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ORGANISATION FOR ECONOMIC
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DIRECTION DE LA COOPÉRATION POUR LE DÉVELOPPEMENT
DEVELOPMENT CO-OPERATION DIRECTORATE

Aid Management Division

Mr. Jan Teun Visscher
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April 25, 1994

AMD(94)51

Dear Jan Teun,

Please find attached a complete set of the documents prepared for the DAC Meeting on Water Resources Management which will take place at the OECD on 10-11 May.

We are again most grateful for your participation in the two Expert Group meetings in June and November last year and for the study which you contributed to the meeting.

We look forward to our continued collaboration.

Yours sincerely,

Elisabeth Thioleron
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ORGANISATION FOR ECONOMIC
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DEVELOPMENT ASSISTANCE
COMMITTEE

RESTRICTED

Paris, drafted : 15-Apr-1994
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DCD/DAC/A(94)7

Or. Eng.

DRAFT AGENDA OF THE 661ST MEETING

to be held on Tuesday 10 May 1994 at 10.00
and continuing on Wednesday 11 May at the Château de la Muette, Paris

Note : In a spirit of paper economy and for environmental protection purposes, extra copies of the documents listed on the agenda will not be available in the meeting room.

Meeting rooms are "no smoking" zones.

013485

DRAFT AGENDA OF THE 661ST MEETING

1.	Adoption of the Agenda (2 pp.)	DCD/DAC/A(94)7
2.	Water Resources Management: Implementing the New Policy Consensus (11 pp.)	DCD/DAC(94)8
	a) Implementing the New Policy Consensus	
	b) Participatory Approaches, Decentralisation and Public and Private Sector Involvement	
	c) Funding, Administration, Information and Co-ordination	
	d) Next Steps	
3.	Other Business	

Documentation

Towards Joint Strategies for Supporting Water Resources Management (Note by the Delegation of Sweden) (30 pp.)	DCD/DAC(94)9
Gender and Water Resources Management (Note by the DAC Expert Group on Women in Development) (17 pp.)	DCD/DAC(94)10
Coopération internationale pour une gestion durable des ressources en eau : une expérience française (Note by the Delegation of France) (7 pp.)	DCD/DAC(94)11
Implementing the Water Resources Mandate of Agenda 21: The Promise and the Challenges for OECD Countries (Note by the World Bank) (22 pp.)	DCD/DAC(94)12

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WATER RESOURCES MANAGEMENT: IMPLEMENTING THE NEW POLICY CONSENSUS

(NOTE BY THE SECRETARIAT)

The attached issues paper has been prepared in collaboration with Mr. David Kinnersley, Consultant to the DCD. It is submitted for CONSIDERATION at the DAC meeting on 10-11 May 1994.

013260

Table of Contents

WATER RESOURCES MANAGEMENT: IMPLEMENTING THE NEW POLICY CONSENSUS

I. Introduction

1. Water is essential for life -- and for a mass of productive activities. It is also the key support for hygiene and health. No technical innovation can alter this: in many uses, there is no substitute for water.

2. In the 1990s water in development has acquired new impetus arising from the following hard-hitting realities:

-- With the world population currently expanding by 95 million yearly, the risk of water stress and outright scarcity is inevitable. Even where water is plentiful in terms of volume, good quality water is becoming scarce.

-- In 1990, 26 countries in most of North, East and Southern Africa and the Middle East were already suffering from water shortage. At present 300 million people are living in such regions. By 2025, some 3 billion people will be affected -- a tenfold increase representing a considerable number of countries.

-- As the earth's population continues to grow, and demand for clean and dependable sources of water escalates, groundwater quality is everywhere declining slowly but surely. The long-term effects of pollution and over-exploitation of ground water is difficult to measure yet but will have serious consequences on water quantity, human health and ecosystems generally.

-- Many of the areas where the population explosion is greatest, pollution most threatening to life, and water most likely to be scarce are also the ones least equipped to organise or finance solutions to their problems.

-- A necessary first step towards addressing the above problems would be to establish programmes of national coherent action to manage water more rationally. Donors could have a major role in promoting this. However, donor countries' temperate climate, access to water and technology, administrative capacities and experience in water-related policies hardly equip them to deal with the problems of developing countries. It will take considerable humility and learning before they can join recipient countries in developing and implementing comprehensive water resources policies that are appropriate and sustainable in those countries' circumstances.

3. This paper uses the definition from the Nordic Freshwater Initiative (1992) to describe water resources management (WRM) as "all phases of resources planning, development use and protection, i.e. assessment, planning, implementation, operation and maintenance and monitoring and control. It includes both 'combined resource and supply management' and 'demand management'".

4. Collective and individual initiatives for improving WRM have begun to emerge as a result of the International Drinking Water Supply and Sanitation Decade (IDWSSD). There is now a remarkably wide

consensus clearly expressed in the statements adopted at the 1992 Dublin and Rio meetings on this subject as well as at the Ministerial Conference on Drinking Water Supply and Environmental Sanitation, which took place in March 1994 under the sponsorship of the Dutch Government. These statements are now familiar enough not to require repetition or review in the present discussion.

5. The World Bank Policy Statement on Water Resources, and new elements in some donor programmes in the sector -- described in the paper "Towards Joint Strategies for Water Resources Management" [DCD/DAC(94)9] -- also provide a solid foundation and background for this meeting. For brevity, this paper refers to them as the **New Policy Consensus.** This consensus is committed to achieving not merely a new coherence of policy for the water sector, but also stronger coherence of all actors and stakeholders, including users, in their sense of joint involvement, responsibilities and ownership.

6. The consensus builds on several interrelated and interdependent components:

-- national frameworks for the water sector should generate a coherent approach to water resources for which demand is the driving force;

-- water should be treated as an economic good with suitable pricing, also covering basic needs at affordable cost;

-- an often fragmented water sector (drinking water supply, sewerage and sanitation, irrigation, etc.) has to be made to work as a "real unity", including in regional settings;

-- central governments should assume an enabling and regulatory role and be less directly involved in service delivery;

-- active user participation, including decision-making, should be promoted at all levels; there is scope for greater non-governmental organisation (NGO) and user involvement in water projects and programmes as well as a role for private finance and management in suitable and well-defined frameworks.

7. **Given the clear policy consensus, the emphasis and effort must now be directed to implementing it.** As a first step, External Support Agencies (ESAs) must assist recipient governments in establishing national policy frameworks and strategies, and strengthening the necessary institutions and human resources to implement them. For their part, recipient governments have a real and demanding task in shaping their own water sectors to suit their physical and economic circumstances.

8. Three major implementation aspects of the New Policy Consensus are covered in Part II of this paper: urgency and long-term commitment; water as an economic good; and the water sector as a "real unity". Part III addresses participatory approaches, decentralisation and public/private sector involvement. Part IV highlights major aspects of funding, administration, information and co-ordination for the sector.

II. Implementing the New Policy Consensus

i) Implementing the consensus is urgent and requires long-term commitments

9. In the water sector, as often elsewhere, implementation sounds rather abstract, yet needs to be practical. It may also sound easier than it really is. A deliberate and effective start on implementation is urgent, because there is so much to do and because the Dublin and Rio consensus is already nearly two years old. Several ESAs are already launched into supporting implementation programmes and some of them have integrated components of the New Policy Consensus for a number of years. Their contribution to the present discussion can be especially useful.

10. The sense of urgency, necessary as it is, must not mislead any of those concerned into seeing the principles addressed in the New Policy Consensus as short-term priorities. It will take periods of five years or longer to gain results from policies that involve complex economic and institutional change and capacity building in many settings where these matters have tended to be deficient and slow to improve.

11. The case for urgency, long time-scales and sustained political commitment will arise especially from the very diffuse nature of what we call, all too simply, the water sector or WRM. In reality, water use is important in one key role of its own -- providing water for daily use by people, and thus for personal and public health -- and a hundred or more supporting roles which are often misjudged because they are diffused through all other sectors of the productive economy in urban and rural areas alike.

12. Irrigation is the dominant use of water in many settings, but all sorts of other businesses depend on water as a minor but essential and regular input to their work. Many of these users, including farmers, have potential to generate polluting effluents or effects on land which can be damaging to the quality of surface or ground water. Thus they may depend on access to good water and threaten its availability at the same time. The increasing strains on water resources in many countries are cumulative and self-reinforcing for this very reason. It will require persistent and widespread effort to moderate them.

13. Finally, one must recognise the large part that habits, unconscious routines and local cultures play in water use, and the tendency for people to change such routines only very slowly. In strengthening economic influences on the water sector, it may be especially important to introduce change in a series of small but coherent steps rather than by sudden leaps.

ii) Treating water as an economic good yields multiple benefits

14. Many influences in many countries (including donor countries) have contributed to attitudes and cultures in which water is regarded as a non-economic resource, because users see it as a gift of nature or God(s) or government or engineering. This may suit the engineers or politicians as much as the users. A related attitude is that people should not have to pay much for water because in many settings its availability remains often insecure and variable. Indeed, water is often allocated by political decision, legal procedures and property rights rather than market forces.

15. The total production cost of water involves expenditures related to abstracting, transporting, storing, treating and distributing the water (financial costs), and the value of the most valuable opportunity

foregone because of this water ("opportunity cost" or "scarcity value"). User charges should be collected to cover both the direct financial cost of inputs such as capital and labor and the opportunity cost.

16. Sharper pricing of access to water resources and water services can improve legal allocations, making them somewhat more open to change when necessary. More important, pricing can provide motivation to take better care of water resources, making the most of their productive potential and guarding them against pollution. This needs to be pressed on recipient governments to help them overcome the internal resistance that more realistic pricing of water will be always a negative extra burden for the people. Increasingly, research shows that people can put a high value on water that is reliably accessible where they want it. Self-help projects also evidence the willingness of would-be users to contribute effort as well as money for higher water quality and better facilities.

17. Water projects often require significant capital expenditure up-front which governments finance (with or without external support). Yet repeatedly, increasing income for maintenance and future capital spending is neglected by governments that allow water to go on being provided to users at prices that may hardly cover operation and maintenance costs.

18. Policy and equity require that treating water as an economic resource be fostered among all water users. A major challenge belongs in the irrigation sector where allocations of water to farmers continue to be charged for at less than full cost. If farmers were to pay for water in relation to what society has invested to supply it, it is likely that abuse of water would be reduced both with regard to how much water will actually reach the crops and with regard to cropping patterns.

19. Another challenge concerns protecting water quality and making polluters liable to society for the environmental damage they create. There is no single approach or specific sequence of actions that will guarantee the successful protection of ground-water resources. Many protective actions can, nevertheless, be pursued concurrently at the local, national and regional levels. Without the co-operation of individuals, the best planned and technically most advanced efforts for protecting water will be unlikely to succeed.

20. The increasing trend to link "ownership of water" with the "ability and willingness to pay" can be negative for women, given their economic constraints. Similarly, the trend to see rights as associated with the degree of "value-added" economic benefit assigned to a particular water use may not be positive for them. Women's major uses of water for household needs and informal sector activities are normally under-valued since they are often perceived as having mainly social benefits. The important economic contributions of these "non-productive" uses need to be identified and recognized in planning. This will require new gender-sensitive approaches in relation to concepts and for calculating economic value.

21. Treating water as an economic good is not only a matter of prices, tariffs and how to charge for what service. It is a principle that should be operationalized to foster a better stewardship of water throughout society. Information and education must complement pricing policies to promote a more rational use of this scarce and vulnerable resource.

iii) Making the water sector a "real unity"

22. Sound water management policies and practices, including pricing, are significant not only for each specific use of water but also for co-ordinating WRM as a whole. For a sector subject to so much fragmentation even between separate (and often rival) government departments, co-ordination really calls

for effort and innovation to overcome the traditional pursuit of special group interests within and outside government. The need for coherent policy and administration, and flexibility in WRM is even more acute in areas of uncontrolled urbanisation. Gathering and publishing reasonably consistent data will become a key step for determining coherent policies and for gaining user-acceptance in implementing them. Several ESAs are already directing attention and support explicitly to improving data availability and sector co-ordination.

23. The need for more and better information is evidenced in terms of water catchment protection and river basin management. States which see themselves as sovereign in everything else have to recognise that, where they share river flows with neighbours, the river regime itself (and flood and drought) sets limits to their absolute power. In several regions, the sharing of water between states, projects for dams and related matters have generated great political tension. Where ESAs can provide support for better data collection as a basis for some form of co-operation between riparian neighbours in managing river resources, tensions may be more likely avoided or moderated. Sharing of information between donors, and with recipient governments, may be an important foundation for effective co-ordination which is neither too costly nor difficult in itself.

Questions

- -- Are Members in a position to make the necessary long-term commitments?
- -- Why is it so difficult to get government agencies in developing countries to collect more systematically the potential income from realistic water charges? Can Members say that, through dialogue and assistance, they help to provide not only water for users but a basis for steadily growing income which governments can administer?
- -- What experiences do Members have in helping the process of making the water sector a "real unity" in developing countries? What are the implications in terms of technical co-operation and institution building?
- -- Are present arrangements for sharing information between partners in development satisfactory? What improvements could be recommended?

III. Participatory Approaches, Decentralisation and Public and Private Sector Involvement

i) Participatory approaches and decentralisation

24. The New Policy Consensus makes one point of special force for WRM, even if it is often discounted by governments. In important respects -- despite modern engineering technology -- water remains a local resource and people recognise that. The river basin is their neighbourhood and habitat, even if political boundaries may take little account of its unity. Thus decentralisation is not, in this sector, just a pious aspiration or the politically fashionable flavour of the year. It has a real physical basis in the disposition of natural resources and their convenient usage.

25. User and citizen participation can be better and more cheaply organised on a localised basis than across a scattered territory. Moreover, the matters of concern to users and water management agencies are likely to be significantly different in areas of relative water scarcity and areas of plenty. They will differ also between rural areas and megacities, and between rich and poor. Thus policies that encourage participation will have a different impact according to the geographical setting and target group. More information needs to be collected and analysis carried out to measure such implications.

26. There is compelling evidence that when they participate in decisions concerning the choice of technology, methods of management and financial arrangements, women contribute to the sustainability of projects and programmes in the water sector. A gender analysis may help understand the roles and responsibilities of both men and women and should be more systematically conducted to promote participation at the lowest appropriate level.

27. Inertia in government and vested interests may obstruct public participation. The centralist traditions and cultures in water bureaucracies and national politics have long been powerful. The fact that ESA funds are almost always channelled through central governments may even contribute to central dominance and preserve it. The range of local groups or agencies that could take substantial roles in the water sector are not likely to gain much recognition, experience or effectiveness where central government is not determined to encourage them towards a larger role. Municipalities, autonomous local utilities, user associations in towns, village committees in rural areas and NGOs all tend to grow strong with responsibility, but weak where their role is confined.

28. Reticence vis-à-vis proposals for decentralisation is common. On the one hand, arguments for co-ordination across the water sector can be readily used against decentralisation. Yet some services, particularly in water supply and sanitation, tend to be more readily delegated than others. On the other hand, decentralisation can take the form of government unloading liabilities (from past neglect and underspending) without any regard to what financial or other resources local agencies may have available to cope with them. Another commonly-held view is that civil servants at the centre may take some persuading to part with power and budgets.

29. ESAs' experiences to support decentralisation and participation need discussion and reinforcement. Whatever approach may be selected, the necessary functions of governments (water laws, decisions on the use of water resources in case of competing interests, etc.) and the possible responsibilities and functions of autonomous private bodies must be clarified. Because ESAs are outsiders they may have, despite the risks of appearing intrusive, real scope to promote efficient and effective co-operation between all stakeholders, whether public or private.

ii) Involving private finance and management

30. The scope for private business participation in the water sector is not universally great. The capital intensity of the sector, and the stability of demand for water, can make private financing attractive to business and government. The unavoidable tendency to monopoly is, however, a major impediment. Expatriate commercial development of water resources may also contribute more to fragmentation than co-ordination.

31. The "French model" is currently implemented in selected developing countries, with encouraging results. The model resolves much of the tension initially by retaining public ownership of the main

infrastructure assets and by decentralising control and regulation through well-defined contracts granted and monitored by municipalities.

32. Additional private finance apart, many of the benefits in service delivery and efficiency credited to private business management are not always out of public agencies' reach. Moreover, public agencies are likely to be in charge of 80 per cent or more of water supply and irrigation for at least the next half century. Thus policies to improve the efficiency and business capacity of public sector water agencies remain important: the scope for limited private sector participation in some countries must not be allowed to push this larger issue down or off ESAs' agenda.

Questions

- -- Can Members identify the key conditions that are fertile or hostile for decentralisation and participation?
- -- Would Members indicate their most successful (and less successful) approaches in promoting participatory approaches in WRM? What can they do to promote synergisms between decentralisation and participation?
- -- Do in-house ESA procedures allow for direct support of local activities? If not, what actions should be considered to overcome such obstacles?
- -- What can Members do to promote private sector involvement within well-defined frameworks of social, economic and environmental regulations?
- -- Given the relative limitations of private business involvement in the water sector, what practical steps in capacity-building can Members support specifically to enhance performance of government in WRM and efficient service delivery?

IV. Funding, Administration, Information and Co-ordination

33. Four points are addressed, but ESAs may well draw on their own recent experience to suggest others.

i) Funding

34. A number of ESAs' total budget and staffing levels have been constrained in recession and may be slow to grow again. The paper on joint strategies for water resources management [DCD/DAC(94)9] shows that the relative share of water supply and sanitation in total ODA commitments has fallen from 8.1 per cent in 1982 to 5.1 per cent in 1991 -- and this during the United Nations Decade on Drinking Water Supply and Sanitation.

