eau qui élabore, en conformité avec le SDAGE, un Schéma d'Aménagement et de Gestion des Eaux (SAGE).

Les SDAGE comme les SAGE, après leur approbation par les autorités, sont des documents officiels et publics qui permettent de fonder les autorisations de l'Administration concernant les aménagements de bassins et les utilisations de l'eau.

. Au niveau des villes, la Commission Consultative des Services Publics Municipaux permet d'associer les usagers de ces différents services, notamment les consommateurs d'eau, par l'intermédiaire de leurs associations représentatives, à l'organisation et à la gestion.

C - L'INFORMATION ET LA TRANSPARENCE

Les citoyens concernés, ou les associations représentatives d'intérêts généraux ou collectifs, ont la possibilité d'avoir accès à l'ensemble des dossiers administratifs, qu'ils peuvent librement consulter.

Les grandes opérations d'aménagement, les plans et documents opposables aux tiers, créant ou modifiant des servitudes, les projets conduisant à des expropriations ou à des transferts ou réductions de droits d'usages ou de propriété, font l'objet d'enquêtes d'utilité publique.

Le dossier de l'opération est mis, durant une période suffisamment longue, à la disposition de l'ensemble de la population à la Mairie, en Préfecture, dans les Services de l'Administration.

Tout le monde peut le consulter et inscrire ses remarques, suggestions, critiques sur un cahier d'enquête, et demander à être reçu par un Commissaire-Enquêteur, totalement indépendant du maître d'ouvrage et de l'administration, qui à la fin de l'enquête, remet son rapport de conclusions aux autorités compétentes.

A l'appui de toutes demandes d'autorisation administrative, des déclarations d'utilité publique, des procédures administrative, les dossiers doivent obligatoirement comporter soit une Etude d'Impact sur l'Environnement dont le contenu est fixé par la loi, soit une notice d'impact pour les plus petits projets.

Les Plans d'Occupation des Sols comprennent, eux-mêmes, une annexe sanitaire pour l'eau potable et l'assainissement, une étude d'exposition aux risques naturels et industriels majeurs, un plan de servitudes, ainsi désormais que la délimitation des secteurs d'assainissement individuel et des secteurs d'assainissement collectif ; ils sont mis à la disposition du public avant leur approbation.

D – CONTROLES, RECOURS ET SANCTIONS

L'administration de l'Etat doit procéder à des contrôles de conformité lors de la réalisation de projets et à la police des eaux pour vérifier qu'il n'existe pas de prélèvements ou de rejets clandestins, ni d'émission de pollutions dangereuses pour la santé ou les écosystèmes, ni de destruction ou modifications de sites ou de biotopes.

Ces services de l'Etat peuvent :

– prendre des mesures administratives, notamment de suspension ou fermeture de service ou d'établissement,

– poursuivre devant les juridictions les contrevenants ou pollueurs qui peuvent risquer pour certains délits, des peines d'amendes ou d'emprisonnement et le cas échéant être condamné à la réparation des dommages.

Les associations d'usagers, de consommateurs ou de protection de la nature agréées, peuvent sous certaines conditions saisir les tribunaux et même se porter parties civiles.

Tout citoyen ou association représentative peut contester tous les actes administratifs :

– soit par recours hiérarchique auprès du Ministère compétent,

– soit par saisine du tribunal administratif et en appel du Conseil d'Etat.

E – L'ACCES A LA CONNAISSANCE

Il ne peut y avoir de partenariat efficace, ni de contestation constructive sans une bonne connaissance des sujets que l'on doit aborder et du cadre institutionnel dans lequel les projets se situent ou dans lequel il est possible d'intervenir.

Il est toujours, à terme, contre performant de dire et faire n'importe quoi, n'importe comment, notamment de véhiculer des idées fausses, fussent-elles parfois communément admises et de faire de l'activisme en dehors d'un cadre de droit.

Cette connaissance doit s'acquérir dans différents domaines :

* LES RESSOURCES NATURELLES, LEURS USAGES, LEUR FRAGILITE

De ce point de vue, l'accès facile à des bases de données permettant de connaître les quantités d'eau disponibles en surface et dans les nappes, la qualité selon les différents paramètres physiques, biologiques et chimiques, les prélèvements et les rejets, la richesse ou la fragilité de la faune et de la flore, est une nécessité.

Le Ministère français de l'Environnement vient de mettre en place un projet de création :

– d'un Réseau National des Données sur l'Eau (RNDE) visant à rendre plus facilement accessible les informations contenues dans les différentes banques de données spécialisées et à permettre des synthèses "inter-bancaires".

– d'un Secrétariat d'Administration National des Données sur l'Eau (SANDRE) pour dresser un dictionnaire des données disponibles et harmoniser les protocoles de mesures et d'analyse, les vocabulaires et les modes de gestion pour faciliter l'échange d'informations, les comparaisons et corrélations et simplifier l'accès des utilisateurs.

D'ores et déjà, les collectivités de certains grands fleuves comme la Loire sont en train de créer des "observatoires" réunissant et diffusant les études et données nécessaires à une bonne information.

Les analyses de l'eau potable distribuée ainsi que de la qualité des eaux de baignade doivent être affichées en Mairie et mises à disposition du public en permanence.

* LE CADRE INSTITUTIONNEL ET LES MECANISMES D'ADMINISTRATION ET DE GESTION DU SECTEUR

Il est toujours très difficile de bien connaître :

- la législation,
- la mission et les compétences des différents acteurs administratifs,
- les modalités d'intervention de chaque partenaire, la répartition des pouvoirs, les procédures de financement, etc...
- les règles de gestion comptable et budgétaire.

Face à une telle complexité, les partenaires, élus, professionnels, responsables d'associations, sont souvent déconcertés, et ont rarement l'accès à une information "digérée" ni le temps suffisant pour se consacrer à un approfondissement personnel.

Souvent d'ailleurs et paradoxalement, ces responsables reçoivent une information surabondante par la presse et des courriers divers qu'ils n'ont pas les moyens de traiter, a fortiori d'assimiler... Les élus notamment sont victimes d'une "over dose" de papier !

C'est pourquoi il a été décidé en France, de lancer des programmes spécifiques "d'aide à la décision" en directions des partenaires de la gestion de l'eau, en particulier, ceux qui n'ont pas de services permanents pour les conseiller :

- les élus des petites communes,
- les dirigeants de petites industries

basés sur des méthodes pédagogiques adaptées à ces besoins spécifiques et supposant la réalisation d'un grand nombre de sessions d'information proches des lieux de résidence des intéressés, aux horaires où ils sont disponibles (après leur travail), et avec des supports de présentation (vidéo, plaquette, projection de transparents) spécialement conçus pour ces publics.

D'ores et déjà 57 départements français ont engagé un programme de ce type au bénéfice de leurs élus municipaux : l'Office International de l'Eau en est l'opérateur national et a acquis une grande expérience dans ce domaine qui a notamment été présentée lors du colloque "EUROPE BLEUE" organisé à Limoges en Mars 1993 par le Conseil de l'Europe sur le thème de la formation à :

"La prise de décision dans le secteur de l'eau
des élus et administrateurs territoriaux".

Mais au-delà de ces programmes spécifiques, l'information doit être facile d'accès et à tout moment disponible à tous les publics.

C'est pourquoi l'Office International de l'Eau a été chargé d'élaborer un Service National d'Information et de Documentation sur l'Eau qui diffuse sur le serveur TELETEL 36 - 17 EAUDOC toutes les références utiles aussi bien aux élus, aux professionnels, aux associations, aux éducateurs :

- les activités de l'Office,
- les programmes de formation,
- les études en cours,
- les organismes des grandes administrations et établissements publics,
- les sessions de formation des élus locaux,
- la liste des bureaux d'études et des fournisseurs de matériel,
- enfin la bibliothèque de l'eau qui permet l'accès à plus de 150.000 documents économiques, juridiques et techniques dont pour les plus récents, les abonnés peuvent immédiatement passer commande et recevoir automatiquement les copies numérisées sur leur fax en moins d'une heure.

La presse généraliste et spécialisée est un puissant outil de formation, d'information et de lobbing.

Les grands mouvements écologistes d'Europe de l'Ouest et Nord Américains ont assis leur capacité à être des "contre-pouvoirs" particulièrement efficaces en apprenant à utiliser les grands médias de façon professionnelle.