35. Focusing on a new coherence in WRM does not call for massive new capital investment. Indeed, getting improved operation and service delivery from existing physical facilities and water resources readily available is at least as urgent as service extension, and should cost much less. Rehabilitation should always be considered before the construction of new infrastructure.

36. DCD/DAC(94)9 states that some 22 ESAs each support water and sanitation projects in 25 countries on average, which indicates that financial and other resources can be spread over a wide range of countries often at the expense of efficiency, particularly in the absence of a national policy framework or sector programme.

Questions

- -- Given the fact that ESA funding for the water sector has dwindled, would Members still agree with the proposition that proper use of available means takes priority over claims for more aid?

- -- Is it feasible for Members to envisage concentrating their resources on fewer recipients to facilitate the implementation of the policy described above? Can joint funding and consortia approaches be used more widely to promote the new objectives?

ii) Administration and accountability

37. Do ESAs find monitoring and financial accountability in recipient countries in this sector comparatively expensive? Are they aware of the costs associated with project oversight in countries that are short of adequate human and other resources? Can they moderate that cost? Still, this is not just an issue of cost: it seems likely that the administration of external support tends to sustain influences for centralisation. ESAs' knowledge and experience in supervising decentralised aid or cost-saving in administration could be very helpful to others.

38. Many ESAs have always given attention to ex-post evaluations (hence the knowledge of less than fully satisfactory or sustainable results). As the emphasis moves away from physical construction towards capacity-building and decentralisation, a different type of monitoring and evaluation will be called for.

- -- What specific changes of Members' procedures at home and in recipient countries may be necessary as the emphasis of project preparation and supervision adapts to the new policy requirements of decentralisation, increased user participation and other aspects of the new consensus? What are ESAs' experiences so far?

iii) Information and training

39. Because the water sector is compartmentalized, providing for the exchange of cross-cutting information and experience among agencies, professionals and all sorts of users and the public generally should be systematic.

- -- What are Members' experiences in this respect?

40. The New Policy Consensus will not be implemented as effectively as it should unless all parties involved in WRM and water service delivery gain new insights through information and training into what is required, and more time is provided to promote these requirements in recipient countries. Agencies and staff at all levels in those countries also need training to ensure the success of new economic policies, decentralisation and related matters.

-- Is a new and greater emphasis on training, especially for senior water professionals in Member countries, necessary? If so, what new approaches may be most effective?

iv) Co-ordination

41. The New Policy Consensus will depend for much of its progress on dialogue between ESAs and recipient countries. Additionally, the routine processes of planning, monitoring and evaluation may have to change -- not just in their bureaucratic format but in the perception and definition of what constitutes a project in capacity-building, and how to assess, support and monitor institutional strengthening over several years. Social and economic aspects of projects and programmes will also have to be given a much higher attention than traditionally relative to technical engineering and conventional cash accounting.

-- What are ESAs to do to promote such changes and make them sustainable?

42. In order to achieve optimal effectiveness in co-operation, ESAs will have to develop or strengthen co-ordination mechanisms at all levels.

-- Are donors satisfied with existing co-ordination mechanisms at local, national, regional and international levels? If not, what improvements would they recommend?

V. Next Steps

43. What do Members consider to be the next steps in the pursuit of good WRM? What specific roles could DAC usefully play?

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TOWARDS JOINT STRATEGIES FOR SUPPORTING WATER RESOURCES MANAGEMENT

(NOTE BY THE DELEGATION OF SWEDEN)

This paper was prepared by Mr. Jan Teun Visscher and Ms. Maria Sörensson (International Water Supply and Sanitation Centre) on behalf of the Swedish International Development Authority. It is circulated as a BACKGROUND document for the DAC meeting on 10-11 May 1994. It represents a synthesis of major findings concerning aid agencies' administrative structures, policies and strategies. The main document will be available as a room document.

013419

Table of Contents

Synthesis Section

List of Abbreviations

ACC	Administrative Committe on Co-ordination
ADB	Asian Development Bank
AIDAB	Australian International Development Assistance Bureau
CETESB	Companhia de Tecnologica de Saneamento Ambiental
CIDA	Canadian International Development Agency
CRS	Creditor Reporting System
DAC	Development Assistance Committee
DANIDA	Danish International Development Agency
DCD	Development Co-operation Directorate
DGIS	Directorate-General for International Co-operation
EC	European Community
EIA	Environmental Impact Assessment
ECA	United Nations Economic Commission for Africa
ESA	External Support Agency
ESCAP	United Nations Economic & Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organisation
FINNIDA	Finnish International Development Agency
ICWE	International Conference on Water and Environment
IDB	Inter-American Development Bank
IDWSSD	International Drinking Water Supply and Sanitation Decade
IHE	International Institute for Infrastructural, Hydraulic & Environmental Engineering
INERHI	Ecuatorian Institute of Hydrology
IRC	International Water Supply and Sanitation Centre
JICA	Japan International Co-operation Agency
NCU	National Co-ordination Unit
NGO	Non-governmental organisation
NORAD	Norwegian Agency for Development Co-operation
ODA	Official development assistance
ODA	Overseas Development Administration
OECD	Organisation for Economic Co-operation and Development
PEC	Primary Environmental Care
SDC	Swiss Development Co-operation
SIDA	Swedish International Development Authority
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organisation
WMO	World Meteorological Organisation
WRA	Water Resources Assessment
WRM	Water Resources Management

Preface

1. An urgent need exists to improve water resources management and action has been called for by a range of fora including the January 1992 International Conference on Water and Environment (ICWE) in Dublin and the June 1992 World Summit in Rio.

2. To reinforce the dialogue and improve co-ordination, the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD) is planning a meeting on water resources management in May 1994. This meeting seeks to enhance collaboration and to contribute to more efficient management of water resources. The DAC Members will review their own experiences and those of other agencies with support programmes related to integrated water resources management policies and strategies.

3. This background document has been prepared to make the support strategies and interventions of major external support agencies (ESAs) better known and to stimulate effective information exchange amongst the DAC Members. It may also serve as source of information for governments and other staff working in the sector. It has been developed by the International Water Supply and Sanitation Centre (IRC), at the request of the Development Co-operation Directorate (DCD) of the OECD, with financial support from the Swedish International Development Authority (SIDA).

4. The document contains an overview of policies and activities of 26 ESAs involved in the water sector. It includes data on:

- -- administrative assistance structures,
- -- support policies and strategies,
- -- intervention tools,
- -- amounts provided to support the water sector and as a share of total development assistance,
- -- partners in project planning and implementation,
- -- countries where assistance is concentrated,
- -- projects which different ESAs have earmarked as promising in relation to integrated water resources management and which they commend to others.

5. The document was developed through a consultative process with staff members from the different ESAs. A draft profile was established for each ESA based on existing information. The main documents used in this process were: Co-operation and Urban Development by Milbert, I. 1992; OECD Development Co-operation Report 1992; UNDP Socio-Economic, Monetary, and Resources Tables, S.M.A.R.T. Profiles 1992; The International Drinking Water Supply and Sanitation Decade Directory of WHO 1987. The draft profiles were sent to staff members from the respective ESAs, who took considerable efforts in expanding them. Subsequently the profiles were finalised by IRC in consultation with the DCD.

6. The document has been prepared by Mr. Jan Teun Visscher and Ms. Maria Sörensson from IRC. Considerable inputs were provided by staff members of the different ESAs in the development of the profiles and in providing information on promising approaches (Annex 1). Grateful mention is made of the valuable support provided by Mr. Ingvar Andersson, Mr. Brian Appleton, Mr. Joep Blom, Mr. John Briscoe, Mr. Nigel Brown, Dr K. Erbel, Mr. Dominique Gardin, Mr. Jean-Louis Grolleau, Professor Atef

Hamdy, Ms Carolyn Hannan-Andersson, Mr. Stanley Johnson, Mr. David Kinnersley, Ms. Elisabeth Thioleron, Ms. Christine van Wijk-Sijbesma and Mr. Carl Wahren.

Summary

1. Mismanagement of water and land resources is putting human health and sustainable development at risk. The June 1992 World Summit in Rio and the January 1992 International Conference on Water and Environment in Dublin have endorsed the need for urgent action and given indications about the strategies to follow. Two years later a review of the strategies of 26 ESAs, including 17 OECD Member countries, shows that whereas all endorse the principles of Rio and Dublin, the majority still support water resources management (WRM) on an ad hoc basis in individual projects.

2. Information on funding allocation for WRM is not readily available, as most ESAs do not distinguish it as a separate issue. Annual ESA commitments for water and sanitation have increased over the period 1982 to 1991, but their relative share in the total development assistance commitments has decreased from 8.1 per cent to 5.1 per cent. National governments, however, have increased their sector funding from 0.3 per cent to 0.45 per cent of their GDP. A few ESAs have indicated that they are considering to reallocate their budgets and make more funding available for WRM.

3. Many ESAs provide relatively sparse support to the water sector. The number of countries receiving support from individual OECD Member countries ranges from 7 to 52, with an average of 25. This average is likely to go down as several ESAs are in a process of concentrating their assistance to fewer countries. The majority of assisted countries receive support from different ESAs, some even are supported by 14 or 15 of the 26 ESAs covered in this review, each bringing in their own experts, methods and approaches.

4. The number of ESA staff involved in the sector has decreased over the recent years as a result of greater involvement of specialists from assisted countries and from the private sector. Very few ESAs have specialised staff who focus exclusively on WRM. The rule is that WRM is added on to the tasks of other staff such as drinking water and irrigation specialists. In training and research several ESAs are beginning to actively promote the involvement of institutions from assisted countries. Only very few undertake research for capacity building in the countries. They also tend to make use of their own local institutions in a supporting capacity.

5. Although few ESAs are developing a WRM support policy, it is encouraging that the most advanced policy clearly encourages assisted countries to develop their own comprehensive framework for WRM, using their own expertise with possible backstopping and support from ESAs. This policy places strong emphasis on capacity building, user involvement, decentralised delivery and management structures, economic pricing, financial accountability and enhanced use of database systems. It does not, however, specifically address gender issues nor does it promote environmental awareness of the general public. The implementation of such policies are still very much at an early stage.

6. Prospects which include positive WRM aspects have been indicated by the 26 ESAs. These can be grouped in broad areas including: establishing water policies and legal frameworks, water resources assessment and database development, water catchment protection and river basin management, management at the lowest appropriate level, abatement of pollution and efficient water use. The experience of these projects provides a good basis for establishing more integrated WRM strategies, but also shows that further development is needed in key areas such as: user participation in decision-making, gender issues and treating water as an economic good.

7. The need for collaboration is supported by all ESAs but, in practice, mostly takes the form of consultation. Only a few examples are brought forward where ESAs really join hands in supporting national governments to develop clear strategies on WRM and thus avoiding overlap and duplication of effort.

TOWARDS JOINT STRATEGIES FOR SUPPORTING WATER RESOURCES MANAGEMENT

1. INTRODUCTION

1. "Scarcity and misuse of fresh water pose a serious threat to sustainable development and protection of the environment. Human health and welfare, food security, industrial development and the eco-systems on which they depend, are all at risk, unless water and land resources are managed more effectively in the present decade and beyond than they have been in the past" (The Dublin Statement on Water and Sustainable Development). Competition for limited fresh water sources is growing quickly among households, industry and agriculture, while the resource itself becomes more scarce due to increasing pollution and greater consumption. To cope with population growth and to cover the population presently not served, efforts will have to be stepped up considerably. To reach universal coverage for water and sanitation by the year 2000 an annual investment of US$50 billion would be required, whereas the United Nations Development Programme (UNDP) suggests that perhaps US$15 to US$20 billion might be available annually, thus calling for much more efficient approaches and better management of resources (UNDP, 1991).

2. Chapter 18 of Agenda 21 of the United Nations Conference on Environment and Development in Rio also stresses the need for improved management of water. It clearly indicates that international co-operation for sustainable development must be strengthened to support and complement the efforts of developing countries.

Box 1	***The seven programme areas addressed by the Freshwater Chapter of Agenda 21:***
(a)	*integrated water resources development and management*
(b)	*water resources assessment*
(c)	*protection of water resources, water quality and aquatic ecosystems*
(d)	*drinking water supply and sanitation*
(e)	*water and sustainable urban development*
(f)	*water for sustainable food production and rural development*
(g)	*impacts of climate change on water resources*

3. Most bilateral and multilateral agencies have a long experience of development co-operation in the water sector. The International Drinking Water Supply and Sanitation Decade (1981-90) brought additional financial resources to the sector and, maybe more important, contributed to the development of appropriate sector policies, technologies and enhanced consultation.

4. Although a functioning global collaboration has been established, ESAs adopt a wide range of support strategies and interventions, as is shown in the section on promising approaches. This arises partly from the different interpretations ESAs give to water resources management (WRM). Definitions adapted from the Nordic Freshwater Initiative are indicated in box 2, to help establish a common understanding.

Box 2 ***Definition of water resources management***

*'**Water resources**' means fresh water in the broad sense as available for use and susceptible to human interventions. 'Water' can be surface or groundwater, and is characterized by both quantity and quality.*

*'**Management**' means **integrated management**, covering all phases of resources planning, development, use and protection, i.e. assessment, planning, implementation, operation and maintenance and monitoring and control. It includes both 'demand management' and 'combined resources and supply management'.*

*'**Integrated**' means management of water resources as regards their development, use and protection, and considering all sectors and institutions which use and affect water resources (cross-sectoral integration). 'Integrated water management' may be interpreted as integrated 'land and water management' to the extent that land management measures affect the supply and quality of water resources.*

(Adapted from Nordic Freshwater Initiative, 1992)

5. Chapter 2 of this document provides a synthesis of the information contained in the different ESA water sector profiles concerning policies, staffing and financing. Chapter 3 summarises the intervention tools ESAs are using at different levels to support and influence WRM activities in the assisted countries. Chapter 4 brings together information on the projects and approaches which have been earmarked as promising by ESAs and provides suggestions for activities and approaches which could be stimulated to improve WRM. Chapter 5 provides information on co-ordination activities which are being pursued.

6. Part II of the main document comprises the water sector support profiles of 26 ESAs, including 17 OECD Member countries: Australia (AIDAB), Austria, Canada (CIDA), Denmark (DANIDA), Finland (FINNIDA), France, Germany, Ireland, Italy, Japan, The Netherlands (DGIS), Norway (NORAD), Spain, Sweden (SIDA), Switzerland (SDC), United Kingdom (ODA) and USA (USAID) and of 9 other ESAs: African Development Bank (AfDB), Asian Development Bank (AsDB), European Commission (EC), Food and Agriculture Organisation (FAO), Inter-American Development Bank (IDB), United Nations Development Programme (UNDP), United Nations Children's Fund (UNICEF), World Meteorological Organisation (WMO) and the World Bank. The depth of information in the profiles varies as not all ESAs had information readily available on the covered issues.

2. TRENDS IN ESA POLICIES, STAFFING AND FINANCE

2.1 Water resources management policies

7. All ESAs endorse the principles on WRM developed in Dublin and Rio. A number both actively support the development of these principles and their implementation in projects they support. All indicate that they still need to develop further their policy and support mechanisms for WRM in developing countries.

Box 3 ***Guiding Principles on Water and Sustainable Development***

- *Fresh water is a finite and* ***vulnerable resource****, essential to sustain life, development and the environment. Its effective management demands a holistic approach linking social and economic development with protection of natural ecosystems;*
- *Water development and management should be based on a* ***participatory approach****, involving users, planners and policy-makers at all levels. This implies raising awareness of the importance of water among policy makers and the general public and decision making at the lowest appropriate level;*
- ***Women*** *play a central part in the provision, management and safeguarding of water. This pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources;*
- *Water has an* ***economic value*** *in all its competing uses and should be recognised as an economic good. Within this principle, it is vital to recognise first the basic right of all human beings to have access to clean water and sanitation at an affordable price.*

(From the Dublin Statement, 1992)

8. Although interest in WRM is clearly growing within ESAs, the majority of them still include it "ad hoc" on a project by project basis. WRM activities may result, for example, from an environmental impact analysis or from project staff experience with issues such as catchment protection. Water projects thus may vary considerably in the attention given to WRM. The IDB is one ESA which is developing policies to integrate WRM in all the water projects it supports.

2.1.1 ESAs' water supply and water resources management policies

9. A majority of ESAs have established specific policies governing their support to the water supply and sanitation sector and most include specific attention to environmental issues and/or WRM. Others, encouraged by the meetings in Dublin and Rio, are following. The World Bank has gone furthest in developing and articulating a specific WRM policy, through a process of internal and external consultation under guidance of a small task force. Under this policy, which recognises the multi-sectoral character of WRM, the Bank will assist countries to promote equitable, efficient and sustainable development. This

entails support for water supply and sanitation facilities, flood control and water for productive activities. Priority will be given to countries with a water policy already in place, where water is scarce, or where there are serious allocation, service efficiency, or environmental problems. The policy paper recommends that countries adopt a comprehensive analytic approach and places strong emphasis on capacity building, stakeholders participation, decentralised delivery and management structures, economic pricing, financial accountability, enhanced use of database systems, interdependence of land and water use. The policy does not, however, specifically address gender issues and promotion of environmental awareness of the public at large. In this respect, a positive development is shown in SIDA which very much endorses the importance of a more gender specific approach for the sector as shown in box 4. A couple of other ESAs, such as CIDA and FINNIDA also use more gender specific approaches.

Box 4 ***From Women's Development to a Gender Approach***

Women have long been considered an important target group for Swedish assistance, but women were earlier considered something of a category unto themselves, on the fringes of national development and therefore most easily reached through projects specifically for women. Now we try to let gender awareness guide the planning of all our projects. Each development assistance project shall strive to broaden women's participation. Actually, what we are talking about is a kind of "impact analysis", similar to that used in environmental planning. We must ask ourselves how each project will impact on the women and the men in the community for which it is intended. Having made such an analysis the project should be planned to involve both sexes. Gender programme officers are now at work in SIDA's Development Co-operation Offices, and all SIDA personnel as well as contracted consultants are to receive training in the new gender-aware techniques.