La capacité à publier largement l'information, à communiquer par les médias avec des services de presse spécialisés est un élément important de la prise de conscience écologiste, comme un vecteur puissant de sensibilisation et d'éducationon des décideurs et de public grâce auxquels nous progressons vers une meilleure gestion patrimoniale et intégrée de la ressource en eau et vers une meilleure qualité des services offerts à la population.

EXTRA MUROS

Etudes. Conseils.
Services.
Réseau associatif.
Lille.

SEMINAIRE INTERNATIONAL D'EUROPE CENTRALE ET ORIENTALE

La société civile et son implication dans la recherche de solutions aux problèmes d'eau potable et d'assainissement, d'environnement et de qualité de vie

VARSOVIE - 17, 18, 19 MAI 1993

Les deux membres du réseau Extra-Muros participant au séminaire :

***Danielle POLIAUTRE** : Présidente de l'association EDA (Environnement et Développement Alternatif). Vice-Présidente de la M.N.E. de Lille (Maison de la Nature et de l'Environnement). Directrice Adjointe de l'Action Economique au Département du Nord.*

***André COLIN** : Gérant d'Extra-Muros. Chargé de Mission à l'ADU (Agence de Développement et d'Urbanisme) de Lille-Métropole. Adjoint au Maire de Lille.*

Invités par les organisateurs du séminaire sur proposition d'Extra-Muros :

***Sabrina SCHLIWANSKI** : Chargée de Mission auprès de Madame la Vice-Présidente du Conseil Régional du Nord responsable des Relations Internationales.*

***Louis POTIE** : Adjoint au Maire de Marseille. Délégué Général de l'Institut Méditerranéen de l'Eau. Animateur d'un réseau de 50 Villes du Monde signataire de la "déclaration de Marseille" sur la gestion de l'eau.*

EXTRA-MUROS 2, RUE DUCOUROUBLE - 59000 LILLE (FRANCE)
TEL : (33) 20.30.98.25 FAX : (33) 20.54.68.42

Intervention de Danielle POLIAUTRE

LA DEMOCRATIE SOURCE DE BONNE GESTION DE L'EAU

L'eau est une ressource vitale. On ne rappelera jamais assez combien cette ressource est précieuse.

- Les pays et les hommes qui en sont privés souffrent de sa **rareté** : 1 milliard et demi de personnes n'ont pas accès à l'eau potable.

  Or le droit d'accès à l'eau est indissociable des droits de l'Homme.

  Aujourd'hui, le non-respect de ce droit est le reflet des disparités géographiques et des inégalités.

- Simultanément, on assiste dans de nombreux endroits du globe à une **détérioration croissante de sa qualité**, due à l'exploitation inadéquate, à des formes de consommation irrationnelles, au gâchis et à la contamination des écosystèmes.

I. L'EAU : UN PATRIMOINE A PRESERVER

A - ENJEU QUANTITATIF

Indispensable à la vie, l'eau a de multiples usages.

Aujourd'hui nulle activité humaine, qu'elle soit énergétique, industrielle, agricole et même culturelle ne peut se dispenser de l'eau.

Elle est au coeur d'un conflit permanent d'usage entre la consommation humaine, la production (en particulier sa forme productiviste, grande consommatrice d'eau dans l'agriculture comme dans l'industrie) et les loisirs.

Entre 1940 et 1980, la consommation mondiale d'eau a doublé.

Quand elle se fait rare, elle peut également devenir source de conflit entre les peuples. Exemple : le Jourdan (entre Israël et la Jordanie).

Tout cela s'ajoute au fait que très souvent l'eau est exploitée par de grands groupes privés qui ont une vision de l'eau avant tout "mercantile" dans une perspective à court terme. Deux grands groupes, la Compagnie Générale des Eaux et la Lyonnaise des Eaux, se partagent par exemple le marché français.

B - ENJEU QUALITATIF

Trop longtemps l'eau a été considérée (là où elle était en quantité suffisante) comme une ressource inépuisable, gratuite, que l'on prélevait, consommait et rejetait, persuadé que le cycle de l'eau réparerait les dégâts...

Cela a conduit à une dégradation, alarmante parfois, de sa qualité.

Depuis quelques années, des traitements coûteux tentent d'y remédier sans grand succès.

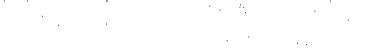
C - INTEGRER L'EAU DANS UNE APPROCHE GLOBALE DU DEVELOPPEMENT

Le monde a besoin d'une vision environnementale qui intègre la notion de développement durable et solidaire au niveau planétaire.

Cela est particulièrement urgent en ce qui concerne la gestion de la ressource en eau qui doit être abordée de manière globale, dans ses aspects qualitatifs et quantitatifs, pour le présent et pour les générations futures.

Elle ne peut bien entendu être dissociée de la question même du mode de développement et de croissance planétaire (effet de serre, progression du désert, etc...).

La conservation et la gestion de l'eau nécessite un type de développement basé sur la justice sociale et la durabilité écologique avec la participation et la coopération populaire à tous les niveaux, local, national, régional et international.



II. LA GESTION DE L'EAU DANS LE NORD DE LA FRANCE

A - DES PROBLEMES AVANT TOUT QUALITATIFS

Globalement la région Nord de la France ne connaît pas de problème quantitatif, notamment du fait d'une pluviométrie importante. 96 % de la ressource en eau dans le Nord se trouve dans le sous-sol.

Cependant, cette ressource est inégalement répartie et certains secteurs sont déficitaires du fait de la nature des sols ou de la concentration importante de la population.

Ainsi l'agglomération de Dunkerque et l'agglomération de Lille importent l'eau du département voisin pour satisfaire les besoins considérables de la population ; parallèlement, la nappe calcaire carbonifère surexploitée de la région de Lille a tendance à baisser d'un à deux mètres par an... !

Le problème essentiel résulte d'une dégradation lente mais souvent irréversible des nappes phréatiques de la région.

Les causes en sont nombreuses et multiples :

- une industrie peu soucieuse de traiter ses effluents pendant des décennies ;
- une agriculture intensive, avec une consommation excessive d'engrais et de pesticide ;
- un urbanisme galopant avec des habitations non raccordées à l'égoût ;
- un aménagement du territoire irréfléchi ne tenant pas compte du sol et du sous-sol (usine coca-cola près de Dunkerque).

A cela s'ajoute depuis quelques années, le problème difficile des eaux de ruissellement et de lessivage de routes et de parkings.

B - DES EFFORTS IMPORTANTS ONT ETE ENTREPRIS

❶ En particulier par l'Agence de Bassin

Cet outil mis en place en 1964, apporte une aide non négligeable pour inciter les industriels et les collectivités à traiter leurs rejets.

❷ **Grâce à un arsenal législatif national ou européen**

- ❒ des lois (1976 : loi pollueur-payeur) ;
- ❒ des normes européennes sur la potabilité de l'eau et la concentration des nitrates...

La directive européenne sur l'épuration des eaux usées est venue conforter cette tendance.

Mais au-delà, une prise de conscience croissante sur la nécessité de protéger cette ressource se traduit aujourd'hui par l'amorce d'un **virage dans la conception même de la gestion de l'eau.**

La loi sur l'eau du 1er janvier 1992 en particulier, doit conduire à mettre en place un système nouveau de planification de la gestion des eaux (Schémas d'Aménagement et de Gestion des Eaux - SAGE), il nécessite que l'ensemble des acteurs dans le domaine de l'eau soient associés.

C - DES ASSOCIATIONS MOBILISEES

Depuis fort longtemps les associations régionales se préoccupent de l'eau, que ce soit :

- ❒ les associations des pêcheurs qui très tôt s'inquiètent de la dégradation des cours d'eau ;
- ❒ des associations de consommateurs préoccupées de la qualité de l'eau potable ;
- ❒ des associations d'environnement qui sensibilisent sur l'impact des pollutions industrielles, de l'assèchement des zones humides, de la croissance gourmande en eau et des gâchis...

Toutes ces associations jouent un rôle important d'information, de sensibilisation et de mobilisation tant de la population que des élus, des industriels comme des agriculteurs.

De nombreuses associations participent d'ailleurs régulièrement aux colloques qui ont trait à l'ensemble de ces problèmes pour faire progresser de nouvelles exigences.

Elles y revendiquent notamment plus de **transparence** sur les informations et la possibilité de **participer** aux décisions comme aux orientations.

Elles entendent donc participer pleinement à la mise en place des Schémas d'Aménagement et de Gestion des Eaux, considérés comme un bond qualitatif en matière de protection de la ressource en eau.

Elles seront donc des partenaires exigeants mais coopératifs pour faire progresser une nouvelle conception de l'eau.