(SIDA, 1990)

10. Most ESAs have developed their water sector policy with the help of their own staff and advisors. In this process the influence of developing countries is limited, yet the end result orients the development aid of the respective ESA. Better use of funds might be coupled with larger influence of developing countries through adoption of a consultative process as now initiated by the World Bank on its policy framework and guidelines for WRM. The Rabat Meeting of the Collaborative Council for Water Supply and Sanitation (1993) proposed such a process, whereby a general policy framework is established and a basic set of tools and guidelines is developed.

2.1.2 Water resources management policies in the assisted countries

11. Only a few ESAs make it a priority to help assisted countries to develop overall national or regional policies for WRM. The FAO will shortly release guidelines for water policy formulation and is making assistance for policy formulation one of its priorities. Assisting developing countries to establish their own WRM policy is very much in line with the DAC principle on development assistance shown in box 5.

12. As a follow up to its policy paper, the World Bank is preparing a "Guide for Developing Water Resources Management Strategies". This guide outlines concepts and a process for formulating a national WRM strategy. It complements other policies and strategies such as water resources master plans and "rapid assessments" and stresses the need for long-term action. Implementation of this approach, however, is yet to begin, also because some of the issues involved are relatively new on the international agenda. No ESA is really reporting that an integrated WRM policy has been developed which encompasses agriculture, industry, water supply, tourism and environmental protection. Examples of ESAs joining hands to enable assisted countries to develop their policy and legal framework are still very limited.

13. Water as an economic good and demand management do not come out as main issues either. Some ESAs do indicate studies of pricing mechanisms for water allocation, and for waste water charges, but most seem to focus on recuperation of production and operation and maintenance costs. This more narrative approach leaves the issue of the environmental cost of water supply systems for future generations. No ESA seems to have taken up the issue of positive reinforcement through rewarding positive behaviour, as for example suggested by the FAO/WHO working group on legal aspects of water supply and wastewater management (FAO/WHO 1990). Limited emphasis is placed on public awareness about WRM and the urgent need for better environmental care.

Box 5 ***DAC Principles for Effective Aid***

"Development assistance is a co-operative partnership exercise between donors and recipients. The developing countries are responsible for their own development and development assistance can only be subsidiary and complementary to the efforts of the developing countries themselves. Aid supports activities for which developing countries have final responsibility and ownership. Project performance depends on both donor and recipient action."

(OECD/DAC, 1992)

2.2 Financial allocations

14. Information on financial allocations for WRM is not readily available, as most ESAs do not distinguish it as a separate issue. The limited information shows the following paradox: ESAs endorse the importance of WRM, yet do not have specific budget allocations for this field nor foresee any increase of finances for WRM activities in the near future. The reason stated is often the economic recession. Some ESAs, however, plan to rearrange their budgets to give WRM activities more emphasis and make them distinguishable.

15. Annual commitments for drinking water supply and sanitation have increased over the period 1982 to 1991, from US$1.87 billion to US$2.88 billion. According to the Statistical Reporting Directives, total allocation of official development assistance increased in this period from US$23 billion to US$57 billion. The relative share of water supply and sanitation in total commitments, however, decreased from 8.1 per cent in 1982 and 9.2 per cent in 1983 to 4.5 per cent in 1990 and 5.1 per cent in 1991.

16. Although these data only concern water supply and sanitation projects, statistics from the Creditor Reporting System (CRS) seem to suggest that the pattern for irrigation funding is quite similar. This is not a very promising trend. It may become even more negative as several ESAs are expecting that future allocations may stabilize or even decline as a result of economic recession. Regarding public investment for the water sector by national governments, the trend seems more positive. Preliminary information from the team working on the World Bank's World Development Report 1994 on infrastructure suggests that this investment increased from 0.3 per cent to 0.45 per cent of GDP between 1982 and 1991.

17. ESAs provide the largest volume of financial support to the African region, followed by the Asian and Latin American regions. The amount per country differs considerably, and so does the number of countries each ESA supports. The financial support for the water sector in a specific country may range from US$100 000 to US$100 million per year. More than half of the ESAs provide relatively small amounts of funds, about US$160 000 a year, to a rather large number of countries, while still enforcing their own policy lines and administrative procedures.

18. Sixteen OECD countries: Australia, Austria, Canada, Denmark, Finland, France, Germany, Great Britain, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland and USA have provided information on the countries they support. Together, these 16 OECD countries have provided support for water supply and sanitation projects in 96 different countries over the period 1986-91. The number of countries which each OECD country supports ranges from 7 to 52 with an average of 25. This average is likely to go down in future as several OECD countries are in a process of concentrating their assistance to fewer countries. Five of the other ESAs: ADB, IDB, FAO, UNDP and UNICEF have indicated that they have supported water projects between 1986 and 1991 in 26 to 127 countries, with an average of 68 countries.

19. Thirty-four assisted countries received support from one or two OECD countries. The other sixty-two countries received support from three to eleven OECD countries, in addition to support from other ESAs (UNICEF, World Bank, etc.). Each ESA brings in its own experts, methods and approaches, thus posing a strain on the recipient countries (see box 6). Some of the OECD countries such as Sweden channel not only their multilateral aid, but also a considerable part of their bilateral support through other ESAs such as UNICEF.

Box 6 ***Need to reduce the administrative burden of development aid***

"Overburdening the administrative capacity of recipients should be avoided. While effective action to streamline the administration of aid will not be easy, opportunities to harmonise and simplify the requirements exacted from recipient government should be sought."

(CLC Working Group, 1993)

2.3 Staffing

20. In most ESAs staff numbers have decreased over the last few years. This is due to some ESAs having involved the private sector in a stronger way; other ESAs leave more to national governments and the private sector in assisted countries; still others have faced reduced budget allocations. Only very few have specialised staff who focus fully on WRM. The usual case is that WRM is added to the tasks of drinking water and irrigation specialists. Discussions with several water experts showed that most of them are faced with too many priority issues and too little time to handle them in a way they would like to. Some ESAs have appointed a focal point for WRM to develop WRM policies, help establish co-ordination between the different actors within the ESA and assist in the policy debate with recipient countries.

21. The staff/funding ratio in different ESAs ranges from one staff member involved in water supply programmes for every US$1 million of development assistance for the sector, to one staff member per US$20 million. These figures can only be partially compared because ESAs' working procedures are very different. Some ESAs work more with their own staff, whereas others use consultants.

22. Data were received from 15 ESAs on the gender differentiation of their staff working in the water sector. Of a total of 106 staff members, 17 per cent were women. Per ESA, the figure ranged from 0 per cent to 67 per cent.

3. INTERVENTION TOOLS

3.1 Policy level interventions

23. ESAs' approaches towards assisted countries differ to a great extent. Some agencies strongly favor an open dialogue with the assisted country and support a full and frank exchange of information. Others develop strict rules governing their assistance programme and have a strong influence on project development through their own staff or consultants. Several ESAs, for example, do not indicate the amount of financial support that will be available for assisted countries, but decide this on a yearly basis after project proposals have been established.

24. Information on ESA policies concerning their support strategy for the water sector is usually shared with the counterpart organisations as guidance for project formulation but generally not put up for policy debate. A number of ESAs however are operating differently. They assist their counterparts in developing three to five year plans--thus permitting policy discussions on key issues such as WRM. For a number of aspects in WRM even a five-year horizon may be too short, particularly where it comes to establishing data bases and creating a legal framework. These plans can best be described as a framework for collaboration setting out a number of basic principles agreed upon between the partners. Subsequently, more detailed plans and proposals are established on an annual basis.

25. Some ESAs are in the process of taking the joint planning approach one step further. In Uganda, three ESAs, with one in the coordinating role, are jointly supporting the government of Uganda in establishing a national water resources policy as part of the National Water Action Plan (Box 7). This plan will provide the framework for collaboration between Uganda and the supporting ESAs and may help to initiate joint progress reviews by the government and the ESAs.

Box 7 ***Water Action Plan For Uganda***

A large number of bilateral and multilateral donor agencies and NGOs are becoming active in water resources development in Uganda. No effective mechanisms exist for the planning and co-ordination of the activities of these organisations.

It is in this context that Uganda has initiated the preparation of a Water Action Plan to enable the government to deal effectively with these problems and develop a framework for co-ordinated development and management of the water resources - with linkages between land and water resources - of the country at local, national and international level. The Water Action Plan can then allow the authorities to seek implementation of a set of co-ordinated programmes in line with national policies and international agreements.

(Danida, 1993)

3.2 Project level interventions

26. Most ESAs have their own guidelines and formats for project formulation, monitoring and evaluation. Some have a rather prescriptive nature whereas others follow planning approaches, which facilitate joint project formulation. SDC for example uses the Logical Framework in combination with rapid participatory rural appraisal techniques to enhance user participation. Many ESAs apply checklists for project formulation and approval, which include a range of issues such as community participation, gender and environment. WRM related issues are, to some extent, included in these checklists and in the Environmental Impact Analysis (EIA) which many ESAs now request for individual projects. Several ESAs have expressed the need for and are developing more specific checklists for WRM. The question is whether this will just add to the increasing administrative burden. It appears that the number of checklists has grown considerably over the years. Perhaps a more in-depth review is needed to simplify the checklists and harmonize the formulation, planning and reporting procedures and formats. These now show a wide variation among ESAs, and add to the administrative burden of assisted countries.

Box 8 ***The need to harmonize ESA formats and procedures***

"Discussions at the Kandy Workshop revealed that a major irritant among developing countries and NGOs was the wide variety of formats and procedures by which ESAs require information to be presented. Such inconsistent project approval and reporting requirements are deemed to be highly inefficient from the perspective of the sector managers within the developing countries".

(CLC Working Group Rabat, 1993)

3.3 Technical assistance

27. The total number of external technical advisors has decreased over the last twenty years, as more and more activities are carried out by staff from organisations in assisted countries. Technical assistance is still mostly provided by experts from ESA countries. Many of these individual experts were on long-term contracts with ESAs, but over the last years these contracts have been let to external consulting firms. Increasingly, experts are recruited from assisted countries. The trend towards leaving more to assisted countries and national experts may help to unify approaches as these experts will be involved in projects receiving support from different ESAs. At the same time, this calls for proper training, orientation programmes and information support for national experts to ensure that full benefit is being derived from latest developments.

28. Technical advisors are involved in different types of activities. Some have the overall responsibility for specific projects whereas others act in an advisory capacity. They are placed in different agencies in the countries, including planning departments, ministries of water or natural resources and water agencies, and mostly on a long term basis.

3.4 Training, research and information support

29. Training for higher level staff is receiving considerable support from ESAs, through scholarships, seminars and study tours. This training is mostly carried out by institutions in ESA countries. Several ESAs are actively adjusting their approach in linking training better to the projects they support and transferring courses to co-operating institutions in assisted countries. Training covers a wide range of issues, but training opportunities for WRM are still limited and do not necessarily take into account the full spectrum of ideas developed in Dublin and Rio. The UNDP symposium, held in Delft in June 1991, stressed that a comprehensive approach to training and capacity building is required to cater for the need for sector professionals to work in an integrated way and to improve the institutional framework (IHE, 1991).

30. In a few training institutions such as the University of Linköping, Sweden, WRM already has a higher profile and can be taken as a topic through the whole study programme. Some ESAs are developing special training units or centres in their country to strengthen the capacities of their own staff in special subject areas such as gender issues, but not yet on WRM. Some of these courses are compulsory for all staff, whereas others are only for specific staff positions.

31. Research activities are also generally carried out by institutions from ESA countries, but again with a gradual trend towards better involvement of institutions based in assisted countries. A few ESAs are going further in that the institutions in assisted countries lead the research. A few ESAs are also indicating that their support to research activities is expanding, thus underwriting the importance they attach to WRM.

32. Some ESAs strongly support the development of data base systems to assist WRM. These systems include information on ground and surface water resources, rainfall patterns and climate. In a number of countries the activities are carried out in the form of projects under the responsibility of external consultants. In other countries, ESAs support national organisations to develop the systems and also contribute to capacity building in making environmental profiles and carrying out impact assessments. Information on the quality and maintenance of data base systems is not provided in the profiles, but it

seems that the upkeep of the systems is not fully secured. Prime emphasis appears to be on collection of technical data, but a few innovative projects, like the HIMA project in Iringa, Tanzania, are using participatory and gender specific techniques to collect data on different land and water use patterns of men and women.

33. Information support through seminars and workshops is provided by several ESAs, but only recently has this included WRM. The 1993 meeting in Uganda jointly supported by different ESAs is a good example. It had a clear focus as it aimed at developing a framework for WRM for Uganda. Often, however, this type of information support is provided in a scattered way without much orientation towards wider implications and is not embedded in programme and policy development in assisted countries.

34. Some ESAs attach considerable importance to supporting organisations involved in information and communication of sector information as an essential support component for technology transfer and improvement of sector performance.

4. PROMISING APPROACHES

35. All ESAs were asked to provide a summary description of approaches and projects which they consider promising in relation to integrated water resources management. The result is very interesting and may help others to refocus their own activities. The wide range of examples shows that WRM is indeed a broad field. It also shows that ESAs are at different levels of development when it comes to practical implementation of the general consensus derived in Dublin and Rio.

Box 9 ***Lessons from the Water Decade***

The lessons learned of the past Decade are that technical solutions alone cannot provide the world's population with safe water supply and proper environmental sanitation. An integrated management of the water resources is needed including technical, institutional, managerial, social and economical aspects. The new approach for sustainable water supply and sanitation depends on local involvement, local solutions and local knowledge within the framework of an overall water and natural resources planning.

(I. Andersson et al, 1991)

36. Some activities have already been in progress for a long period of time, such as the establishment of database systems. Others such as gender specific approaches in WRM, treating water as an economic good, and WRM at local level are in a very early stage of development. Furthermore, it is not possible to judge from the summary description the value of the approach without a more in-depth review. Therefore, the information provided here should be used with caution as further analysis is needed to establish the long

term sustainability, feasibility and impact of the approaches. Within this section a summary is provided of the main promising approaches indicated by the different ESAs.

4.1 Development of a water policy and a legal framework

37. Out of a total of 79 projects indicated by 22 ESAs, 16 deal with aspects of policy formulation. This issue is particularly addressed by ADB, Austria, DANIDA, Germany, FAO, IDB, Japan, NORAD, ODA, SDC, SIDA, UNDP, USAID, WMO and the World Bank.

38. DANIDA mentions the Uganda action plan for developing a framework for integrated management of water resources at local, national and international levels. This plan, which is also receiving support from SIDA and NORAD, was established through support to the Water Development Department of the Ministry of Water, Energy, Minerals and Environment Protection. It follows a comprehensive but not gender specific approach which includes: linkages between land and water use, capacity building and development of data base systems and monitoring schedules. The plan ties in well with the comprehensive integrated approach indicated in the Delft Declaration (Alaerts, et al, 1991) and the Dublin Statement, an approach which is now actively pursued by several ESAs and particularly the World Bank and UNDP.

39. UNDP has initiated a programme on capacity building for water sector development together with UNDDSMS and the World Bank. This programme indicates national water sector assessments as a necessary first step. As indicated in section 2, the World Bank is in the process of establishing a WRM strategy which supports the role of national agencies in formulating national frameworks for WRM. FAO is also strongly supporting this area and establishing guidelines for water policy formulation. Austria is assisting the Burundi Government to obtain sustainable use of water-resources through development of a legal and institutional framework and establishment of a competent institution to guide overall implementation of a national plan and serve as an information service centre. SDC provided support to the establishment of a water resources plan for the Laikipia district in Kenya in the late eighties. This plan proved an effective tool to overcome competing interest for the use of water for irrigation, livestock and drinking water.

40. The IDB has initiated support to the state government of Sao Paulo, Brazil, in instituting legislation on state water resources policy to introduce the "users pay" principle. IDB indicates a need for a study on the financial and environmental impacts of a system of water extraction and effluent charges.

41. The positive effect of national capacity building is shown in the support NORAD has provided to the National Co-ordination Unit in Zimbabwe. This NCU has effectively strengthened the implementation of the country's Master Plan for rural water supply and sanitation. The NCU has also established a working group on gender to work on a strategy to involve more women in water projects. This group has analysed a field sample of rural water supply projects and made several recommendations for a better gender approach.

42. Several cases are presented of very recent projects, following comprehensive approaches such as the German-supported project to formulate a water master plan and inter-institutional task force for the State of Rio de Janeiro in Brazil. This includes key issues such as legislation and water pricing and is planned to take ten years. Germany also supports an eight-year project in Jordan to formulate a policy to regulate and control the use of water and to reduce water loss and pollution. Another recent project concerns World Bank assistance to the Government of Algeria in implementing demand management in urban areas and

the development of integrated land and water management. It is assumed that while management integration is workable at the national level through planned dialogue, this will be more difficult at the local level under the present institutional arrangements. The proposed strategy therefore includes the development of environmental management offices. Establishment of environmental authorities or offices is also brought forward by other ESAs, including SIDA, through support to Tanzania and Nicaragua.

4.2 Water resources assessment and data base development

43. Water resources assessments (WRA) have a long history and their necessity was already clearly established in the Mar del Plata Action Plan in 1977. The 1991 WMO/UNESCO report on Water Resources Assessment states that WRAs are essential for government policies and plans as these have to be based on comprehensive and reliable water data if sustainable water development is to proceed.