Relais indispensable sur le terrain, elles jouent un rôle de contrôle de l'application et d'évaluation des décisions au quotidien.

III. LA DEMOCRATIE GAGE D'EFFICACITE

A - LES LOIS ET REGLEMENTS NE SUFFISENT PAS

Trop souvent la démocratie est considérée comme ayant un coût (en temps ou en argent).

A l'inverse, je dirai c'est la non-démocratie qui conduit à l'inefficacité, voire au blocage d'une société.

En effet, la concertation et la participation démocratique ne sont pas seulement la meilleure façon d'éviter les conflits.

La démocratie est une condition essentielle et un gage d'efficacité pour la mise en oeuvre des décisions.

C'est dans la participation du plus grand nombre, riche de diversité, que s'élaborent les solutions les meilleures.

En effet, il ne suffit pas de sortir un texte de loi ou un règlement pour qu'ils soient appliqués, sauf à recourir à la peur du gendarme mais on sait où cela peut conduire...

D'où la nécessité d'obtenir l'adhésion de la population aux décisions et pour cela l'intérêt d'avoir des partenaires impliqués dans les choix.

B - UNE NOUVELLE RESPONSABILITE DES CITOYENS

Entre le tout-Etat et le tout-marché, les associations, le monde associatif, forment un partenaire essentiel de la démocratie.

Ni l'Etat, ni les collectivités ne peuvent exprimer seuls, l'intérêt général qu'ils sont chargés d'arbitrer et de garantir.

Et le secteur marchand exerce une pression forte sur les personnes, notamment en terme quantitatif et dans une approche de court terme.

Le secteur public et le secteur marchand ne peuvent donc répondre seuls à tous les besoins et notamment ceux difficilement quantifiables (qualité de vie - solidarité...).

A côté de la légitimité représentative issue du suffrage universel, se fraye une autre légitimité qui s'exprime par la voie associative.

Entre le faire des élus et le faire des citoyens, c'est un nouvel équilibre qui se cherche et enrichit la société.

Les associations regroupant des citoyens autour d'un projet favorisent l'innovation sociale.

Par leur extrême diversité, elles permettent à l'individu et aux groupes qui les constituent de développer librement dans la société des espaces collectifs où ils feront naître les formes toujours renouvelées de la sociabilité, des échanges, de la solidarité qui rejaillit sur la qualité de la vie sociale.

Le terrain de l'environnement en est un exemple concret ; ce sont les associations qui ont été à l'origine de la réflexion sur le développement durable et de la notion de patrimoine à transmettre aux générations futures.

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IV. LES EXPERIENCES PARTENARIALES DU NORD DE LA FRANCE

Forte d'une longue tradition associative, la région Nord comporte un grand nombre d'associations qui couvrent les terrains les plus divers :

- celui de la solidarité, de la lutte contre les exclusions sociales ou raciales ;
- celui des droits de l'Homme ;
- des loisirs, du sport, de la culture, de l'éducation ;
- celui de l'environnement dans sa plus grande diversité (protection de la faune, de la flore, des milieux, de l'Homme dans son environnement...).

Cependant, le terrain associatif est en pleine mutation.

Si l'aspect revendicatif est toujours important, si le rôle de recensement des besoins et de mise en place de services se poursuit, des voies nouvelles se cherchent.

Les innovations en cours :

- Expérience partenariale de recyclage des déchets (TRISELEC) : partenariat entre les Pouvoirs Publics, les consommateurs, les écologistes, et le monde de l'économie solidaire.
- Recherche de synergie : la MNE (Maison de la Nature et de l'Environnement) qui regroupe 60 associations.
- Expérimentations sur l'autoroute A1 bis (EDA - Entreprise - Université - Pouvoirs Publics).
- Participation à l'élaboration du Contrat de Plan entre l'Etat et la Région.
- Plan d'action pour la décontamination des sols pollués.
- Observatoire communautaire de l'environnement.
- Liaison de travail entre le Conseil Scientifique d'EDA et les laboratoires de plusieurs universités européennes.

A travers ces expériences se cherchent des exigences nouvelles :

- ❒ dépasser l'expérimentation pour proposer des réponses alternatives partenariales avec les collectivités locales et les entreprises,
- ❒ dépasser le lobbying pour être porteur d'une nouvelle éthique, de nouvelles valeurs,
- ❒ dépasser le cloisonnement pour chercher de nouvelles cohérences (ex : création d'Extra-Muros),
- ❒ dépasser le territoire pour travailler en réseau (national, voire international. Exemple : traités de Rio).

Dans un monde où la notion de "progrès" est aujourd'hui en débat, où la citoyenneté se pense en terme planétaire, où le développement et la solidarité impliquent la durabilité, les associations du Nord de la France, comme partout dans le monde, tracent de nouvelles perspectives, élargissent leur champ d'intervention (exemple : partenaires reconnus de la Conférence de Rio).

WATERCAN EAUCAN

AGENCY PROFILE

This document prepared by,

Denise Beaulieu, Executive Director, WaterCan

Ray Farrington, Deputy Chairman, WaterCan

and presented at the AWWA Convention,

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Designed & Edited by Leanna Johnston

WATERCAN EAUCAN

323 rue Chapel Street
Ottawa, Ontario
Canada K1N 7Z2

Tel./tél. (613) 230-5182
Fax (613) 237-5969

WATERCAN: ITS DEFINITION AND OBJECTIVES

WaterCan is a coalition of non-profit organizations, the primary purpose of which is to support clean water and sanitation projects in the developing world.

Our secondary purpose is to raise the awareness of Canadians of the need for clean water and sanitation throughout the world. The needs of the lesser developed countries are well documented and serve as the motivational force for WaterCan's activities.

- ***1.2 billion people in the world have no access to a clean water supply.***
- ***1.7 billion people have no access to sanitation facilities.***
- ***In areas where there is no clean water supply or communal system (taps\hand-pumps), women have to walk several kilometres to reach water, often making second trips. This water is more often than not contaminated.***
- ***Infant mortality rates of children under 5 range between 100-300 per 1000 in the lesser developed countries vs. 9 in developed countries like Canada.***
- ***It is estimated that 30,000 children die every day in the Third World from diseases associated with dirty water.***

Sources:

Global Consultation in Safe Water & Sanitation in the 90's, Background Paper. New Delhi, India, Sept. 10-14, 1990.

Cairncross, Sandy. "Health Aspects of Water & Sanitation". Waterlines. Vol.7, no.1, 1988.

THE EARLY STAGES

The idea for WaterCan was conceived in the fall of 1985 when 79 year-old Michael Lubbock was researching a brief for the special joint committee of Parliament on Canada's international relations. Mr. Lubbock was quite surprised to learn that less than 10% of Canada's overseas development funds at that time were being targeted to health, including water and sanitation initiatives.

With the assistance of friends and volunteers from various agencies, Michael Lubbock set out to create WaterCan. Inspired by a program developed in England by Wateraid, WaterCan initiated a Canadian version of their approach.

A strong committee was created that consisted of Mr. Lubbock and representatives from 5 voluntary agencies. These agencies provided the financial support needed to cover start-up expenses. By the end of 1987, events had unfolded rather quickly; the first grant had been received from CIDA, and the first city (Dartmouth, Nova Scotia) had joined the program.

The subsequent years witnessed the progressive growth of municipal support activity, which to date has reached 62 participating cities. As well, a funding agreement with CIDA has been established, and 15 non-governmental organizations have been recruited to participate in the coalition.

Our founder, Michael Lubbock, passed away in 1989, but his ideal remains and is being carried out by a volunteer board and a small staff.

WATERCAN IN THE NINETIES

WaterCan functions as a clean water coalition whose membership consists of 15 Canadian non-profit organizations involved in international development, and which have as part of their portfolio a significant portion of their activities in water supply and sanitation. Affiliated agencies participate in the management of the organization by contributing a membership fee, and participating actively on the Board (they occupy 6 seats out of 16) and on the various working committees. In return, they receive preferential access to funds, free advisory services, training through workshops, and information materials on water-related issues. The original idea of providing funds to recognized Canadian agencies has proven to be a good one. The rising costs of implementing overseas infrastructures, and the economies of scale realized by funding agencies with existing overseas programmes have confirmed this approach.

The main thrust of the municipal programme is the insertion of a leaflet in the water bills; 62 Canadian municipalities have so far participated. The contributions raised in each city are linked with a specific project, and progress of the projects is reported regularly to city councils and citizens. Each year nearly 500,000 leaflets are distributed to Canadians via their water bills. In addition, CIDA provides funds for projects on a matched basis with the funds raised from private sources. **Table 1** reflects the increase in the funds disbursed by WaterCan over the last 5 years.