44. An interesting approach to WRA is indicated by the Dutch government through its support to Yemen. The main purpose of this project, which started in 1982, was institutional development. A national water resources information centre was established. This centre now has experienced professionals who can provide information on water resources. They are operating three monitoring networks and co-operating with responsible authorities to provide WRA studies. It is not clear from the information whether the staff has adequate expertise on socio-economic aspects. A similar institution-building approach was followed by WMO in a UNDP-funded project to establish the capacity of the Water Resources Bureau in Papua New Guinea.

45. WMO and FAO mention the development of different information networks and data centres as being promising. This includes: i) the WMO-supported project to develop the African Centre of Meteorological Applications for Development which is being supported by several ESAs; and ii) the FAO co-ordinated Global Water Information System, a database on water resources and water use for rural development.

4.3 Water catchment protection and basin management

46. Water catchment protection and water basin management is an area in which France, DANIDA, NORAD, CIDA, SIDA, WMO, the World Bank and ADB indicate promising projects. Comprehensive approaches to watershed management and land rehabilitation are promoted by IDB in Chile, Guatemala, Honduras, Brazil, Mexico, Venezuela and the Dominican Republic. These programmes encourage soil conservation and restoration of quality of flow through a combination of agroforestry, reforestation, extension, training and environmental education. Some projects seem to use a participatory approach, but its effectiveness and gender specificity cannot be judged from the provided data. The information is generally focused on what is being done, rather than how. The SIDA-supported project in Tamil Nadu, India, promotes conservation of water resources and reduction of run-off through different practical measures which are implemented by poor community groups. As a result, these groups reduce goat breeding and so contribute to the conservation of the forest. Long term sustainability of the approach still has to be proven.

47. Establishment of a river basin action plan and water boards is another type of programme which is receiving support from different ESAs. The water basin approach is well established in France and French expertise supports projects in several countries. The World Bank-supported project in Chile helps

the government to operationalise its new water resources management policies and supports a river basin management initiative. This will contribute to a more rational use of water resources and establish a regulatory framework for resolving conflicts. It will include watershed protection and waste water treatment.

48. DANIDA is supporting the establishment of an action plan for the Upper Srepok Basin in Vietnam. This project will give an overview of development opportunities and constraints and includes: energy studies, environmental impact assessments, review of agricultural practices and economic developments; and the development of WRM guidelines for short, medium and long term activities. ADB supported the comprehensive Songkhla Lake Basin Planning Study in Thailand which included institutional support to the office of the National Environmental Board and resulted in a national resources development framework and a socio-economic development strategy for the lake basin. NORAD supported the development of a Water Board and a river basin office to manage the Pangani river basin in Tanzania. FAO is also emphasizing capacity building for river basin management in a project in Indonesia.

49. An interesting component presented by Germany is capacity building for water monitoring in a project to enable Companhia de Tecnologica de Saneamento Ambiental (CETESB) in Brazil to monitor the water quality of the river Tiete.

4.4 Management at the lowest appropriate level

50. The trend to greater community involvement in decision making and management is evidenced in several of the projects. These projects focus primarily on water supply and far less on WRM and more on construction than on management. The Australian-supported Lombok rural water supply project for example applies community surveys undertaken by the communities themselves as a basis for developing a village water supply development plan. This is then followed by construction of water supply facilities. No indication is provided on strategies to establish management capacity at local level.

51. Few ESAs put special emphasis on management. CIDA and UNICEF are supporting a project in Uganda which includes establishment of an enabling environment for community management through advocacy, policy development and legislation. CIDA supports a similar project in Ghana which has developed from an engineering approach to a more integrated approach enabling the communities to acquire and manage water facilities. This is part of a ten-year rural water supply strategy which is being developed by the Government of Ghana with support from the World Bank. CIDA intends to concentrate future efforts on institutional development and capacity building at the local level.

52. Although the projects listed primarily address provision of water supply systems, they may hold important lessons for the broader water resources management issue as well. UNICEF is supporting a project in India on integrated water resources management, which combines environmental rehabilitation with health improvement. Its positive results are attributed by UNICEF to the combination of poverty reduction, eco-restoration, women's participation and inter-sectoral co-ordination. UNICEF indicates other positive examples of community management of water supply systems in Sudan, Honduras and Bangladesh.

53. Involvement of users in financing, operation and maintenance and protection of resources is part of the Italian-supported projects in Mali and Niger. Awareness raising campaigns, hygiene education and the development of water committees are key components of these projects. Italy has also pioneered the formulation of the Primary Environmental Care (PEC) concept which was endorsed by OECD/DAC in 1989

and is now also being promoted by UNICEF. The elements of PEC are: meeting basic needs, protecting and optimally using natural resources and empowering communities in order to promote environmentally sustainable livelihoods. This concept clearly identifies community participation as crucial for sustainable development and strongly supports the need for an enabling environment in support of community management.

54. Few projects present clear gender specific approaches. Involvement of women is indicated by the majority of ESAs and general guidelines are being followed on this aspect in a number of projects. In 1992 the IDB started, for example, to introduce women's participation in its projects by acknowledging them as economic decision-makers. UNICEF also indicates a strong emphasis on women.

55. More recently in the SIDA supported project on social forestry in India, applying a gender approach has become an issue. This approach emerged when it was found that both men's and women's behavioral changes are needed to ensure that decisions, work and benefits are more equally divided and projects do not have negative impacts for certain groups or affect development negatively over a longer time. CIDA strongly emphasizes gender in its support to the Riseralda river basin project in Colombia, to create more awareness and recognition that gender differences within communities and households need to be taken into account when developing project management and implementation strategies.

4.5 Abatement of pollution

56. A few ESAs bring forward approaches which focus on reduction of pollution. The improvement of water and sanitation infrastructure in Belo Horizonte with help of an Italian NGO is indicated as a water resource protection intervention. USAID is supporting a project in Jordan, which includes protection of drinking water from agricultural and industrial pollution through water quality monitoring, prevention measures and river clean-ups.

57. IDB is supporting sewage treatment in Barbados which includes waste water collection, treatment and disposal, and strengthening of Barbados Water Authority to protect the marine environment. Sewage collection and treatment projects in Tunisia and China are supported by Germany to protect water resources and also conserve water by partially reusing it. Japan indicates support to waste water treatment in Indonesia and improvement of waste water and waste disposal to protect the Yamuna river in India.

4.6 Efficient water use

58. ODA provides support for data collection to ascertain the extent of unaccounted for water and leakage and the domestic use of water in the San Luis Potosi area in Mexico. This will provide the basis for more efficient water use. The project also includes a study of the quality and nature of the waste water, with a view to reusing it in agriculture.

59. A comprehensive approach to improve irrigation was followed in the Italian supported Chambo-Guano project in Ecuador. In this project, the Ecuatorian Institute of Hydraulic Resources (INERHI) was assisted in addressing common problems in irrigation schemes. As part of the project an operational manual for effective irrigation schemes was established. INERHI is presently continuing the project on its own. USAID is supporting a project in Morocco which promotes improved irrigation management through

an integrated programme of policy analysis, technology transfer, research and demonstration and institution and private sector strengthening.

60. Spain is supporting a demonstration and training farm in Syria where different irrigation systems are being tested for their water saving potential. SDC supports an applied research project within the framework of a multi-donor programme to introduce improved on-farm water management concepts, addressing the levels and responsibilities of the institutions involved, improved user participation in decision making related to water management as well as farming techniques.

61. FAO supports efforts to improve irrigated agriculture through advisory support and dissemination of computer software (CIMIS). Case studies will include information on the water saving potential of improved irrigation systems now being introduced in Cyprus, Jordan, Brazil, Morocco, China, Pakistan and Yemen.

5. CO-ORDINATION

5.1 Co-ordination at global and regional levels

62. The Water Supply and Sanitation Collaborative Council is the major platform for ESA co-ordination which was indicated. Membership of the Council includes UN organisations, a wide spectrum of other ESAs, and governmental and non-governmental organisations. The Council meets every two years and has an independent secretariat housed at WHO headquarters, financed jointly by UNDP and other ESAs. It plays an important role in furthering the debate on key issues in the water and sanitation sector. However, only persons involved in the water supply and sanitation sector usually participate in Council meetings and those from other sectors important to WRM, such as agriculture, are generally not strongly represented.

63. The Council is also included in the 1993 report of the first session of the Committee for Natural Resources of the United Nations Economic and Social Council which indicates that 21 organisations within the United Nations system are involved in WRM. These are listed in Annex 2 with their main areas of involvement. The report indicates that there is a complex relationship among the organisations of the UN system in the field of water resources. The mandates of these organisations include grey areas which overlap and sometimes lead to duplication. At the same time, they bring a variety of perspectives and experiences to the field, offering opportunities for bringing about complementary approaches in a synergistic manner. The report describes various co-ordination mechanisms at the global level, the Administrative Committee on Co-ordination (ACC) Intersecretariat Group for Water Resources, the Steering Committee for Water Supply and Sanitation and the Water Supply and Sanitation Collaborative Council.

64. The ACC Intersecretariat Group was established in 1979 to: (i) co-operate in the monitoring of the progress made by Governments in the Mar del Plata Action Plan, (ii) promote co-operation and joint planning of the water-related programmes of the UN system, (iii) assist in co-gordinating the water-related activities of the UN system at country and regional levels.

65. The Steering Committee for Water Supply and Sanitation evolved from the Steering Committee for Co-operative Action for the IDWSSD which was established in 1980. It is designed to promote water

supply and sanitation at the global level; assess needs and monitor progress towards the achievement of national, regional and global objectives and ensure effective consultation among the organisations of the system and provide a link to the Collaborative Council. The Steering Committee has a close relationship with the ACC Intersecretariat Group and normally has its meetings in conjunction with ACC meetings.

66. Examples of regional co-ordination mechanisms include the Interagency Task Force on Water for Asia and the Pacific established by ESCAP in 1978. This Task Force meets twice a year to co-ordinate water-related activities undertaken in the region by the organisations concerned. Another example is the Interagency Group for Water Resources Activities in Africa established by ECA in 1992. The Group's aim is to co-ordinate and harmonise water resources activities in Africa at the subregional and regional levels; promote collaboration and joint activities; and gather, compile and disseminate information on water resources activities in Africa.

67. The main co-ordination mechanisms which are used by the bodies indicated above are consultations and meetings, including Dublin and Rio. These meetings provide opportunities to discuss key issues with a broader group of participants, including, in particular members from assisted countries.

5.2 Co-ordination between and within ESAs

68. Some OECD countries such as the Nordic countries have more intensive co-ordination amongst themselves through regular consultative meetings on key issues related to water supply and sanitation. These meetings may sometimes be of a more formal nature, as for example the meeting on the Freshwater Initiative in Copenhagen, in 1991.

69. Another example of a co-ordination group is AGUSAN in Switzerland. The members of this interdisciplinary group are collaborators in the following Swiss based institutions: IRCWD, Helvetas, SKAT, SFIT Lausanne and Zurich, WHO, Zurich University and SDC. The group has proven to be a most effective clearing-house for sector related issues.

70. Mechanisms to improve co-ordination are also taken within agencies. The World Bank has established a water resources thematic team which acts as a catalyst to implement the Bank's Water Resources Policy and to assist the Country Departments. This enhances the dialogue within the Bank on WRM.

5.3 Country level co-ordination

71. At the country level, the picture seems to indicate that co-ordination at best is interpreted as consultation. A few ESAs have made clear in their policy documents that country-level co-ordination of ESA inputs is the responsibility of the assisted government. Such an approach would respond to the decentralisation principles proposed in Dublin and be a first condition to avoid the situation that similar projects in a country are being implemented along different strategies because they are supported by different ESAs. Some examples do exist of more intense collaboration at the country level, including the joint financing of projects and meetings.

72. The Uganda meeting referred to in Box 7 shows that collaboration at the national level can provide a very good platform to discuss key developments in WRM and develop a set of co-ordinated programmes, thus adding to the efficiency of ESAs' support activities.

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Annex 2

Activities of the United Nations system in water resources

Twenty-one Organisations within the United Nations system, including the regional commissions, are active, to various degrees and through various means, in the field of water resources.

United Nations

United Nations Secretariat, Department of Economic and Social Development

United Nations Children's Fund (UNICEF)

United Nations Development Programme (UNDP)

United Nations Environment Programme (UNEP)

United Nations University (UNU), Programme on Natural Resources in Africa

Economic Commission for Africa (ECA)

Economic Commission for Europe (ECE)

Economic Commission for Latin America and the Caribbean (ECLAC)

Economic and Social Commission for Asia and the Pacific (ESCAP)

Economic and Social Commission for Western Asia (ESCWA)

United Nations Centre for Human Settlements (HABITAT)

Office of the United Nations Disaster Relief Co-ordinator (UNDRO)

International Research and Training Institute for the Advancement of Women (INSTRAW)

World Food Programme (WFP)

Specialised agencies and related organisations

Food and Agriculture Organisation of the United Nations (FAO)

United Nations Educational, Scientific and Cultural Organisation (UNESCO)

World Health Organisation (WHO)

World Bank

World Meteorological Organisation (WMO)

United Nations Industrial Development Organisation (UNIDO)

International Atomic Energy Agency (IAEA)

Involvement of the organisations of the United Nations system in the field of water resources

Organisation	Agricultural water use	Drinking water supply	Industrial water use	Hydro	Naviga-tion	Flood control	Drought management	Multi purpose
Secretariat	X	X	X	X	X	X	X	X
UNICEF		X						
UNDP	X	X	X	X	X	X	X	X
UNEP	X	X	X			X	X	X
UNU	X	X	X	X	X	X	X	X
ECA	X	X	X	X	X	X	X	X
ECE	X	X	X	X	X	X		X
ECLAC	X	X	X	X	X	X	X	X
ESCAP	X	X	X	X	X	X	X	X
ESCWA		X				X		X
UNDRO						X		
INSTRAW	X	X		X				X
WFP	X	X				X	X	X
FAO	X					X	X	
UNESCO				X		X	X	X
WHO	X	X	X					X
World Bank	X	X	X	X	X	X	X	X
UNIDO			X	X				X
IAEA	X		X					X

ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT

DEVELOPMENT CO-OPERATION DIRECTORATE

DEVELOPMENT ASSISTANCE
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GENDER AND WATER RESOURCES MANAGEMENT

(NOTE BY THE DAC EXPERT GROUP ON WOMEN IN DEVELOPMENT)

This paper was prepared by Carolyn Hannan-Andersson on behalf of the DAC Expert Group on Women in Development. It is circulated for INFORMATION to the DAC meeting on water resources management to be held on 10-11 May 1994.

Table of Contents

GENDER AND WATER RESOURCES MANAGEMENT

I. OECD/DAC Initiatives on Gender and Water Resources Management

1. The "Guiding Principles to Aid Agencies for Supporting the Role of Women in Development" were adopted by OECD/DAC in November 1983, and revised in 1989. These principles clearly state that the *"overall objective of sustainable development is only attainable when needs and interests of both women and men are fully recognised in the planning and implementation of projects and programmes."* To achieve this goal *"special attention must be given to the situation of women in their respective societies as well as the role they play in their communities."* It is emphasized that women should be seen as a development resource and as active participants in development rather than as passive recipients. In the context of water resources management it is also important to note the emphasis given to looking at the roles and needs of women in large-scale infrastructure projects and programme aid. (See Annex 1.)

2. An **Expert Group on Women in Development** has been established within OECD/DAC to facilitate the achievement of the goals set. Within this Expert Group an informal working group, led by Sweden, is developing knowledge on gender and water resources management (WRM) to guide policy and programme development. A **workshop** was organised in December 1993 on the topic: "Gender and Water Resources Management: Lessons Learned and Strategies for the Future". The workshop is documented in detail in a forthcoming two-volume report. This report is largely based on the outcome of the workshop papers and discussions. (See list of papers presented in Annex 2.)

II. Critical Gender Issues and Strategic Inputs

3. An important overall conclusion arising from the workshop was the value of a gender approach, i.e. a focus on both women and men and the relations between them, rather than a separate and exclusive focus on women. Women are not a "special interest group" whose needs can be met with separate on-the-side inputs by "women in development" specialists. This goes against the basic principles developed by OECD/DAC which state clearly that women should be integrated into all programmes and that all personnel have responsibility for working toward this goal.

4. The value of a gender perspective is that it ensures that women are not simply viewed as an inherently "vulnerable group" -- categorised alongside children, handicapped, minorities and seen as passive beneficiaries -- but that they are seen as actors and stakeholders in the development of WRM. A gender approach also facilitates an understanding of the causes of the subordinate and vulnerable position of women, and the difficulties they face in carrying out their economic and social roles. Viewing and treating women in a vacuum results in marginalisation. Women's roles and realities have to be placed in a broader context alongside the roles and realities of men if women's roles are to be identified, recognised and given value in planning and decision-making.

Box 1: Gender -- some definitions

A gender approach involves a focus on both women and men rather than an exclusive focus on women.

Gender roles refer to the socio-culturally defined roles women and men have. There are also gender-differentiated responsibilities as well as differentiated access to and control over resources and decision-making. As a result women and men also have different needs.

Gender relations refer to the social relations between women and men -- those relations which are not related to biologically determined differences but to socio-cultural factors, and which are thus context-specific and changeable.

Gender-aware planning requires that consideration is given to all the above factors so that both women and men are given possibilities to influence, participate in and benefit from development.

5. Involving women as well as men is not only desirable for improving women's situation -- solving practical problems and ensuring increased equity between women and men, but it is also increasingly apparent that it is essential for effective development, utilisation and management of water resources. This has long been obvious in relation to domestic water supply and sanitation programmes. However, it is increasingly clear in relation to overall river basin management and specific areas such as wetland development and irrigation programmes.