WaterCan's work is accomplished by three full time staff, who are supported by the Board and several volunteers; this generates very low overhead costs and ensures that the most money possible goes to clean water projects. WaterCan has its headquarters in Ottawa. Table 2 outlines the WaterCan organization and process.

PROJECT SELECTION CRITERIA AND PROCESS

WaterCan provides funds for projects that aim at helping Third World communities access clean water. Sustainability is crucial to these projects and, to achieve it, several conditions must be satisfied. Our criteria specifies that the community must be involved at all stages of the implementation process, especially the women who are traditionally responsible for fetching water for their families. In addition, the chosen technology must be low cost and must respect the ability of the community to operate and maintain the systems once completed. WaterCan also requires that all clean water projects integrate a health education and sanitation component of some kind.

All projects submitted for funding are reviewed thoroughly by a volunteer Selection Committee made of highly qualified professionals involved in the sector. All the projects are examined in detail, as well as in their global context, to determine the overall quality of the proposed initiatives. Improvements to projects are suggested if necessary.

In the case of a rejection, the organization involved will always receive reasons for WaterCan's decision, as well as support in improving the project in order to apply to other organizations for funding.

Table 1

EVOLUTION OF WATERCAN FUNDING TO AFFILIATED ORGANIZATIONS SINCE 1987

- *1987 was the year WaterCan officially funded its first project.*

WaterCan Portfolio

Funds disbursed (including CIDA contribution) by year to affiliated organizations towards the implementation of water projects

1987\1988: $ 70,219

1988\1989: $ 80,804

1989\1990: $197,778

1990\1991: $232,044

1991\1992: $296,076

WaterCan Project Stats

Number of projects funded to date: **42**

Number of countries: **approx. 30**

Technology: **handpumps, wells, gravity fed systems, spring capping**

Population affected by each project: **anywhere from 200 to 30,000**

WaterCan Project Assistance Criteria

Projects should:

- ***Include low-cost, simple technology***
- ***Emphasize "self help" and local participation***
- ***Benefit and involve women***
- ***Include a sanitation and hygiene education component***
- ***Not be detrimental to the local environment***
- ***Be designed for long term sustainability (ex. training for operation and maintenance)***

ADVICE AND TRAINING

WaterCan is involved in more than just funding. We serve as a link between our member agencies and the international networks. Denise Beaulieu, the Executive Director of WaterCan, is on the Advisory Committee of the International Secretariat for Water (ISW) to meet that end. We also provide training and technical advice.

There is abundant knowledge available on various field approaches, and a wide range of researchers are actively working towards gaining a better understanding of the various components involved in water supply and sanitation. What is currently lacking is a way to access this information; this is particularly true for the non-profit organizations that are of a modest scale. A recent survey has demonstrated that our affiliated organizations need to have access to these resources.

This is why WaterCan has created its training and advice services. We are offering **selected training activities** annually to our affiliated organizations. Our first workshop was held in March, 1991 on issues related to water supply and sanitation in general. The participants (programme officers with affiliated agencies) were guided by a wide range of experts to review the major components of an integrated water supply and sanitation project. The main objective was to work together on the various ways of integrating the human and technical components during project implementation in order to generate sustainable initiatives.

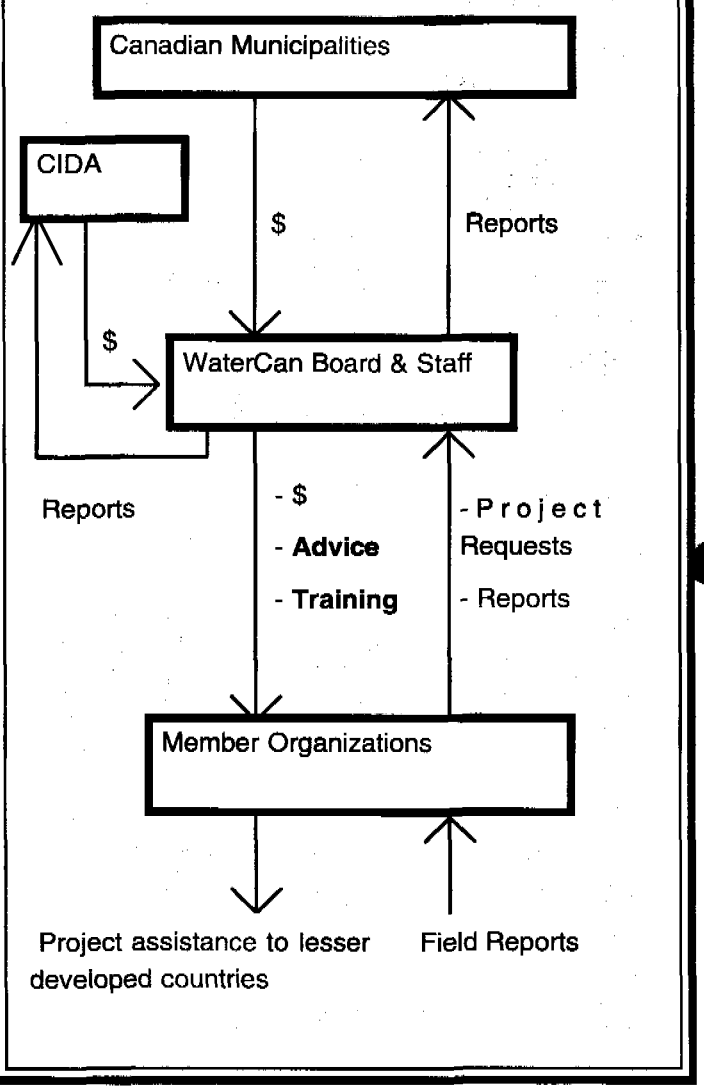
Future workshops on topics such as women's participation and monitoring and evaluation will be held. Given the success of the first one, future initiatives will be open to non-affiliated agencies.

The **technical advisory service** is open to our member agencies to provide them with the necessary information on technical and programming issues. The objective is to offer them not only access to our in-house resources, but the means to access a wider network of information. Topics pertaining to water supply and sanitation are fairly broad and it would be "Mission Impossible" to cover them all in-house with a sufficient level of competency. Although there are a variety of services offered by several institutions, there is a lack of knowledge of their existence among the NGO community.

Exclusively reserved for our affiliated organizations, the technical advisory service will offer short term consulting services to the NGOs on any particular topic related to water supply and sanitation projects. Depending on the need expressed, it could be provided in the form of technical expertise, resource materials, or an overall opinion on the feasibility of a specific small scale project. These services have been provided in the past on an informal basis, and we are currently creating a more formal system.

Table 2

ORGANIZATION AND PROCESS



A WATERCAN PROJECT

- **CHITUKULA, MALAWI (CPAR)**

In 1990, Canadian Physicians for Aid and Relief (CPAR) contacted WaterCan to request support for the water component of their primary health care initiative, to be implemented in Malawi over the next 3 years.

Their objective is to build 31 hand dug wells and to install Mark V pumps in 31 villages of the Chitukula area, just on the outskirts of Lilongwe. The other components of the strategy, namely health education, construction of sanitation facilities, and training of well care takers, are to be implemented simultaneously.

The project was accepted for funding because its approach emphasized community participation, training, and health education, and because CPAR demonstrated a sound knowledge of the communities.

Prior to designing the project, a needs assessment was conducted. Infant mortality rates were quite high, and lack of access to medical attention further reinforced the need for preventing water-related diseases. It was found that access to water was the number one problem faced by the villagers of the Chitukula area, and that they were ready to work actively to create a water system for themselves.

Denise Beaulieu, the Executive Director of WaterCan, visited the project in March of 1992. She reported that the project is progressing according to plan. Her visit included meeting with project staff, village volunteers and government representatives. She also attended training activities along with the volunteers selected in the participating villages.

What is so outstanding about these small scale projects is the close contact the NGO workers have with the communities; working side by side with village development committees has provided CPAR an opportunity to acquire a sound knowledge of the communities, the key to any true partnership.

Selected Projects

In the Dominican Republic, the community of La Bayona took part in the construction of its own aqueduct system, which provides clean water to some 40 families who would otherwise have to walk many kilometres to fetch water. WaterCan's contribution of funds helped to defray the cost of materials.

(* Hope International)

In Bolivia, in the region of Cochabamba, seven villages will be participating in the construction of gravity water supply systems. Cedeagro, a Bolivian organization, is actively involved in the activities of the community and will ensure that the citizens take charge of the installation.

(* Oxfam Canada)

CHALLENGES FOR THE FUTURE

The challenges that will be faced by WaterCan over the next decade hold the promise for an exciting future.

We will continue to build on the enthusiastic response of Canadians who, via their water bills, know and support us. At the same time we will reach out to new groups; we have the potential to access 5,000 municipalities. The need is stronger than ever to educate the people of the Northern hemisphere about environmental issues, especially the fact that water is a precious resource that is being consumed faster than it can be replaced, and that the costs for treating it are dramatically increasing every year. The response from the municipal sector is encouraging; already several city councils have expressed gratifying results from participating in the water bill insertion programme. Citizens are more understanding in reducing their water use if they know that their average daily consumption is 100 times higher than that of an African citizen.

Over the years to come Canadians will realize that our future is inevitably linked to the South's. WaterCan must be there to offer support to citizens who feel a need to make this planet a better place to live and to promote a better use of our own resources.

At the same time, we will fill our mandate of disseminating information to member agencies, and supporting them in their evolving role. To date, more than 40 NGO's have received funding from CIDA towards the implementation of water supply and sanitation projects. We have the potential to grow with all of these organizations.

This decade will see many important changes in terms of approaches to development. Many developing countries have a much higher level of expertise than before, and there is increasing recognition of the need to promote local practices at field level. The end of the International Decade for Drinking Water and Sanitation has highlighted the need for a better integration of technical and human factors if we are to achieve sustainability.

NGO's have expertise about community participation that will lead large funding agencies to borrow elements of their programmes. As the relationship between the various players in the development field changes and evolves towards a different kind of partnership, there will be a need for the non-governmental organizations to adjust their input to better suit those new realities.

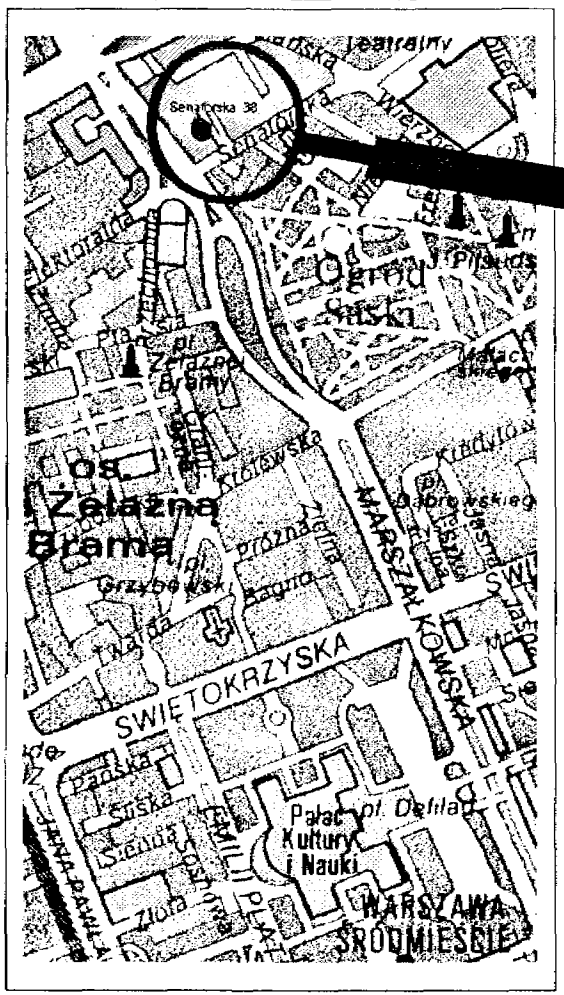
WaterCan stands in a privileged position; we are able to see the development of our 15 member agencies and act as a link between them and other players in the field of water supply and sanitation. But we will not stand solely as a passive observer; we will continue to pursue our mandate of providing access to clean water, and apply our knowledge to actively promote initiatives that will be in the best interest of the communities involved.

CEFFIC

00-095 Warszawa ulica Senatorska 38

Téléphone en Pologne : (22) 26-62-71
Télécopie en Pologne: (2) 635-90-56

Téléphone depuis la France: (19 48) 39-12-04-20
Télécopie depuis la France: (19 48) 39-12-04-00



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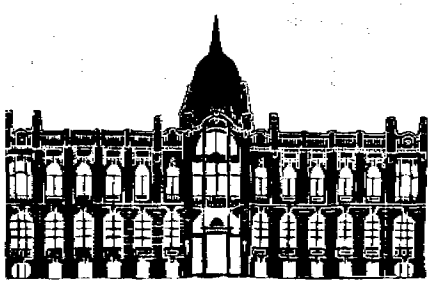

CEFFIC: WHY?

Poland was the first country in Central and Eastern Europe to break with the totalitarian system.

France, which had chosen to freeze all relations with Poland during the totalitarian period, made a commitent to assist with the political and economic transition: to support the establishment of a Legal State and to modernise the Economy.

Priority was given to **training people** who would be the players in the transition process.
The French Ministry of Foreign Affairs, in agreement and with the assitance of the Polish Government created **LE CENTRE FRANCAIS DE FORMATION ET D'INFORMATION DES CADRES** (the French Center for Training and Informing Managers).

Le **CEFFIC** opened in October 1990 in a prestigious building, classified as an historic monument, in the center of Warsaw.

CEFFIC is the first institution of this type to be created by the **French Ministry of Foreign Affairs.** It is a privileged partner for the **French Embassy** for implementation of training programmes identified and supported by the **Fondation France-Pologne**.

CEFFIC, CENTER OF SCHOOLING

CEFFIC has 1500 square meters of building, renovated and equipped to receive trainees: classrooms, Documentation Center, Computer Workshop with personal computers, Conference Hall (with facilites for simultaneous translation) and Computer Centre with Data Base.
CEFFIC provides a facility for professionals in the adult training field can accomplish their projects at the most reasonable costs possible.

The French Institute Management (IFG), the National School of Insurance (ENAss), the Banking Profession Center for Training (CFPB) are CEFFIC's principal partners. Professional organisations, advisers to major companies, public administrators, and local authorities have all chosen the CEFFIC for their activities in Poland.

All participants have one point in common: with the assistance of French public and sometimes multilateral funds, they are making an active contribution to **management training for administrations and businesses in the context of the transition to a market economy.**

At the end of the second semester of 1992, **3,000 trainees** had *participated in courses organised in collaboration with the CEFFIC.*

CEFFIC, A FACILITY FOR COOPERATION

Training courses that take place at the CEFFIC are for professionals. The courses are intensive. The sessions of short length. Introductory and specialised training courses create new demands for information and advice.

CEFFIC benefits from the support of skilled and specialised partners for its services to administrations and business:
CFPI of ACTIM (for assistance to small and medium-sized business,
F.I.G. International (advisory services),
A.G.I.R. for advisory services to local authorities,
SOPEXA for the agri-food industry,
C.C.I. of Lille-Roubaix-Tourcoing.

CEFFIC is a meeting place, offering its guests the pleasure and services of the French bookstore, "MARJANNA" and the "CAFE de PARIS".

COMMUNITY MANAGEMENT OF WATER SUPPLY AND ENVIRONMENTAL SANITATION SERVICES

PREPARED BY:

S.M.A. Rashid
Director

NGO FORUM
FOR DRINKING WATER SUPPLY AND SANITATION

4/6 BLOCK-E, LALMATIA, DHAKA, BANGLADESH

COMMUNITY MANAGEMENT OF WATER SUPPLY AND ENVIRONMENTAL SANITATION SERVICES

S.M.A. Rashid
Director
NGO Forum for DWSS

INTRODUCTION:

NGO Forum for Drinking Water Supply and Sanitation (DWSS) is a nationwide networking organization of 350 local NGOs engaged in safe water and environmental sanitation activities in Bangladesh. Its prime objective is to promote the complementary role of NGO Sector for water and sanitation. To this end, the Forum plans and formulates projects on WSS; seeks funds for it from foreign government; implements, monitors, and finally evaluates these WATSAN programmes through its member NGOs operating at the grassroots. The Forum provides a wide range of support services to the partner NGOs when implementing the projects.

This paper will attempt to describe the programmatic interventions in the context of Community Management of Water Supply and Environmental Sanitation through the NGOs working with the grassroot groups.