6. While there is increased awareness within natural resources development and management generally that sustainable development cannot be achieved without involvement of both women and men, gender has not yet been established as one of the most important socio-economic factors to be taken into account. There is still a significant lack of understanding of the roles and responsibilities of women in all areas of natural resources management, including water resources. In addition, most planners lack the knowledge, skills and tools necessary to incorporate gender analysis into their programmes. Concrete involvement with gender issues is still too dependent on individual awareness and commitment.

Experience gained

7. There has been a great deal of variation in the amount and type of attention given to women or gender in WRM. External support agencies (ESAs) have given considerable attention to gender in some sectoral uses of water resources, for example in domestic water supplies and sanitation (WSS) and to a lesser extent in irrigation programmes. However, the broader focus on WRM has yet to be influenced from a gender point of view. There has been too little of an integrated holistic approach and too much sectoralisation of attention. There has been negligible exchange of knowledge and experience across sectoral uses.

8. Some common trends can be discerned across the different sectoral uses of water resources. A major failing in all areas is the lack of attention to gender at overall policy level. Policy statements on gender are very vague and over-emphasize women's domestic roles rather than their productive roles. Attention to women tends to be in the form of "add-ons" rather than as an integral part of policy

development. The workshop raised the question why, despite the rhetoric on gender -- for example in domestic water supplies -- there has been so little impact on overall policy and strategy development. And why, despite the efforts made at operational level, there is still so little evidence of impact. One of the main reasons is the lack of clarity in relation to objectives and expected outcomes.

9. In this policy context it is not surprising that strategies also tend to be underdeveloped, involving ad hoc activities or interventions. Overall objectives have not been translated into comprehensive strategies which include defining indicators and developing effective monitoring mechanisms. There has been little monitoring of progress and feeding back of results into further development of policy and strategies. Despite the stated objectives in policy documents, documentation on projects and programmes does not contain information on achievements and constraints in relation to increasing the involvement of women. The lack of attention to gender in documentation -- even when there are activities underway -- gives reason to believe that the actual importance placed on gender is, in reality, not great.

10. The studies presented at the workshop gave evidence of the gap between the rhetoric of stated objectives and the reality of implementation -- both those focusing on particular programmes as well as those dealing with the work of specific agencies. Even where agencies have well-developed general policies on gender and the goal of "mainstreaming", implementation in relation to WRM has been very uneven.

11. Women are not usually taken into account in an operational manner in the design of projects. When women are mentioned at all in project proposals this is often not followed up. Women are seen as users of domestic water and as a pool of volunteers with unlimited resources of time and labour. They are seldom seen and treated as managers of water resources. It is often taken for granted that men have the public roles at community level, such as management and public decision-making. Women are presumed to only have domestic roles -- related to collection and use of water, disposal of household waste and care and education of children. This has led to a welfare focus in relation to women and WRM which restricts their participation to "reproductive" activities, while giving all the more "productive" and formal management roles -- involving skills development and monetary rewards -- to men. Gender-specific research increasingly proves that rationales to exclude women from public spheres on the ground of tradition are often based on fallacies. Study of the management of existing systems in many societies reveals that these are based on a shared responsibility between women and men -- with each group having its own responsibilities.

12. There is increased awareness, at least in relation to domestic water supply and sanitation, that participation of women must also involve their involvement in planning and decision-making. Strategies to achieve this are, however, underdeveloped. Involvement in consultation is one means to ensure a voice in planning and decision-making. Women need training and support to enable them to take part in consultation and negotiation processes. In some areas of WRM the organisational and institutional environments are dominated by men, for example the user associations established in irrigation schemes. It is, however, increasingly recognised that it is both positive for women and essential for good management to have women represented.

Box 2: Need for women's involvement in user associations

In an irrigation scheme in the Philippines the initial membership in the user association was overwhelmingly male since membership was based on "head of household" status. However, over time, it became clear that because of their deep involvement in irrigated production, women should also take part in the user association meetings. The need for their involvement was made all the more essential by the fact that women controlled the household budget. The association encountered problems in collecting fees if women were not involved. Without women's participation the financial obligations of households could not be guaranteed.

(Illo, 1988, quoted in Cloud, 1993)

13. Experience has shown that some of the efforts made to gain equal representation of women on bodies such as water committees has had little impact on their access to decision-making since these bodies tend to represent the "water users" but not the "decision-makers". Real decisions are made in other bodies were women are not represented.

Impacts of gender-blind planning and management

14. There is increasing evidence of gender-blind interventions in WRM, for example dam interventions and irrigation schemes. Communities and households may be displaced, forced to change their livelihood activities completely, or lose access to resources. These changes have gender implications since women and men make different contributions to household livelihood. A change from a women's crop to a male-dominated crop can have critical impacts on households. Failure to take gender roles and responsibilities into consideration can lead to displacement of women. Undervaluing of women's roles, uses and needs can lead to development interventions at the expense of women's interests, for example by promoting the commercial interests of men at the expense of women's subsistence needs. Conservation policies (in relation to wetland and reservoir catchments) can also restrict access to land and water for women because their uses are not recognised or valued.

Box 3: Negative impacts of gender-blind planning on women

Before the construction of Lake Kariba, most of the Zambezi valley communities (both women and men) were involved in flood recession agriculture and traditional fishing -- using traps, baskets, hook and line, and weirs. The construction of the dam disrupted the traditional pattern of resource use. After the dam was filled, artisanal and commercial fishing was developed to absorb some of the displaced population. Since men were regarded by the planners as the "bread winners" and the previous roles of women were not recognised, the men became the main beneficiaries of the new development. The set-up of the Lake Kariba artisanal fishery which is based on temporary villages, gill nets, licences and contracts, has in effect, marginalised or sidelined fisherwomen and reduced the participation of women in fish processing and marketing. Women have difficulties in living away from home in the temporary villages, and face constraints in obtaining contracts and licences.

(Matiza, 1993)

15. The impact of gender-blind planning is clearly negative for women. However there is increasing evidence of negative impact on overall planning and success of interventions. Failure to appreciate the diversity of water users, uses and institutions, combined with non-consultative processes of land and water allocations, have led to divergence of plans from reality, under-performance of agencies and conflicts over water.

16. Even where efforts have been made to take women into consideration in planning and development this has often not been based on an adequate gender analysis of activities, responsibilities and needs. These efforts have often been limited and marginal. They have been based on a complete lack of understanding of women's productive roles. Women are not seen as economic actors in their own right but are seen as a vulnerable, marginal group. Many such inputs are "token projects" to satisfy donor requirements to pay attention to women. This highlights the need for donors to make more "responsible" demands for inclusion of a gender perspective into WRM programmes.

Box 4: Inadequate efforts for women

About 90 per cent of the employment generated through the Kafue Flats and Bangweulu Wetland projects is taken by men. Although the role and participation of women was considered when the projects were designed, the result was the establishment of women's clubs and training courses in jam-making, sewing and vegetable gardening. Most of these activities have little to do with the wetland and are marginalised from the main activities of the projects. This approach does not adequately address gender issues within wetland. (Matiza, 1993)

A similar situation is seen in relation to irrigation. Often efforts made for women are totally removed from the irrigation system. For example in the Maha Weli System in Sri Lanka the solution for assisting women was the establishment of an envelope making project. Lack of adequate marketing assessment led to the director of the irrigation agency having to "save" the project by generously buying all the envelopes. (Zvarteveen, 1993)

Even where the efforts made are more directly related to the irrigation system they are marginal in nature. In a Burkina Faso project, despite women's labour contributions, they were not formally involved in the co-operative organisation. Rather than addressing women as co-farmers and stakeholders in the project, a separate project was designed for them. Three thousand women were organised in groups of around 40. The women received as little as 12ha or 1 per cent of the total command area to be used for cultivation of vegetables. (Van Koppen, 1990, quoted in Zwarteveen, 1993)

Constraints identified

17. The major constraints identified in the analysis of experience to date are of three different types. Firstly there are constraints related directly to gender roles and relations, such as women's subordinate position, lack of access to and control over resources, and lack of self-confidence. These require inputs such as improved understanding of gender roles and needs through gender analysis, increased sensitisation of men on the importance of women's contributions and the need for their involvement in planning and

decision-making, and positive discrimination measures to overcome women's lack of self-confidence such as specific training inputs targeted at women.

18. A second group of constraints stem from lack of awareness of gender issues and failure to give adequate consideration to gender. For example, failure to utilise gender analysis (and thus lack of knowledge of the roles, responsibilities and needs of both women and men) and the failure to disaggregate statistics. Inputs required here involve gender sensitisation and training; development of gender analysis and planning methodologies and tools; development of effective indicators and monitoring systems; and establishment of accountability within organisations in relation to gender.

19. A third type of constraints is related to inadequacies in strategies and methodologies in WRM generally. Difficulties in including a gender perspective arise when there is an over-emphasis on technical aspects and a neglect of social aspects. Participation of women is also difficult to achieve when general strategies and methodologies for participation are poorly developed. The lack of communication between technical staff and social-scientists (including gender specialists) should also be included here as a constraint.

20. Increasing attention to the social aspects of WRM will be crucial to attaining more equitable influence on planning and management for women, as well as greater success of interventions. The linkages with people are easier to understand and tackle when the inputs are located close to the people involved, e.g. the installation of a handpump in a village. It is more difficult in river basin management to see impacts on people living far away. It is especially difficult to see impacts on women when women's uses of water are not visible, or when visible are simply seen as "social" and "non-productive".

21. The view of community participation is still too narrow within WRM. In practice it normally consists of community mobilisation and establishment of village-level maintenance committees or user associations. In the context of utilisation and management of scarce resources, the concept of participation needs to be broadened to include the aspects of consultation and negotiation. There are important gender implications since women have very little voice in most communities. Support mechanisms must be developed to facilitate an increased role for women.

22. Some new thinking is also required in relation to the concept of community. Above all there is a need to do away with the myth of the "equitable community". Most communities are based on strong principles of hierarchy and there are substantial inequalities based on class, age, ethnic groups, and, not least, gender. These must be identified and taken into account. It is also important to "deconstruct" the community -- to go beyond the community to identify the household and individual levels. It is only through doing this that gender roles and relations become visible.

23. Male resistance -- both in communities and in support agencies -- is often given as one of the major causes of the gender bias in WRM. This is often stated too simplistically. Male resistance -- especially within agencies -- may stem from a lack of understanding of gender issues. There is an onus then on social scientists to increase knowledge and skills among all those working with WRM. Interfaces between WRM and gender approaches must be identified. Gender interests and needs should be translated into WRM language. The role of the gender specialist is not simply to point to negative impacts but, on the basis of good knowledge of WRM, to find creative solutions to the identified problems.

24. The major areas for further development in relation to gender and WRM include:

- -- advocacy on the importance of gender in WRM;
- -- policy development in relation to gender;
- -- comprehensive strategies with clear targets and outcomes;
- -- improved monitoring of the gender perspective within programmes;
- -- tools such as disaggregated statistics and indicators;
- -- competence development through sensitisation and training;
- -- accountability within agencies;
- -- a more holistic approach to gender and WRM;
- -- exchange of experiences between different water uses;
- -- development and exchange of "best practices";
- -- methodology development to bridge the gap between macro and micro levels and work with socio-cultural aspects;
- -- improved communication between social scientists and other categories of personnel in WRM.

III. Need for an Alternative Approach

25. The workshop identified a number of important inconsistencies -- between micro-macro levels, between rhetoric and practice, between technical/economic and social aspects, and between sectoral approaches and integrated approaches. In addition, there are inconsistencies arising from the sectoral approaches of governments and external support agencies as opposed to the holistic needs-based approaches of communities, households and individuals. These inconsistencies are further highlighted by the communication problems between those working with more technical or economic approaches to WRM and those working to include the communities and to ensure equitable access to decision-making over resources. When combined with the dynamic changes taking place in WRM, these inconsistencies make clear the need for an alternative approach to gender and WRM.

The changing context of water resources management

26. It is necessary to understand the changing context of WRM in order to be able to utilise the opportunities presented and identify risks from a gender perspective. The change from a perception of water as a "free good" to the perception of water as a finite, vulnerable and non-substitutional resource -- a resource which is indispensable for human life, dignity and well-being -- has important implications for future development and management of water resources. The technical "disconnected" view of water which has led to unjust allocations, abuse of water resources and resulting environmental problems is no longer acceptable. The new vision of WRM has to be integrated with overall development objectives of society and the social and environmental contexts in which water development takes place. It will require considerable "new-thinking" in relation to technical and organisational arrangements. This will involve a rethinking of objectives and a reduction of the "compartmentalisation" within the sector and the lack of linkages to social development. It will be extremely important to influence the dynamic changes taking place from a gender perspective.

27. Warnings have been raised that, because of lack of recognition of women as users and managers, the changes underway will do very little to enhance women's powers of WRM, and could, in fact, actually undermine their roles. Care must be taken to ensure that the changes underway do not displace women

from management roles and positions of influence they may already hold. Despite references to empowerment in many guiding documents, the motivation for a focus on women is still very instrumental. There are risks involved from a gender perspective if the narrow engineering focus is simply replaced with a narrow economic focus.

Gender statements in guiding documents

28. The guiding documents from recent international conferences which have contributed to the changing context of WRM have all given some consideration to women. However this has been far from adequate. The statements from the Delhi and Dublin conferences emphasize new roles in management for women -- in planning and resources mobilisation -- at all levels. There is a call for changes in institutional arrangements to make possible women's more active involvement in decision-making and implementation. However, both these statements have yet to be translated into practical inputs at policy and programme levels.

29. The document from the Rio Conference on Environment and Development, **Agenda 21**, is an important document since it is the only existing globally discussed and agreed document on resource management. However, the attention given to women is lacking in many respects. This results partly from the fact that the bias in the coverage of water is macro-level, technological and supply-oriented. The weak discussion on "water uses" results in the invisibility of "users". The failure of the document to go beyond the community level means that the important gender implications at household and individual levels go unmarked. There is no disaggregation of data. The document is also based on the premise that it is possible to assume homogeneity of the community -- something which the inclusion of a gender perspective belies. In terms of the attention given to women, it was felt that the use of a gender perspective rather than a separate focus on women would have been more constructive. Women are treated in a separate chapter (Chapter 24) which results in marginalisation. Gender should, ideally, have been integrated throughout the document since there are gender implications in all aspects covered. Women should be seen as the dynamic actors and stakeholders they are in relation to the different areas of WRM.

30. Despite these failings, **Agenda 21** is still an important document from a gender perspective. Its value lies primarily in the fact that it emphasizes women's management roles. Like the Delhi and Dublin statements, it calls for increased roles for women. It acknowledges women's roles in natural resource management at local level and stresses the need for more women in senior positions, shaping and implementing policy and involved in training on environmental quality and conservation.

The new principles

31. All of the new principles for WRM being developed have gender implications. Some involve new opportunities; others involve constraints or risks. The workshop emphasized the need to influence these commonly accepted principles:

a) **Overriding strategic principles**
Water as an economic good
Management at the lowest appropriate level

b) **Management principles**
User orientation
Demand management
Capacity building and institutional development

c) **Roles of government and external support agencies**
Government as promoter or provider
Aid co-ordination

32. The principle of **water as an economic good** raises some concern from a gender perspective. Much current thought is devoted to devising ways of valuing the economic rather than the health and social benefits of water. One reason for this is that investments in the sector will be more likely to be forthcoming if they can be justified in terms of cost-effectiveness and efficiency. However, ESAs must take responsibility to ensure that economic cost-effectiveness and efficiency aspects do not have negative effects on social outcomes, and particularly on the situation of women.

33. The principle can lead to seeing water more as a "commodity" than a resource, with negative implications for women given their constraints in relation to privatisation, markets and the formal economy. Similarly, the linking of water resources to rights can involve serious risks for women. Women are notoriously underprivileged in relation to rights and ownership, and over-emphasis on these aspects -- without an adequate gender perspective -- may underplay women's roles and lead to reduced access to resources.

34. The common division between "domestic" and "productive" water is a false one, and a dangerous one from a gender perspective. At household level, "domestic" water may be utilised for a variety of subsistence income-generating purposes commonly undertaken by women, for example, keeping of small livestock, beer brewing, brick-making, vegetable growing. Women must be seen as economic actors and resource managers. The economic value of "domestic" uses must be recognised.

35. There are also gender implications in relation to allocations between different sectors which will be based on calculations of "economic good" and are hence related to assumptions about what are "productive" and "non-productive" uses. Women's uses tend to be invisible or undervalued.

36. While the statements on **community management** are couched in the language of empowerment and equity, there is also considerable emphasis on efficiency, cost-effectiveness, ownership and rights. Social norms and women's subordinate position in many communities may make active involvement difficult, especially in planning and decision-making. A good knowledge base on gender is a prerequisite for securing women's involvement in management roles.

37. It will also be important that existing informal management systems are identified and utilised. In many such traditional "rules-in-use" systems women have had recognised roles. Unfortunately, there is a risk that these well-functioning systems may remain invisible because they involve "non-productive" uses of water. In many cases, there is more potential for women's involvement in such systems than in newly

instituted formal systems -- though this is not always the case. In each particular case, there is need for an adequate gender analysis of opportunities and constraints.

38. The management principles of **user orientation** and **demand management** could be positive from a gender perspective but would require gender-sensitive knowledge of uses and users. Since women's uses are often seen as "social" and "non-productive" they are often not visible to planners or given secondary value. There must be more emphasis on the value of the social good in uses of water resources.

39. **Capacity building and institutional development** must include gender sensitisation and training for all categories and levels of personnel. It must also include emphasis on gender research and development of gender analysis and planning methodologies.