DEFINITION OF COMMUNITY MANAGEMENT:

Community management is a process by which communities become fully involved in WSS project development as well as operation and maintenance (O&M) of the system of services installed. Communities can be defined as social groups having common interests which bind them together. This could include entire rural villages, as well as discrete neighborhoods in urban areas. Thus, the people themselves define the limits of their community rather than some geographical or population criterion.

There are four essential factors defining community management: (i) responsibility for some action; (ii) decision making on the action; (iii) control and influence over the implementation of the action; and (iv) capability to carry out the action. All four of these factors must exist, to some degree, for the process of community management to occur. Depending on the degree of the factor present, community management may be minimal or extensive. In addition, community management of WSS services may occur in both rural and urban environments, although it tends to be more effective in situations where external resources are greatly limited and local initiative and support are essential for project development and sustainability.

WHY COMMUNITY MANAGEMENT?

There is increasing evidence that in a tight fiscal environment, a community management approach which builds local capacity at the individual and institutional level is far more effective than the old approach which involves central government provision of all services.

Community management strategy which will vary in form from region to region and from rural to periurban and urban slums is a means of attaining sustainability. Community involvement in decision making ranges from identifying the need for improved water and sanitation to paying in some form for the facilities. It increases responsibility and control over implementation and eventually over O&M of facilities.

Experience in management functions results in emergence of new leadership, acquisition of new technical and organization skills in communities. This in turn increases the potential of communities to participate in and improve their overall development environment.

PROCESSES AND METHODS:

The following pertains to individual projects:

The original idea for a project or development activity should come from within the community, based on the people's own assessment of their needs. For this, strength of leadership within the community is important. The role of the external agency (whether government or donor) is not to direct but to support the community by providing opportunities for the community to develop its management skills, knowledge and attitudes. The primary support is for the community itself and not just for a particular project. The aim is to empower the community to control its own development. After the community has identified a particular project, the external agency helps it to develop its internal organization and hence its capacity to carry out the project effectively. As the project proceeds, the agency continues to provide training, support and supervision.

The following pertains to large programmes encompassing many projects:

Because the individual projects originate from the communities concerned, the external agency cannot fix the project locations and methodologies in advance. It must adopt its own planning and budgeting system to accommodate the individual projects as they arise: for example, by specifying only the general parameters with which individual projects to be supported should conform. In addition the external agency acknowledges that the process of building up the communities capacity and self-confidence takes time: the programme plan takes this into account and allows for pre-implementation inputs.

This flexible approach to a decentralized process of planning and implementing programmes may enable the external agencies to support larger number of community-managed projects without losing the advantages of the community management approach.

COMMUNITY PARTICIPATION:

The ultimate beneficiaries of water supply and sanitation improvements are the communities where systems are constructed. For many years, this fact defined the role of the community in the development process: the community was a passive beneficiary to which a new system was given, and it was then upto the community to use it, operate it, and maintain it as best it could. With hindsight, it is not at all surprising that this conception of the community role led to many abandoned systems and wasted resources. Experience over the past ten years has resulted in a very different lesson about the proper role of the community:

Lesson: **The community role is to own and manage the facilities constructed and to be actively involved in decision-making in all phases of project development.**

Although in many cases the community will be the legal owner of new systems, ownership in this context is more of a psychological concept than a legal one. (Many governments consider water systems public property, like roads, which the community must manage). If the community is to feel that it truly owns the system, it must be fully involved in planning, designing, constructing and operating and maintaining it. It is not acceptable to define community involvement as keeping the local people informed, or seeking their ratification of decisions already made elsewhere, or letting them build parts of the system. True involvement means decision-making and hands-on management; anything less will not be satisfactory in terms of long-term sustainability.

Bringing about this level of community involvement requires a great deal of work. Special steps should be taken to ensure that all segments of the community, especially women, are active participants. Community participation has substantial costs associated with it, not the least of which is training. However, the benefits of community involvement are great and extend beyond the project for which it was initially sought.

Full Community Involvement:

It is important that all elements of the community, not just the elites and the formal leaders, participate actively in the development process. NGO Forum's experience indicates that the wealthy members of a community and those accustomed to leadership roles will participate eagerly given the opportunity, while the poor, ethnic minorities, and those not accustomed to leadership roles (such as women) require special encouragement and probably special training in participation.

In general, it is best to build on whatever community management structure already exists rather than attempt to create a new one.

Despite the fact that women are the primary users of water supply and sanitation project facilities, and often provide most of the construction labor for them as well, they are frequently not sufficiently involved in project development. A recent review done by the NGO Forum in Bangladesh found that women were viewed as passive beneficiaries of improvements in infrastructure rather than active participants in project planning and utilization.

The involvement of women in project planning and implementation is essential both to sustainability and to long-term health benefits. Effective participation of women in projects occurs, first, through a recognition of their roles in the community and, second, through special efforts to include them in the project development process.

COSTS OF COMMUNITY PARTICIPATION:

Community participation involves costs to both the community and the implementing agency. Since most of the community's costs are in-kind (labor, materials, participation time), they do not involve cash transfers. The implementing agency, however, will incur direct, cash outlays for salaries and expenses of personnel to assist in community organization, training, supervision, and back-up technical support. These costs generally are greatest during the mobilization phase and drop off rapidly as implementation progresses.

As the project proceeds, the community will almost certainly need ongoing training in a variety of areas to permit them to make wise decisions about their system and its use. Some members may need training in participation or literacy. Management training for the water committee may be necessary alongwith training in how to be trainers so that they can transfer information to the rest of the community. Some technical knowledge will need to be engendered to permit the community to make informed decisions. Administrative skills such as book-keeping may need to be developed if they are not already available in the community. The system operator will need training in how to operate and maintain the facilities. All of these training needs should be identified at the project planning stage and arrangements made to meet them.

BENEFITS OF COMMUNITY PARTICIPATION:

The community participation process used in developing water supply and sanitation projects has potential benefits extending far beyond those projects. The skills that are transferred, the capability that is developed, and the confidence that results from managing community affairs combine to increase the community's ability to take on other projects and other issues that affect its well-being. In some cases, communities have gone on to organize agriculture projects, for example, using many of the same techniques.

Greater community independence, self-reliance, and responsibility are needed in all development programmes in the Third World, not just in the water supply and sanitation sector. It appears, however, that because water supply facilities are often felt needs of the community to begin with, and because projects in this area provide an immediately useful benefit, it may be the most appropriate starting point for community organization.

WSS projects using a community management approach have many components, and hence it is important to establish clear differences between means and ends. In fact, community management is not an endpoint in itself but is a means to obtain sustainable and effective use of facilities. Stating the achievement of sustainable and effective use as the objective provides an alternative to stating objectives primarily in terms of numerical targets, or number of WSS facilities built.

When a community management approach is used to attain sustainable and effective use, the benefits go beyond health to include positive social, institutional, economic and environmental changes that can have far-reaching repercussions. This includes spontaneous replications of efforts and undertaking of other development initiatives - building of roads, schools, health clinics and micro-enterprise development. Eventually, these may reduce the pull towards the cities.

The benefits include: (i) social: emergence of new leadership, especially of women and increased confidence, pride, trust among community people; (ii) economic: time savings for women, savings for government and initiation of new income-producing activities; (iii) Organizational/institutional: stronger community groups capable of other development initiatives including taking control of development efforts; and (iv) environmental: better water resource management, environmental conservation and improved environmental sanitation.

Lesson: Field experience strongly suggests that active community participation in water supply and sanitation projects has a positive impact on other activities introduced to the community.

RECOMMENDATIONS:

The following recommendations are addressed to national governments and ESAs involved in the provision of WSS services:

i) The acceptance of community management processes should be promoted among governments, ESAs and NGOs through the communication of project experiences and the development of practical field instruments.

ii) The role of governments and ESAs should change from providers of services to promoters of community management through increased access to information to enable communities to make informed choices.

iii) Community management should be promoted within communities through leadership development and training programmes.

iv) The private sector (such as credit organizations, equipment suppliers, etc.) and professional organizations should be encouraged to become partners in the community management process.

v) Development agencies, local governments and ESAs, should be staffed with professionals experienced in and qualified for community management approaches.

vi) The programmatic approach should be used for project preparation and implementation in order to provide flexibility and opportunity for community management approaches to be used.

vii) Joint community-government approaches to project development should be formulated for larger schemes.

viii Field instruments, such as promotional campaigns, planning methods, training programmes, etc., should be developed for upscaling of community management processes from small projects to large schemes.

ix) Local leaders should be identified and trained for community WSS projects.

x) NGOs should be involved more extensively in the provision of WSS services in order to promote community management approaches.

xi) More funds, time and human resources should be provided for the promotion of community management processes in the project preparation phase.

xii) General community management processes should be the key aspect of project design during the early phases of project preparation.

UMWELT FÜR EUROPA
ENVIRONMENT FOR EUROPE
UN ENVIRONNEMENT POUR L'EUROPE
UN AMBIENTE PER L'EUROPA
ОКРУЖАЮЩАЯ СРЕДА ДЛЯ ЕВРОПЫ
LUZERN, 28.-30. APRIL 1993

April 30th, 1993

D e c l a r a t i o n

by the Ministers of the Environment of the region of the United Nations Economic Commission for Europe (UN/ECE) and the Member of the Commission of the European Communities responsible for the Environment

THE POLITICAL DIMENSION OF THE PROCESS "ENVIRONMENT FOR EUROPE"

1. We are determined to **intensify our cooperation** in the field of environmental protection in Europe, to **assume our responsibility on the global level** and to offer our **partnership to the other regions of the world.** We will work to ensure that actions within one country do not have adverse environmental effects in others. We will endeavour to mitigate above all those environmental problems which affect human health.

2. We will work together **more** closely at regional, subregional and bilateral levels to **preserve our natural heritage** and to prevent the degradation of our common environment. We are determined to **preserve ecological and cultural diversity,** to save threatened species, and to **rehabilitate depleted areas and ecosystems** in our region.

3. Our cooperation towards **convergence of environmental quality and policies in Europe,** represents a strong integrating force and provides one of the corner stones for the construction of the new Europe. In pursuing this cooperation, and aiming at **peace, stability and sustainable development,** we are acting on the basis of the decisions and recommendations of the Conference on Security and Cooperation in Europe (CSCE) and the United Nations Conference on Environment and Development (UNCED) processes; we supplement and enhance the cooperative efforts within existing international fora and environment conventions; and we involve in this cooperation all levels of government and the informal sectors.

PREPARATIONS FOR THE LUZERN CONFERENCE

4. The ministerial conference "Environment for Europe" at **Dobris Castle** in June 1991, which built upon the 1990 conferences of **Bergen** and **Dublin**, called for an **Environmental Action Programme for Central and Eastern Europe**, a **Report on the State of the Environment in Europe** to be completed before the end of 1993, and a longer-term **Environmental Programme for Europe.**

5. Preparatory work has been undertaken on all these issues in a comprehensive and coordinated preparatory process by governments, the Commission of the European Communities, international organisations and financial institutions, and informal sectors. Our conclusions on the specific items are as follows:

ENVIRONMENTAL ACTION PROGRAMME FOR CENTRAL AND EASTERN EUROPE

6. We **endorse** the broad strategy, with its principles and general priorities, contained in the **Environmental Action Programme for Central and Eastern Europe (EAP)** as a basis for action by national and local governments, the Commission of the European Communities and by international organisations and financial institutions and private investors active in the region.

7. The EAP represents a consensus on a broad approach **based on three main pillars:**

- the **integration of environmental considerations** into the process of economic reconstruction to **ensure sustainable development;**

- **institutional capacity building,** including an efficient legal and administrative framework as well as managing capacity, training and education;

- **immediate assistance programmes** comprising actions, which bring immediate or short term relief to regions where human health or natural ecosystems are severely jeopardized by environmental hazards, taking into account also transboundary environmental problems. The EAP also offers illustrative **investment projects for priority areas.**

8. **Economic transformation in Central and Eastern Europe** should have a **positive impact on many aspects of environmental quality.** However, there will still be areas where pollution affects human health, where ecosystems are at risk of suffering irreversible changes, or where the economic costs of environmental damage are very high.

The **EAP** outlines how these priority problems may be addressed in a **cost-effective** manner, drawing on the

experience of past and current programmes and offering proposals for **reinforcing or reorienting ongoing programmes** and improving their coordination. It emphasizes the need for **international cooperation through various forms**, including **investments** and **joint ventures**, for the facilitation of the **transfer of environmentally sound technologies**, and for the **move towards applying international standards**, bearing in mind economic and financial problems as a result of the transition to a market economy.

9. We firmly **support** the implementation of the **broad strategy** contained in the EAP in a spirit of partnership.

9.1. **Governments of Central and Eastern Europe** will undertake **essential policy and institutional reform** as well as, in accordance with their priorities and capabilities, providing resources for actions and priority investments, while **Western governments, the Commission of the European Communities and international organisations and financial institutions** will continue and **intensify their support** for the reforms and for specific priority projects and programmes.

9.2. **This partnership** should include cooperation between **different levels of government, local authorities, local financial institutions, private industry, and the indispensable participation of the informal sectors**. We will therefore encourage and promote **active participation by the informal sectors**, including the **major groups mentioned in Agenda 21**, through, to begin with, regular dissemination and discussion of information relating to the implementation process.

9.3. We note the adoption of **Guiding Principles on the Environment, Industry and Investment Decisions in Central and Eastern Europe** at the Budapest Conference of November 1991.

9.4. We call for the strict application of **environmentally sound standards and requirements** in all assistance to Central and Eastern Europe by governments and international organisations and financial institutions.

10. We **firmly endorse** the establishment of an effective process **to implement the EAP and monitor and review the implementation** by taking the following steps:

10.1. We are committed to **expanding investments and promoting project oriented action** to improve the environmental situation in Central and Eastern Europe. We plan to pursue this goal through strengthening the relationship between donors, international financial institutions, and Central and Eastern European countries.

By launching an immediate action programme we are therefore establishing a **framework to facilitate the project preparation and investment process. Its objectives** will be **to strengthen the linkage between donors, international financial institutions and Central and Eastern European countries,** and facilitate the mobilisation of resources for the region, for the purpose of investment and helping channel new and existing resources into the region.

We call for the establishment and/or **strengthening of national and local bodies,** for the identification, preparation and implementation of investment projects, as appropriate. We welcome the establishment of a Project Preparation Committee (PPC) composed of significant donors contributing to the project preparation framework, and the international financial institutions, with the full participation of the Central and Eastern European countries, as appropriate. The PPC will disseminate regular information on its activities to the UN/ECE member states.

A small staff, **using existing resources,** will be made available to support the work of the PPC for a period, after which time the PPC will determine its future needs for staff support.

The PPC will help to provide **feasibility studies** leading to concrete investment projects; it will **identify possible sources** of financing for small projects as well as large capital intensive projects, including private sector projects. The PPC will take into account efforts within **the wider context of EAP-implementation to develop the capacity in Central and Eastern European countries to elaborate project proposals.**

We **welcome** the initiative by individual countries and the European Communities to participate in this process by **setting aside specific funds** for this purpose and the preparedness of **international financial institutions actively to support this process.**

10.2. **Existing information systems on resource flows** will be **streamlined** in order to provide an improved data base covering all the countries in transition covered by the EAP. The UN/ECE, the OECD and the Commission of the European Communities in cooperation with UNEP, UNIDO, the World Bank and EBRD will make **coordinated proposals to the follow-up process by the end of the year.**
Special efforts will be made to **disseminate information** on resource flows **within recipient countries through local information units and publications.** Western assistance would be particularly useful in this regard, given the lack of experience with such approaches in Central and Eastern Europe.

10.3. **Mechanisms for coordinating assistance** to countries in transition covered by the EAP will be strengthened on the

basis of proposals from the preparatory process, including those contained in paragraph 10.1.

10.4. All the partners concerned undertake to review the implementation of the EAP as appropriate, inter alia through environmental performance reviews, and they will maintain the EAP as an evolving document to be developed in the light of experience, and to be adapted to reflect the specific circumstances of individual countries.

11. Transboundary pollution causes increasing damage to ecosystems, forests, soils, watercourses, lakes and man-made structures. We call for actions and programmes under the EAP which address both local and transboundary problems comprehensively; including appropriate and timely investments and taking due account of relevant international conventions. The potential for realizing synergy effects in combatting local and transboundary problems should be fully used. Further, we call for completion of the second sulphur protocol under the Convention on Long-Range Transboundary Air Pollution.

BIODIVERSITY CONSERVATION

12. We welcome the initiative for a European Year of Nature Conservation in 1995, and we endorse the report by the Council of Europe on "Nature Conservation in Europe. An Overall Strategy on a Continental Scale: Some Important Aspects" as an important basis for discussion.

13. The Council of Europe, in cooperation with the IUCN, UNEP the EC Commission and interested governments and organisations, will pursue activities related to protected areas, promoting the development of methods for the sustainable use of natural resources, model legislation and pilot projects to promote sustainable tourism, including education and training.