40. Reduced roles for the state -- **promoting rather than providing** -- and more active roles for other agencies, such as non-governmental organisations, the private sector and user associations, does not necessarily mean increased access to decision-making for women. The economic crisis and resulting structural adjustments have played a part in the increased focus on market forces and private sector involvement. This gives rise to some hesitancies regarding possible impact on women given the increased focus on economic efficiency and cost-effectiveness. Changing roles need to be carefully planned, and impacts closely monitored.

41. **Aid co-ordination** will be essential to ensure a gender perspective -- co-operation between agencies and within agencies should be developed. Increased communication and co-operation between different categories of personnel should be encouraged to develop the competence, methodologies and tools necessary to facilitate better incorporation of both women's and men's needs and interests in programmes.

A framework approach

42. The workshop recommended a **framework approach** to dealing with the inconsistencies and the changing context of WRM. It was argued that the starting point must be the intersections -- areas of common ground between sectoral and community-based approaches and technical and social approaches. The "givens" or commonly accepted principles of WRM developed over recent years could provide the starting point for tackling the inconsistencies and constraints and for making the most of the opportunities the changes in the context of WRM present.

43. The framework (presented as a room document) should be seen as an instrument to tackle the interface between sectoral focuses and local needs. It is not intended as a guideline or checklist. It provides a frame within which to identify relevant gender issues and raise important questions in relation to each of the principles.

44. While still at a very initial stage of development, the framework clearly holds potential. There is a need for further development by both WRM specialists and gender specialists. The process of co-operation around the framework in itself may stimulate much needed closer interaction between disciplines.

IV. Recommendations to OECD/DAC on Gender and Water Resources Management

The workshop recommended that:

45. OECD/DAC as an organisation, and its individual Members, take on a **clear gender perspective in all work.** To facilitate this, emphasis should be given to programmes of gender sensitisation and training at all levels.

46. OECD/DAC Members take the necessary steps to **integrate a gender perspective in WRM policies and programmes.** Emphasis should be put on operationalisation -- utilising gender analysis methodologies and tools in accordance with OECD/DAC Guiding Principles -- to ensure gender-sensitive policy dialogue and programme development, implementation and monitoring.

47. OECD/DAC Members take note of the more specific recommendations given in the framework and **adapt, further develop and utilise the framework approach** in their work with WRM.

48. OECD/DAC Members **improve co-ordination** with partner country institutions, with other agencies and within their own agencies in relation to gender and natural resources management. Efforts should be made to document and exchange positive "best practice" experiences.

49. OECD/DAC Members make efforts to **further develop Agenda 21** from a gender perspective within their own programmes. It is also recommended that the Expert Group on Women in Development include the further development of Agenda 21 as a topic for a working group. The establishment of a network including participants from outside OECD/DAC was raised as a possible strategy.

50. OECD/DAC Members **develop gender training specifically tailored to the needs of WRM** and exchange experiences.

51. OECD/DAC Members give priority to research and development on gender in relation to **overall river basin planning and management.**

52. OECD/DAC Members give priority to **effective policy dialogue** with partner countries and institutions, using both equity and efficiency rationales, as a means of creating awareness of the necessity of a gender perspective within WRM.

Annex 1

Summary of OECD/DAC "Guiding Principles to Aid Agencies for Supporting the Role of Women in Development"

Goals and policies

Member countries are encouraged to:

- -- develop more precisely-defined and action-oriented objectives;
- -- explore the gender implications of their assistance;
- -- raise the issue in policy dialogue with recipient countries.

Practical strategies

Member countries are encouraged to:

- -- develop practical strategies required to implement the principles in their development co-operation programmes;
- -- develop specific guidelines for each sector.

Strategies recommended include:

- -- adequate knowledge base on access to and use of productive resources as well as the distribution of rights and responsibilities;
- -- consultation with and involvement of both women and men;
- -- sex-disaggregated data and development of relevant indicators;
- -- equal access to resources, services, education and training;
- -- utilising positive discrimination to upgrade women's skills and educational levels to ensure their full participation.

Institutional development

The guiding principles emphasize:

-- the responsibility for ensuring that women can participate in and derive benefits from development co-operation lies with all operational staff members;

-- the role of senior management is crucial.

Members are encouraged to:

-- develop staff competence in this area through training;

-- utilise special expertise as required to assist development of policies and strategies and to monitor progress.

Annex 2

List of Papers and Presentations from the Workshop "Gender and Development, Management and Utilisation of Water Resources: Lessons Learned and Strategies for the Future"

1. Papers

Sinikka Antila and Eero Kontula, "FINNIDA Experiences".

Silvia Cavalcanti Arrais, "Gender and Sanitation Programmes in Urban Areas".

Morag Bell and Margaret Ince, "Women Professionals in Water and Sanitation Development: The WEDC Experience".

Deo Binamungu, "Towards Gender-Responsive Planning in the HESAWA Programme: A Critical Review".

Kathleen Cloud, "Irrigated Water Management: A Gendered Analysis".

Diane Elson and Frances Cleaver, "Gender and Water Resources Management: Integrating or Marginalising Women?".

Norah Espejo, "Gender and the Management of Drinking Water Supply in Low Income Urban Communities in Latin America".

Irene Guijt, "Water and Gender on the Agenda: A Review of Water Resource Management and Gender Issues in Agenda 21".

Cecilia Kinuthia, d"Gender and Management of Water Resources in an Environment of Scarcity".

Fabiano Kwaule, "Gender and Peri-Urban Water Supplies in Malawi".

Jan Lundqvist, "General Introduction to the Concept of Water Resources Management".

Tabeth Matiza, "Gender and Wetlands Management: Issues and Challenges in Southern Africa".

Eva Poluha, "Gender, Water, Environmental Health -- An Inventory of SIDA-Supported Programmes".

Mayling Simpson-Herbert, "Gender and Management Issues in the Water Sector: Women and Management, the Case of Rural Botswana".

Helen Thomas, "Building Gender Strategies for Flood Control, Drainage and Irrigation in Bangladesh".

Christine van Wijk, "Gender Aspects of Sanitation, The Missing Slipper of Cinderella?".

Linden Vincent, "Gender Perspectives in River Basin Planning".

Beth Woroniuk, "Against the Current: Mainstreaming, Women and Water in UNICEF".

Margreet Zwarteveen, "Gender and Irrigation Management: Issues and Challenges".

2. Presentations that were not accompanied by formal papers

Deo Binamunga: Gender Training.

Rehka Dayal: People's Participation in Rural Water Supply: Experience from South Asia.

Rehka Dayal, Bruce Gross and Burjana Bulajich: Experiences from UNDP/World Bank, INSTRAW & the Collaborative Council.

Irene Guijt: Gender and Mangrove Swamp Management.

Irene Guijt: Gender and Participatory Rural Appraisal.

Mercedes Juarez: Gender, Environmental Health and Sanitation in Latin America.

Mayling Simpson-Herbert: SARAR Methodology.

ORGANISATION DE COOPÉRATION
ET DE DÉVELOPPEMENT ÉCONOMIQUES

DIRECTION DE LA COOPERATION
POUR LE DEVELOPPEMENT

COMITE D'AIDE AU DEVELOPPEMENT

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COOPERATION INTERNATIONALE POUR UNE GESTION DURABLE DES RESSOURCES EN EAU : "UNE EXPERIENCE FRANCAISE"

(NOTE DE LA DELEGATION DE LA FRANCE)

Ce document est diffusé pour INFORMATION à la réunion du CAD sur la gestion des ressources en eau qui se tiendra les 10 et 11 mai 1994.

COOPERATION INTERNATIONALE POUR UNE GESTION DURABLE DES RESSOURCES EN EAU: "UNE EXPERIENCE FRANCAISE"

1. LES PRINCIPES DE DUBLIN

1. Il y a aujourd'hui, dans l'ensemble du monde, plus de personnes qui manquent d'eau qu'il y a dix ans et cela malgré les efforts financiers considérables qui ont été consentis pendant la décennie de l'eau pour améliorer l'offre.

2. Tirant les leçons de ces insuffisances souvent dramatiques, la Conférence de Dublin de janvier 1992 sur l'eau et l'environnement a souligné la nécessité d'une gestion efficace et durable des ressources en eau. Celles-ci doivent être considérées comme un bien économique, gérées au niveau le plus approprié en associant les usagers, particulièrement les femmes, aux décisions et en tenant le plus grand compte de leurs conséquences pour l'environnement.

3. Les solutions pratiques pour la mise en oeuvre de ces principes universels varient d'un pays à l'autre en fonction de la nature et de l'urgence des problèmes et aussi de la culture politique et des traditions. Il en est ainsi à l'intérieur même de l'Europe.

4. Les expériences acquises à travers le monde constituent un fonds commun qui présente un grand intérêt pour tous ceux qui souhaitent améliorer les modalités de gestion de l'eau. C'est ainsi qu'en France, par exemple, les personnes qui ont préparé la loi sur l'eau de 1964 ont soigneusement étudié les expériences étrangères et notamment celles des syndicats coopératifs du bassin de la Ruhr, les Genossenschaften.

5. C'est dans cet esprit que la France a proposé à différents pays qui voulaient moderniser leurs institutions dans le secteur de l'eau de profiter de l'expérience française de gestion des ressources en eau.

2. L'EXPERIENCE FRANCAISE DE LA GESTION INTEGREE DE L'EAU

6. Le système de gestion de l'eau en vigueur en France depuis une trentaine d'années donne satisfaction et intéresse de plus en plus de partenaires étrangers. Ce système a été instauré par la loi sur l'eau de 1964 afin d'apporter des solutions à la multiplication des conflits entre les différents usages de l'eau et à l'aggravation des problèmes de pollution résultant d'une croissance démographique et économique rapide dans les années qui ont suivi la deuxième guerre mondiale.

7. Cette loi n'a pas supprimé les responsabilités administratives existantes. Au contraire, elle a renforcé les pouvoirs de police et de contrôle de l'Etat. Mais elle a, tout d'abord, ajouté une dimension économique à la gestion de l'eau, notion qui s'est imposée en raison de la concurrence entre les différents usages de l'eau au sein d'un même bassin hydrographique. Le principe utilisateur-payeur et pollueur-payeur a alors été reconnu et mis en application.

8. Elle a, d'autre part, créé des entités autonomes, au niveau de chaque bassin, qui constituent la principale originalité du système :

-- Le Comité de bassin est un organe de concertation entre les différents usagers de l'eau. Véritable petit parlement de l'eau, au sein duquel siègent des représentants de l'Etat, des élus locaux et des représentants des usagers industriels, le Comité donne son accord aux redevances qui seront appliquées sur le prélèvement, la consommation et la pollution des eaux superficielles et souterraines.

-- L'Agence de l'eau est chargée de percevoir les redevances et de redistribuer la masse financière correspondante sous forme de primes, subventions et prêts bonifiés pour les actions d'économie d'eau et de lutte contre la pollution. Elle agit pour coordonner les investissements nécessaires au développement et à la protection des ressources en eau, selon un programme d'intervention approuvé par le Comité de bassin. Elle est financièrement autonome et n'assume pas la maîtrise d'ouvrage. Son action est uniquement incitative.

9. La nouvelle loi sur l'eau de 1992 a repris et complété les dispositions de 1964 en reconnaissant la valeur patrimoniale de l'eau et en améliorant le dispositif de concertation et de planification, au niveau des bassins et également au niveau local.

10. Ce système répond ainsi pleinement aux principes énoncés à Dublin.

3. LA COOPERATION FRANCAISE EN MATIERE DE GESTION INTEGREE DES RESSOURCES EN EAU

11. Après le Sommet de Mar Del Plata de mars 1977, la France a décidé de développer ses actions de coopération internationale en matière de gestion de l'eau.

12. A cette fin, une association a été créée à Sophia-Antipolis près de Nice, le CEFIGRE (Centre pour la formation internationale à la gestion rationnelle de l'eau), qui est devenu en 1992 l'Office international de l'eau (OIE).

13. A partir de la fin des années 80, les actions de formation au bénéfice de partenaires étrangers en matière de gestion de l'eau ont été de plus en plus souvent intégrées à des programmes de coopération ayant pour objet de soutenir de nouvelles institutions projetées.

14. De tels programmes ont été menés dans différentes parties du monde, notamment :

-- Asie du Sud-Est : Indonésie
-- Amérique latine : Brésil, Mexique, Venezuela
-- Europe centrale et orientale : Pologne
-- Afrique : Maroc

15. Chaque projet de coopération doit être adapté aux spécificités du bassin ou sous-bassin considéré. **Il ne s'agit pas de proposer des modèles institutionnels préfabriqués, mais des méthodes d'analyse.**

16. Le plus souvent, les projets de coopération incluent les composantes suivantes :

-- **Expertise technique pour :**

. l'amélioration, voire la création, de bases de données quantitatives et qualitatives sur les ressources en eau ;

. la préparation et la mise en oeuvre de nouveaux cadres réglementaires et institutionnels ;

. la simulation de la collecte de redevances et de la répartition de subventions pour inciter et coordonner les investissements au niveau du bassin.

-- **Cycles de formation**, en France et dans le pays concerné, organisé par l'Office international de l'eau en association avec les agences de l'eau. En France, il y a chaque année, dans le cadre de cette coopération, une vingtaine de stagiaires de longue durée et une cinquantaine de courte durée.

-- **Activités diverses d'assistance technique** pour soutenir les institutions nouvelles en cours de formation.

17. En vue de conserver une approche aussi pragmatique que possible des problèmes de gestion à traiter, la majeure partie de l'expertise est fournie par des experts des six agences de l'eau: "Seine-Normandie", "Artois-Picardie", "Rhin-Meuse", "Rhone-Méditerranée-Corse" et "Adour-Garonne".

18. Quelques-unes de ces agences ont passé des accords de jumelage avec leurs partenaires étrangers de façon à prolonger les échanges techniques au-delà de la mise en oeuvre des projets de coopération.

19. A cet égard, l'expérience de l'Agence "Adour-Garonne" en Pologne paraît particulièrement intéressante. Jumelée avec la nouvelle Agence de la Moyenne-Vistule (Varsovie), elle a développé des échanges portant sur les domaines techniques et administratifs, entre cadres des agences, mais également dans le domaine plus sensible des relations avec les usagers, en organisant des rencontres de responsables polonais et d'élus français, en invitant ces responsables à une réunion du Comité de bassin et en envoyant son Conseil d'administration rencontrer des industriels en Pologne. L'objectif est d'aider ainsi la nouvelle agence polonaise à établir des relations constructives avec ses différents interlocuteurs pour la gestion de l'eau.

COOPERATION FRANCO-POLONAISE

L'accord de coopération franco-polonais signé par les ministres de l'environnement des deux pays en septembre 1990 a prévu une assistance technique pour la réorganisation de la gestion de l'eau en Pologne et, en particulier, la création d'organismes de gestion au niveau des bassins versants.

Dans ce cadre, des expertises juridiques et techniques ont été fournies, un expert permanent, ancien directeur financier de l'Agence de l'eau Artois-Picardie, a été mis à la disposition du Ministère polonais de l'environnement et des programmes de formation ont été mis en oeuvre par l'Office international de l'eau.

En 1991, le Ministère polonais de l'environnement a procédé à la mise en place de sept offices régionaux de l'eau (RZGW) qui interviennent au niveau de bassins ou de sous-bassins hydrographiques.

La formation a concerné les cadres supérieurs de ces organismes de bassin ainsi que des représentants de l'administration centrale et d'instituts rattachés intervenant dans la préparation de la politique de l'eau et la gestion de l'eau (au total 45 personnes).

En avril 1991, un premier séminaire sur la gestion de l'eau en France et, notamment, le rôle et les missions des agences, a été organisé en Pologne. Il a été suivi de la sélection de candidats pour une formation plus approfondie en France.

En 1992, deux groupes ont été ainsi accueillis en France pour une formation technique suivie de stages individualisés.

En 1993, deux délégations de représentants de comités de bassin ont été reçues en France. Enfin, différentes réunions ont été organisées sur ce thème avec des représentants de ministères, d'agences et de comités de bassin.

20. Il n'est pas aisé d'apprécier les résultats pratiques de programmes de coopération qui ont eu pour objet de soutenir des dynamiques, en complément souvent d'autres aides internationales[1]. On peut cependant constater le degré d'avancement des réformes menées par les partenaires de la coopération.

21. A cet égard, différentes étapes peuvent être distinguées :

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1. Durant la première Conférence internationale sur le développement durable organisée par la Banque mondiale, en octobre 1993 à Washington, sur la gestion des ressources en eau, certains pays (Brésil, Mexique et Pologne), en présentant les réformes qu'ils menaient, ont indiqué qu'ils avaient tiré avantage de l'expérience française à travers des programmes de coopération.

-- la coordination des décisions relatives à la gestion des ressources en eau, en prenant compte des différents aspects, notamment environnementaux, généralement dans le cadre d'un comité de bassin ;

-- la participation des usagers, et notamment des femmes, à la gestion globale des resources en eau, en particulier à travers la représentation des collectivités locales ;

-- la gestion de l'eau comme un bien économique, avec la mise en place, notamment, de mécanismes financiers incitant les industriels et les collectivités locales à réaliser des équipements de dépollution.

22. En général, les partenaires avec lesquels des programmes de coopération technique ont été menés ont atteint, plus ou moins complètement, les deux premiers stades.

23. Certains d'entre eux font participer activement des représentants des collectivités locales, des représentants de l'industrie et des associations à la gestion de l'eau dans le bassin considéré, dans le cadre d'une institution nouvelle. C'est tout particulièrement le cas de l'Agence de l'eau du lac de Valencia (Venezuela).

24. Le principe de l'usager-payeur et le principe du pollueur-payeur apparaissement les plus difficiles à mettre en oeuvre, non pas tant pour les usages industriels que pour les usages domestiques en raison de considérations socio-économiques, culturelles, voire religieuses. On peut citer un cas où, malgré toutes ces difficultés, une redevance a été établie pour toutes les extractions dans un bassin : celui de la première Agence de l'eau indonésienne, PERUM JASA TIRTA, dans le bassin de la BRANTAS, qui prévoit de créer un système de redevances pour la pollution.