14. We call, within the context of the EAP, for more detailed analysis and proposals for the conservation and the sustainable use of biological and landscape diversity, especially in the form of site based model projects and institutional strengthening, leading to practical action on the ground.

REPORT ON THE STATE OF THE ENVIRONMENT IN EUROPE

15. We endorse the progress report on the European State of the Environment Report. This Report will become available to governments at the end of 1993 and will preparation of the serve as the basis for the further development of the Environmental Programme for Europe (EPE). It will be considered at our next Ministerial Conference.

ENVIRONMENTAL PROGRAMME FOR EUROPE

16. We endorse the report by the Senior Advisers to ECE Governments on Environmental and Water Problems (SAEWP) on **"Elements for a Long-Term Environmental Programme for Europe (EPE)".**

17. We call for the development, in so far as appropriate, of the **European Environment Agency** into a European instrument for coordinated data collection and analysis, as soon as possible after it has formally been established by the European Communities.

18. While we reaffirm our commitment to the Polluter Pays Principle, as contained in **Principle 16 of the Rio Declaration**, we acknowledge that the special situations of the CEE countries during their transition to market economies must be taken into account in the application of this principle. We call for more intensive efforts to develop and use **innovative policy instruments for environmental management**, including the prevention of man-made environmental disasters. Specifically:

18.1. We call for **further exploration by the OECD**, in cooperation with the UN/ECE, of ways and means to facilitate a **wider use of economic and fiscal instruments in the UN/ECE region** and for elaboration of **concrete recommendations** on how to achieve this.

18.2. We call for appropriate consideration of **burden sharing** to assist countries in executing projects under the Environmental Action Programme and in achieving objectives under the protocols to the Convention on Long-Range Transboundary Air Pollution, and within the flow of financial resources to Central and Eastern European countries. In the context of the **sulphur protocol** under development, we **encourage the Executive Body of the Convention to examine,** if appropriate, the possible **application of new instruments aimed at facilitating the mobilisation of resources.** Interested governments will **pursue consultations** on this issue with relevant institutions, as appropriate.

18.3. We **welcome the emerging consensus** on the importance of coordinating the **use of economic and fiscal instruments,** including those aimed at **reducing CO_2 emissions,** with a view to ensuring an efficient **effort.** We appreciate the steps already taken in this respect and we **call for decisions,** as soon as possible, on such measures in the European Community and its member states and all the other industrialized countries, taking into account the particular conditions and policies in individual countries. The European delegations urged timely decisions to introduce as soon as possible **taxation** that leads to an

effective limitation in CO_2 emissions and to an **improvement in the efficient use of energy.**

19. In view of continuing grave concerns about **unsafe nuclear installations**, almost seven years to the day after the Chernobyl accident, we strongly support the **G-7 multilateral programme of action**, and other international and national programmes, on operational safety, technical improvements to plants based on safety assessments, and strengthening regulatory regimes. **Additional support by other OECD countries to the G-7 programme is required and will be welcome.** This should be accompanied, through enhanced international cooperation, by **phasing out as soon as possible unsafe nuclear installations**, in particular unsafe nuclear reactors, **promoting more efficient use of energy, developing new and renewable sources of energy** and enhancing prompt and effective responses to environmental emergencies in this context.[1]

20. **We call for early completion of the negotiations of the European Energy Charter Treaty** and the related **protocols** on energy efficiency and environmental aspects of energy systems.

21. The UN/ECE **will expand the scope of its Energy Efficiency 2000 campaign**, resources permitting, to emphazise the role of energy efficiency measures and renewable energy sources for the reduction of greenhouse gas and acidifying substance emissions; and to identify opportunities for developing energy efficiency standards and labelling.

22. We call for **intensified cooperative efforts** to strengthen **tools and mechanisms of monitoring, compliance and enforcement of environmental law and policy.** In particular:

22.1. The OECD **Country Environmental Performance Review Programme** will be developed and gradually extended, in cooperation with the UN/ECE, to Central and Eastern Europe, initially through three pilot reviews of Poland, Bulgaria and Belarus.

22.2. We **call for the** elaboration of proposals by the UN/ECE for legal, regulatory and administrative mechanisms to encourage **public participation** in environmental decision making, and for cost-efficient measures to promote public participation and to provide, in cooperation with the informal sectors, training and education in order to increase the ability of the public to understand the relevance of environmental information.

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[1] Austria, Iceland, Ireland, Luxemburg, Norway and Sweden would have preferred to include in this paragraph the following sentence:

"The use of nuclear energy in general should be phased out in the long term."

22.3. We call for the development by the OECD in cooperation with the UN/ECE, UNEP and other relevant international organisations taking forward the activities already undertaken in this field, of an **integrated approach to pollution prevention and control.**

23. We **endorse** the report on **International Legal Instruments** of 2nd April 1993, which calls for effective monitoring as well as improvement of the implementation of and compliance with, international legal instruments in the field of the environment.

23.1. We **urge Contracting Parties** to environmental conventions in the UN/ECE region, where appropriate, to cooperate within the respective governing bodies of those Conventions to **work towards non-compliance regimes** which:

- aim to avoid complexity;
- are non-confrontational;
- are transparent;
- leave the competence for the taking of decisions to be determined by the Contracting Parties;
- leave the Contracting Parties to each convention to consider what technical and financial assistance may be required, within the context of the specific agreement;
- include a transparent and revealing reporting system and procedures, as agreed to by the Parties.

23.2 We **urge the Contracting Parties** to environmental Conventions in the UN/ECE region to cooperate within the respective governing bodies in **taking appropriate steps** to:

- improve knowledge of the objectives and obligations of environmental Conventions in the UN/ECE region;
- assist governments in building the necessary administrative and legal structures, including enforcement and implementation mechanisms, inter alia by initiating or pursuing the elaboration of guidelines, assisting where requested with the drafting of legislation, and by providing for the exchange of legal and technical experts;
- facilitate regular participation in meetings by representatives of countries in transition;
- supply all relevant information with regard to implementation without necessarily being required to do so.

24. **We call on all UN/ECE member States and the European Community to consider ratification of or accession to,** as appropriate, environmental conventions in the UN/ECE region, as soon as possible.

THE PROCESS "ENVIRONMENT FOR EUROPE"

25. We gratefully acknowledge the offer of the **Government of Bulgaria** to host and prepare our **next Ministerial Conference in 1995**. Governments have indicated that they will provide the necessary support for the Government of Bulgaria.

The Goverment of Bulgaria will establish an **internationally composed organizing committee.**

The **agenda of our next meeting** will include: a review of the implementation of the Environmental Action Programme including Nature Conservation; and the further development of the Environmental Programme for Europe, both by reviewing the progress of the work on the initial elements and by intensifying our cooperation in other areas, such as transport and the environment, transboundary air and water pollution, or human settlements.

26. **The Senior Advisors of ECE Governments** on Environmental and Water Problems **(SAEWP)** will establish an **ad-hoc working group of senior officials.** The Commission of the European Communities, international organisations and financial institutions, UNEP, and the international informal sector organisations active in the UN/ECE region will be invited to participate.

The working group will serve as the **central coordinating body** for the further development of the process "Environment for Europe". **It will oversee the follow-up to the Luzern Conference** and the **substantive preparations of our next Ministerial Conference.** In particular, it will pursue the further development of the **Environmental Programme for Europe** on the basis of the State of the Environment Report for Europe to be published before the end of 1993.

27. **A Task Force** established by the Ministers and **co-chaired by the Commission of the European Communities, together with a Central and Eastern European country on a rotating basis,** and with the OECD as the secretariat, actively supported by the World Bank and the EBRD, and with participation of interested governments and other international organisations and financial institutions will facilitate the implementation of the Environmental Action Programme for Central and Eastern Europe. A way should be found to **involve the informal sector in the process,** and the OECD will make proposals on the appropriate mechanisms, including reporting mechanisms.
The Task Force, in pursuing its institutional and policy work, will liaise with the **Project Preparation Committee** concerning investments coordinated through the **Project Preparation framework.** The Task Force will facilitate

support for national and local project preparation and investment bodies.

28. The **Council of Europe**, in cooperation with **IUCN** and other relevant international, governmental and non-governmental organisations, will pursue the implementation, review and adaption processes in the field of Nature Conservation.

29. **Progress reports** from these and other relevant preparatory efforts will be submitted to the Ministerial Conference **through the ad-hoc working group of senior officials** as the central coordinating body referred to in paragraph 26.