25. Beaucoup d'efforts d'explication sont encore nécessaires pour que tous les consommateurs perçoivent bien les avantages que peut leur procurer une tarification des usages de l'eau qui reflète la réalité économique. Mais ceci reste aussi d'actualité, semble-t-il, dans les pays Membres de l'OCDE.

4. CONCLUSION

26. Chaque pays est confronté au défi d'une meilleure gestion de ses ressources en eau. Celle-ci met en cause les intérêts conflictuels de nombreux acteurs publics et privés. Les solutions institutionnelles doivent être adaptées aux conditions géographiques et culturelles spécifiques à chaque pays.

27. C'est sans doute pourquoi la coopération internationale dans ce domaine n'est pas aisée :

-- elle requiert une bonne compréhension du contexte local chez chacun des partenaires ;

-- les questions traitées sont complexes et sensibles.

28. Cependant, le développement de cette coopération internationale paraît vivement souhaitable parce qu'elle contribue, tout d'abord, à une meilleure prise de conscience générale des limites et de la vulnérabilité des ressources en eau.

29. Elle aide les autorités responsables, d'autre part, selon les appréciations portées a posteriori par celles-ci, à faire évoluer les systèmes de gestion des ressources en eau, grâce à des actions d'information et de formation qui participent à la dynamique de changement.

30. La collaboration entre bailleurs de fonds et l'organisation d'échanges d'expériences dans un cadre régional (comme c'est le cas en Amérique latine par exemple) paraissent très utiles pour améliorer ce type de soutien.

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IMPLEMENTING THE WATER RESOURCES MANDATE OF AGENDA 21: THE PROMISE AND THE CHALLENGES FOR OECD COUNTRIES

(Note by the World Bank)

The attached document, prepared by the Water and Sanitation Division of the World Bank, based in part on commissioned papers by Mr. Stanley Johnson, and by Messrs. F.R. Rijsberman and H.H.G. Savenije (with support from the Dutch Government), is circulated as a BACKGROUND document for the DAC meeting on water resources management to be held on 10-11 May 1994.

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I. WHY IS THE SUBJECT OF WATER SO IMPORTANT?

A Basic Development Issue.

The Rio Declaration on Environment and Development, adopted at the conclusion of the United Nations Conference on Environment and Development (UNCED) on 13 June, 1992, opens with these words:

"Human beings are at the center of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature."

Such phrases, resonant as they may be, ring somewhat hollow when we consider that:
- Over one billion people in developing countries do not have access to potable water, particularly the rural poor
- 1.7 billion have inadequate sanitation facilities
- Unsafe water is implicated in the deaths of more than 3 million people and causes about 900 million episodes of illness each year[1]

The situation is the more poignant and tragic in that, in many cities of the developing world, the poor - often dependent of water vendors - pay at least ten times more than the rich for a liter of water.[2] In a sense, the poor subsidize the rich, as is demonstrated graphically in recent data from Latin America. In the Dominican Republic, for instance, for every dollar of subsidy received by a poor person in the form of water supply, a rich person receives three dollars. And for every dollar of subsidy received by a poor person[3] in the form of sewerage services, a rich person[4] receives seven dollars! Available data suggest that this inequality in the benefits of subsidies is particularly severe where services are rationed and is thus more severe in poor countries and for sanitation services.

Currently nearly one-third of the world's inhabitants live in countries with severe water problems. The world's most poverty-stricken countries are those most affected by drought and other water problems. These countries are often those with the highest rates of population growth and where demographic pressures on water, as on other resources, are likely to be acute.[5]

The provision of potable water and adequate sanitation is, by any yard-stick, a basic development issue. A society which fails to meet such basic needs fails in one of its primary purposes. Today one in three people in the developing world still lacks these most basic requirements for health and dignity.[6]

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[1] cf.Michel Petit, presentation to World Bank Conference on Environmentally Sustainable Development, Sept. 30th, 1993. See also The World Environment, 1972-1992: Two decades of Challenge. Published for UNEP by Chapman and Hall, pp 95, 96

[2] See John Briscoe's article: Poverty and Water Supply: How to move forward, published in Finance and Development, December 1992, IMF and World Bank.

[3] A person in the bottom 20% of the income profile

[4] A person in the top 20% of the income profile

[5] See Population and Water Resources: A Delicate Balance, by Malin Falkenmark and Carl Widstrand. Population Bulletin, Vol.47, No.3, November 1992, published by the Population Reference Bureau.

[6] See Agenda 21, Chapter 18, para 47

If potable water and adequate sanitation is central to the individual's health and well-being, it is by the same token central to national development. All the newer indices of human progress, e.g. those including social as well as economic indicators, stress the importance of 'access to safe water' and 'access to health services.'[7]

There is, moreover, a strong correlation between the availability of such basic health-related infrastructure and declining fertility. A very large majority of the world's population lives in countries where the government's official policy is to reduce rates of population growth and to alleviate the problems posed for the nation, for families and for individuals by continued high fertility rates. Reducing mortality rates can offer a positive contribution to reducing fertility rates. Progress on basic health-related measures, such as the supply of clean water, sanitation and sewerage, can be seen as the essential underpinning of effective national strategies for sustainable development, strategies which include action in the field of population and family planning as the vital third side in the Population-Development-Environment triangle.

There are many other good reasons for stressing the importance of water resources for people and for countries. One-third of the world's food production comes from irrigated land. Since 1950, the irrigated area has grown by 2.5 per cent - a key factor in allowing food production to keep up with the growth in food demand. The expansion of irrigation has accounted for over one-half the increase in global food production. But it is now becoming increasingly difficult to sustain this expansion. The lowest cost and highest benefit investments have been made already. The costs of new irrigation infrastructure are rising rapidly and there are growing environmental concerns about irrigation projects and the dams which serve such projects, as exemplified by the controversies surrounding the Narmada and Three Gorges projects. Whatever the rights and wrongs of individual cases, the practical reality is that new irrigated areas are unlikely to be a major source of new food supplies.[8] Rather the focus, as we shall see later, must be on more efficient utilization of water both in existing irrigation systems and elsewhere.

Irrigated agriculture is the largest user of water, accounting for 73% of total withdrawal.[9] In the 1980's, approximately 270 million hectares of land were irrigated, almost half of it in the developing countries. But a large share of irrigation water is wasted. It is not uncommon for 70 to 80% of the water diverted to irrigation systems to be lost to the atmosphere or to seep into the ground before reaching the fields.[10]

Water is a basic lubricant of industrial development. Factories use it for cooling, processing, generating steam to run equipment, and as a transporting agent. Though water used in industry accounts for 6% of total withdrawal at the present time, both domestic and industrial use is growing much faster than agricultural demand.

The pressure on water resources does not come purely from the demand side; domestic, agricultural or industrial. It is not purely a function of growing populations and growing per

[7] See for example the recent series of UNDP reports containing a Human Development Index.
[8] Michel Petit, op. cit, p.2
[9] Malin Falkenmark et al in Ingeniera Sanitaria - Vol XLIV - No 1 and 2, Jan-June 1990
[10] Falkenmark and Widstrand, op. cit.,p.14

capita demands. Water availabilities - the supply side - may be affected by man-induced changes, for example the impact of large-scale deforestation or afforestation (giving rise to so-called "green deserts") or of erosion and increased run-off on the ability of an aquifer to be replenished. Discharge of domestic sewage and industrial waste into nearby water-bodies and contamination of watersheds with pesticides, fertilizers and other agrochemicals from drainage systems are all evidence of how human activities can have the effect of diminishing the resource base itself. Water may be a renewable resource but if the use or contamination rate exceeds the renewal rate, it is effectively mined or depleted no less surely than deposits of fossil fuels are mined or depleted.

By some estimates, the amount of water made unusable by pollution is almost as great as the amount actually used by the human economy.[11]. In 1950 human demand for fresh water was only about one-half the amount of water that was accessible. Today, the figure is nearer three-quarters.

Water can also be seen as a primary vehicle of many environmental values. The Statement adopted at the International Conference on Water and the Environment held in Dublin in January 1992 summarized this eloquently:

"Water is a vital part of the environment and a home for many forms of life on which the well-being of humans ultimately depends. Disruption of flows has reduced the productivity of many such ecosystems, devastated fisheries, agriculture and grazing, and marginalized the rural communities which rely on these. Various kinds of pollution, including transboundary pollution, exacerbate there problems, degrade water supplies, require more expensive water treatment, destroy aquatic fauna, and deny recreation opportunities."

The international dimension.

When the UN's current secretary-general, Dr Boutros Boutros Ghali, was Egypt's minister of state for foreign affairs, he was reported to have said: "The next war in our region will be over the waters of the Nile, not politics." Nearly 47 per cent of the land area of the world (excluding Antarctica) falls within international water basins that are shared by two or more countries. There are 44 countries with at least 80 per cent of their total areas within international basins.[12] As countries find that their own water resources have been, or are likely to be, exploited to the full, or even over-exploited, they may increasingly look to sources beyond their borders. Yet the use of those same resources may already be an integral part of another country's (or countries') plans or programmes. The signature of the Indus Basin Treaty in 1960 helped avert conflict between India and Pakistan in the post-War period. Current tensions in the Tigris-Euphrates watershed may be alleviated through the display of goodwill and imagination on all sides.[13] The problems of the Jordan may be subsumed in wider Middle East peace arrangements.

But for every positive achievement in international or regional or bilateral cooperation, there has been an underlying potential for conflict. With the increases in population already

[11] See p. 56, Beyond the Limits, by Donella H. Meadows, Dennis L. Meadows, Jorgen Randers. Chelsea Green Publishing Co, 1992

[12] UNEP, op. cit., p 99

[13] See Chapter 6, Hydropolitics, of The Last Oasis: Facing Water Scarcity, by Sandra Postel, published by Earthscan, London.

envisaged for many regions of the world (even in those regions - such as East Asia - where there have been considerable successes in reducing population growth and fertility rates); with the increases in per capita demand of those same populations; with the pressures on supply already discussed, including those of pollution - it seems likely, if not certain, that the risk of conflict between nations and between peoples will increase rather than diminish over the coming years - unless positive steps are taken now to develop a new approach to water resources management.

In summary, having adequate water is vital for individual health and well-being; it is vital for industry and agriculture; it is vital for growing cities and urban areas. The many and varied environmental services that an effectively-managed water resource can supply are essential for both economic and ecological reasons. Peace itself, or at least the avoidance of conflict, may be critically dependent on the ability of different national, social or ethnic groupings to share a water resource amicably between them.

There are so many good reasons for getting it right. So what is going wrong now? And how can things be done better than they are?

II. A FRAMEWORK FOR IMPROVING WATER RESOURCES MANAGEMENT

Water resources, for all of the reasons cited above, must be better managed. Current practices are not sustainable from either an economic or an environmental perspective. In recent years a remarkable consensus has emerged on the key problems:

- Fragmented public investment programming and water sector management which fails to take account of the interdependencies among agencies, jurisdictions and sectors. Such fragmentation has lead to wasteful investments and uncoordinated management.

- Excessive reliance on over-extended governmental agencies that have neglected the need for economic pricing, financial accountability and user participation.

- Underpricing of water and lack of cost recovery, resulting in excessive and wasteful water use, misallocation. and unviable water service entities. A recent review of World Bank-financed projects showed that the effective price charged for water was only 35 percent of the average cost of supply while for irrigation water the effective prices cover an even smaller share of average costs.[14]

- Over-centralization of the delivery of water services and the lack of stakeholder, community and private sector involvement, yielding a vicious cycle of unreliable service, low willingness to pay, and a further decline in the capacity to provide service.

The above observations are not, in themselves, especially novel: the issue of water resources has been the subject of increasing international attention since the United Nations Water Conference held in Mar del Plata in 1977. What is novel is the maturing of the international discussions on the subject. For decades international gatherings in the past have been

[14] Michel Petit, op. cit, p.5

content to elaborate long lists of desiderata, giving little attention to the difficult decisions and tradeoffs involved, and little attention given to implementation and realism.

Hand-in-hand with the recent consensus on the nature of water resource management problems, a corresponding consensus has emerged on the core principles which must guide the resolution of these problems. These principles have been most clearly and succinctly articulated in "the Dublin Statement" of the International Conference on Water and the Environment, which was convened to provide technical guidance to the UNCED deliberations.

Dublin stressed the need for a **holistic approach** to the effective management of water resources, with particular emphasis: on the need to consider the costs which users impose on one another and on the environment; on the need to take account of water-land interactions; and on the need to manage the resource in its "natural" context, the river basin.

Dublin emphasized the importance of developing an **enabling institutional environment** which: assigns responsibility for management of specific tasks to the lowest appropriate level; ensures the involvement of stakeholders in the formulation of policy at all levels; and provides for the use of a variety of organizations -- public, private and non-governmental -- in developing efficient, accountable sector organizations.

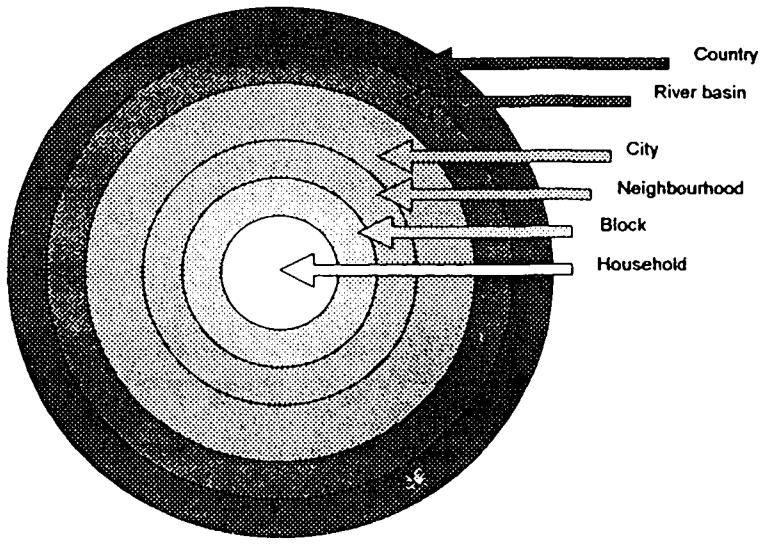
Dublin also emphasized that **managing water as an economic good** is an important way of achieving efficient and equitable use, and of encouraging conservation and protection of water resources.

What is encouraging is that the focused, practical "Dublin principles" have proved to be hegemonic, both at the global level (where they have formed the core of Chapter 18 of Agenda 21, and underlie the Political Statement from the Interministerial Meeting on Water and Sanitation in Noordwijk, Holland, in March 1994).

III. FROM PRINCIPLES TO PRACTICE:WHAT ARE THE PRIORITIES FOR DEVELOPING COUNTRIES AND FOR THE OECD?

In considering possible actions by OECD countries, it is useful to first go back to basics, and consider the different levels at which water-related decisions are made (Figure 1).

Figure 1: Levels of decision-making on water resources



To illustrate the implications of the "decision-making rosette" (Figure 1), it is instructive to consider how water supply and sanitation services, and water resource management activities should be financed.

The fundamental axiom of public financing prescribes that costs should be assigned to different levels in this hierarchy according to the benefits accruing at different levels. This would suggest that the financing of sanitation, sewerage, and wastewater treatment be approximately as follows:

- households pay the bulk of the costs incurred in providing on-plot facilities (bathrooms, toilets, on-lot sewerage connections);
- the residents of a block collectively pay the additional cost incurred in collecting the wastes from individual houses and transporting these to the boundary of the block;
- the residents of a neighborhood collectively pay the additional cost incurred in collecting the wastes from blocks and transporting these to the boundary of the neighborhood (or treating the neighborhood wastes);
- the residents of a city collectively pay the additional cost incurred in collecting the wastes from blocks and transporting these to the boundary of the city (or treating the city wastes);
- the stakeholders in a river basin -- cities, farmers, industries and environmentalists -- collectively assess the value of different levels of water quality within a basin, decide on what

level of quality they wish to pay for, and on the distribution of responsibility for paying for the necessary treatment and water quality management activities.

In practice, of course, there are complicating factors to be taken into account (including transactions costs of collection of revenues at different levels, and the interconnectedness of several of the benefits). What is striking, nevertheless, is that the most innovative and appropriate forms of service provision and water resources management (see the Orangi and condominial examples in Boxes 1 and 2, and the Ruhrverband and French River Basin Management System in Box 3) follow the above logic to a remarkable degree.

Box 1: How and when poor people demand sanitation services, and how to meet these: The case of the Orangi Pilot Project in Karachi

In the early 1980s, Akhter Hameed Khan, a world-renowned community organizer, began working in the slums of Karachi. He asked what problem he could help resolve. People in this area had a relatively satisfactory supply of water but now faced "streets that were filled with excreta and waste water, making movement difficult and creating enormous health hazards". What did the people want, and how did they intend to get it, he asked. What they wanted was clear -- "people aspired to a traditional sewerage system... it would be difficult to get them to finance anything else." And how they would get it, too, was clear -- they would have Dr. Khan persuade the Karachi Development Authority (KDA) to provide it for free as it did (or so they perceived) to the richer areas of the city.

Dr. Khan then spent months going with representatives from the community petitioning the KDA to provide the service. Once it was clear that this would never happen, Dr. Khan was ready to work with the community in finding alternatives. (He would later describe this first step as the most important thing he did in Orangi -- liberating, as he put it, the people from the demobilizing myths of government promises.)

With a small amount of core external funding the Orangi Pilot Project (OPP) was started. The services that people wanted were clear; the task was to reduce the costs so that these were affordable and to develop organizations that could provide and operate the systems. On the technical side, the achievements of the OPP architects and engineers were remarkable and innovative. Coupled with an elimination of corruption, and the provision of labor by community members, the costs (in-house sanitary latrine and house sewer on the plot, and underground sewers in the lanes and streets) are less than $100 per household.

The (related) organizational achievements are equally impressive. The OPP staff has played a catalytic role -- they explain the benefits of sanitation and the technical possibilities to residents and conduct research and provide technical assistance. The OPP staff never handled the community's money. (The total costs of OPP's operations amounted, even in the project's early years, to less than 15 percent of the amount invested by the community.) The households' responsibilities include financing their share of the costs, participating in construction, and election of a "lane manager" (who typically represents about fifteen households). The lane committees, in turn, elect members of neighborhood committees (typically around 600 houses) who manage the secondary sewers. The early successes achieved by the Project created a "snowball" effect, in part because of increases in the value of property where lanes had installed a sewerage system. As the power of the OPP-related organizations increased, so they were able to bring pressure on the municipality to provide municipal funds for the construction of secondary and primary sewers.

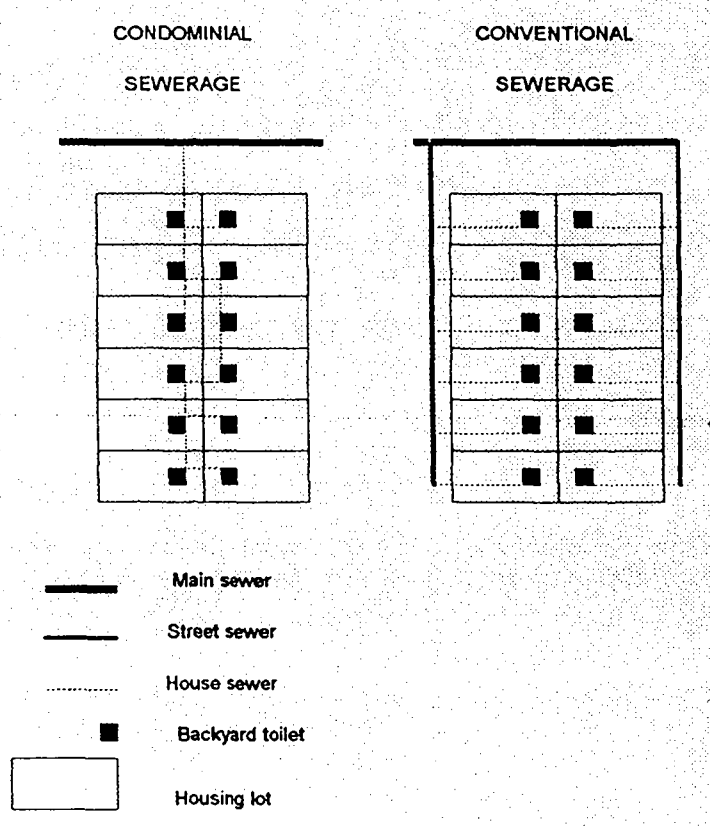
The Orangi Pilot Project has led to the provision of sewerage to over 600,000 poor people in Karachi and to attempts by at least one progressive municipal development authority in Pakistan to follow the OPP method and, in the words of Arif Hasan "to have government behave like an NGO." Even in Karachi, the mayor has now formally accepted the principle of "internal" development by the residents and "external" development (including the trunk sewers and treatment) by the municipality.

The experience of Orangi demonstrates graphically how peoples' demands move naturally from the provision of water to removal of waste from their houses, then their blocks and finally their neighborhood and town.

Box 2: The condominial sewerage system in Brazil

The "condominial" system is the brain-child of Jose Carlos de Melo, a socially committed engineer from Recife. The name "condominial" was given for two reasons. First, a block of houses was treated like a horizontal apartment building – or "condominial" in Portuguese (see Figure 9 below). Second, "Condominial" was a popular Brazilian soap opera and associated with the best in urban life! As is evident in Figure 9 below, the result is a radically different layout (with a shorter grid of smaller and shallower "feeder" sewers running through the backyards and with the effects of shallower connections to the mains rippling through the system). These innovations cut construction costs to between 20 percent and 30 percent of those of a conventional system.

Figure 2: Schematic layouts of condominial and conventional sewerage systems



The more fundamental and radical innovation, however, is the active involvement of the population in choosing their level of service, and in operating and maintaining the "feeder" infrastructure. The key elements are that families can choose: (i) to continue with their current sanitation system; (ii) to connect to a conventional water-borne system; or (iii) to connect to a "condominial" system. If a family chooses to connect to a condominial system, it has to pay a connection charge (financed by the water company) of, say X cruzados, and a monthly tariff of Y cruzados. If on the other hand, it wants a conventional connection, it has to pay an initial cost of about 3X and a monthly tariff of 3Y (reflecting the different capital and operating costs). Families are free to continue with their current system (which usually means a holding tank discharging into an open street drain). In most cases, however those families who initially choose not to connect eventually end up connecting. Either they succumb to heavy pressure from their neighbors. Or they find the build-up of wastewater in and around their houses intolerable once the (connected) neighbors fill in the rest of the open drain.
Individual households are responsible for maintaining the feeder sewers, with the formal agency tending

to the trunk mains only. This increases the communities' sense of responsibility for the system. Also, the misuse of any portion of the feeder system (by, say, putting solid waste down the toilet) soon shows up in a blockage in the neighbor's portion of the sewer. This means rapid, direct and informed feedback to the misuser! This virtually eliminates the need to "educate" the users of the system in the do's and don'ts, and results in fewer blockages than in conventional systems. Finally, because of the greatly reduced responsibility of the utility, its operating costs are sharply reduced.

The condominial system is now providing service to hundreds of thousands of urban people in Northeast Brazil and is being replicated on a large scale throughout the country. The danger, however, is that the clever engineering is seen as "the system". Where the community and organizational aspects have been missing, the technology has worked poorly (as in Joinville, Santa Catarina) or not at all (as in the Baixada Fluminense in Rio de Janeiro).

Box 3: Water resource financing through river basin agencies in Germany and France:

The Ruhrverband:

The Ruhr Area, which has a population of about 5 million, contains the densest agglomeration of industrial and housing estates in Germany. The Ruhrverband is a self-governing public body which has managed water in the Ruhr Basin for eighty years. There are 985 users and polluters of water (including communities, districts, and trade and industrial enterprises) which are "Associates" of the Ruhrverband. The highest decision-making body of the Ruhrverband is the assembly of associates, which has the fundamental task of setting the budget (of about $400 million annually), fixing standards and deciding on the charges to be levied on users and polluters. The Ruhrverband itself is responsible for the "trunk infrastructure" (the design, construction and operation of reservoirs and waste treatment facilities), while the communities are responsible for the "feeder infrastructure" (the collection of wastewater).

The French River Basin Financing Agencies:

In the 1950s it became evident that France needed a new water resources management structure capable of successfully managing the emerging problems of water quality and quantity. The French modeled their system closely on the principles of the Ruhrverband, but applied these principles on a national basis. Each of the six river basins in France is governed by a Basin Committee (also known as a "Water Parliament") which comprises between 60 and 110 persons who represent all stakeholders -- national, regional and local government, industrial and agricultural interests and citizens. The Basin Committee is supported by a technical and financial "Basin Agency". The fundamental technical tasks of the Basin Agency are to determine (a) how any particular level of financial resources should be spent (where should treatment plants be located; what level of treatment should be undertaken, etc.) so that environmental benefits are maximized and (b) what level of environmental quality any particular level of financial resources can "buy". On the basis of this information, the Water Parliament decides on (a) the desirable vector of costs and environmental quality for their (basin) society, and (b) how this will be financed (relying heavily on charges levied on users and polluters). The fundamental financial task of the Basin Agency is to administer the collection and distribution of these revenues.

In the French system (in contrast to the Ruhrverband) most of the resources which are collected are passed back to municipalities and industries for investments in the agreed-upon water and wastewater management facilities.

The implications for the OECD

The question facing the OECD countries is a straightforward one, consisting of two parts. First, what are the "responsibilities and actions" which, in terms of the above "rosette" are indispensably performed at the highest (international) level? And, second, how do actions taken by External Support Agencies (ESAs) support actions at different levels in developing countries that are consistent with the new consensus articulated in the Dublin, Rio and Noordwijk declarations?

Issue 1: Occupying the moral "high ground"

A necessary, but not sufficient step is that the External Support Agencies (ESAs) first get their own houses in order before they tell others to do so! The action of ESAs is most productive when they can show that they have made the (always difficult) water resource management changes which they now recommend to developing countries.

In the past many OECD countries, like developing countries, have managed their water resources very poorly. Today the situation, while far from perfect, has improved dramatically. Many OECD countries are moving towards water resources management systems which are consistent with the Dublin principles. Fore example:

- the Ruhrverband, the most heavily industrialized area of Germany, is an example where the Dublin principles have been applied successfully for 80 years;
- the French River Basin Financing Agencies have been operating for 30 years, also very successfully; and
- in the Western United States water markets are now widely used as an instrument for managing water resources more effectively.

At the operating level, too, commercially-oriented utilities are now the order in all industrialized countries, with very substantial and rapidly expanding involvement of the private sector in France, England and Wales, Spain and Portugal.

These successful changes in OECD countries are important not only for moral reasons, but also because they provide a powerful base from which developing countries might learn. To cite just one important example, consider the twin issues of water quality standards and expenditures on water quality management.

In many OECD countries the approach followed has been to set universal standards and then to raise the funds necessary for financing the required investments. As is becoming increasingly evident, such an approach is turning out to be financially infeasible, even in the richest countries of the world. In the United Kingdom, the target date for compliance with the water quality standards of the European Community is being reviewed as customers' bills rise astronomically to pay the huge costs (over $60 billion this decade) involved. And in the United States local governments are revolting against the unfunded mandates of the Federal Government. A particularly pertinent case is the refusal of cities on the Pacific coast to spend the resources ($3 billion in the case of San Diego alone) required for secondary treatment of sewage. The National Academy of Sciences of the United States has advocated rescinding the "secondary treatment everywhere" mandate and developing an approach in which the costs and benefits are both taken into account in the management of sewage in coastal areas.

In a few countries -- with France the outstanding example -- a different model has been developed. In these countries, institutional arrangements have been put into place which (a) ensure broad participation in the setting of standards, and in making the tradeoffs between cost and water quality; (b) ensure that available resources are spent on those investments which yield the highest environmental return and (c) use economic instruments to encourage users and polluters to reduce the adverse environmental impact of their activities.

In the present context the key point is that the experience of OECD countries, appropriately analyzed and packaged, provides a rich basis of experience from which developing countries can learn many valuable lessons.

Issue 2: Developing policies consistent with "the new consensus"

An essential requirement for translating the new consensus into action on the ground is for ESAs to develop policy statements which:

- translate the global principles into policies which are specific to the ESA;
- do so in a participatory way, involving all the relevant stakeholders (including, for instance, governing boards, management, and staff of the ESA, and the developing countries with whom the ESA works).

One example of "good practice" in this regard is the development of the Water Resources Management Policy Paper of the World Bank (Box 4).

BOX 4
A "good practice" example:
The World Bank's Water Resources Management Policy Paper

The World Bank's World Development Report (WDR) for 1992 focused on the environment and development. The Report identified water resources management as a major issue for environmentally sustainable development. In part stimulated by the discussion on the WDR, and in part stimulated by the then-upcoming Rio Conference, the World Bank's Board instructed Bank management to prepare a water resources policy paper for the Bank.

The preparation of the paper took almost two years. It was a process characterized by a vigorous internal debate involving a large number of staff members at all levels. The authors of the paper also followed an innovative approach with regard to the external community. Prior to the initiation of the work a high-level professional meeting was held, getting opinions from professionals and policy makers, primarily from developing countries, on the key issues to be addressed in the paper. And at several stages in the course of the paper drafts were discussed with external groups comprising representatives of professional associations and other non-governmental agencies.

This highly participatory process meant the expenditure of much energy and time. However, it meant that the paper which finally emerged was one which gained a wide degree of acceptance within the Bank, among the Bank's clients, and in the NGO community. In the present context an important implication was that when the Bank advised its borrowers to encourage participation in the setting of water policy, it could legitimately claim to have practiced what it preached!

Issue 3: Ensuring that cooperation and support to developing countries are consistent with these policies

Once ESAs have developed and articulated policies which are consistent with "the new consensus", the next requirement is translating these into action. This process typically comprises several steps.

Step One is the translation of the policy statement into operational rules or directives. Again the World Bank provides an example of "good practice". Box 5 (overleaf) presents the Operational Policies Note which provides Bank staff with specific criteria to be used in translating the general policy paper into practice.

Step Two is the key one, namely of working with developing countries in translating these principles into actions on the ground.

In the past this has often been seen as an issue of "conditionality", with resource flows from the ESA being "conditional" on actions by the recipient. It is now generally understood that this adversarial relationship severely undercuts the policy goals which are being sought. The corollary is that there is now broad acceptance of the importance of the "ownership" of policies by developing countries themselves and recognition that without such ownership policies can and will not be sustained.

And here a vital and very promising development is the high degree of participation which has characterized both the development of the international policy consensus and the development of policy positions (such as the World Bank's Water Resources Policy Paper described above).

The ideal implementation environment is thus one in which the developing country itself decides that it wishes to reform its water resources management policies in a particular way, and in which it then solicits cooperation in translating this into a reality. In such a context external support agencies can play the appropriate role. They can direct resources, both financial and human, to providing such support.

An example of "good practice" (Box 6, overleaf) is the support given by Denmark and other Nordic countries to Uganda in developing an approach to water resources development. The key point is that the Uganda initiative is not something imposed by Denmark on Uganda, but rather an organic meeting of the minds between the two countries on this issue.

Box 5 – The World Bank's Operational Policy Note on Water Resources Management

THE WORLD BANK OPERATIONAL MANUAL
Operational Policies
OP 4.07
July 1993
Page 1 of 1

Water Resources Management

1. Bank[1] involvement in water resources management entails support for providing potable water, sanitation facilities, flood control, and water for productive activities in a manner that is economically viable, environmentally sustainable, and socially equitable.

2. The Bank assists borrowers in the following priority areas:

(a) Developing a comprehensive framework for designing water resource investments, policies, and institutions. Within this framework, when the borrower develops and allocates water resources, it considers cross-sectoral impacts in a regional setting (e.g., a river basin).

(b) Adopting pricing and incentive policies that achieve cost recovery, water conservation, and better allocation of water resources.

(c) Decentralizing water service delivery, involving users in planning and managing water projects, and encouraging stakeholders to contribute to policy formulation. The Bank recognizes that a variety of organizations—private firms, financially autonomous entities, and community organizations—may contribute to decentralizing water delivery functions. Thus it supports projects that introduce different forms of decentralized management, focusing on the division of responsibilities among the public and private entities involved.

(d) Restoring and preserving aquatic ecosystems and guarding against overexploitation of groundwater resources, giving priority to the provision of adequate water and sanitation services for the poor.

(e) Avoiding the waterlogging and salinity problems associated with irrigation investments by (i) monitoring water tables and implementing drainage networks where necessary, and (ii) adopting best management practices to control water pollution.

(f) Establishing strong legal and regulatory frameworks to ensure that social concerns are met, environmental resources are protected, and monopoly pricing is prevented. The Bank requires legislation or other appropriate arrangements to establish effective coordination and allocation procedures for interstate water resources.

These issues are discussed in the project documents.

3. Individual water lending operations are explicitly linked to the country's priorities for reform and investment and to the Bank's program of support.

4. If inadequate progress by borrowers in these priority areas leads to serious resource misuse and hampers the viability of water-related investments, Bank lending is limited to operations that provide potable water for poor households or conserve water and protect its quality without additionally drawing on a country's water resources.

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1. "Bank" includes IDA, and "loans" includes credits.

Note: This document is based on *Water Resources Management: A World Bank Policy Paper* (Washington, D.C.: World Bank, 1993). It complements OD 4.01, *Environmental Assessment*; OD 4.02, *Environmental Action Plans*; OD 4.20, *Indigenous Peoples*; OD 4.30, *Involuntary Resettlement*; OD 7.50, *Projects on International Waterways*, and OD 14.70, *Involving Nongovernmental Organizations in Bank-Supported Activities*. It also draws on OMS 2.22, *Financial Performance Covenants for Revenue-Earning Entities*, and OMS 3.72, *Energy, Water Supply and Sanitation and Telecommunications*. Questions should be addressed to the Director, Agriculture and Natural Resources.

Box 6
Water Resources in East Africa -- the Nordic Initiative and the Entebbe Report

A major pre-Dublin activity was "the Nordic Initiative on water resources management". This initiative involved about 50 people from both ESAs and developing countries, who worked together to formulate some key principles which were more or less directly incorporated into the Dublin Statement. Several of the participants were from Nordic countries, and several were key policy-makers from East Africa.

As a follow-up to Dublin/Rio, and as part of the ongoing Nordic Initiative, an East African Water Resources Seminar was held in Entebbe, Uganda, in May 1993 as a next step in translating the Dublin/Rio principles into practice in that region. The Seminar was attended by 60 people, among whom several had participated in the Nordic initiative since its inception and had played key roles in Dublin.

The outcome of Entebbe were recommendations to the countries on the following key issues

- the roles and functions of different management levels
- Cross sectoral integration mechanisms and guidelines
- Economic analysis, pricing and charging
- The legal and planning framework
- Water resources assessment, monitoring and information management and
- Capacity building

What is significant about the Entebbe Report is that it represents continuity with the Copenhagen/Dublin/Rio work which had gone earlier, and constituted ongoing support to committed developing countries in translating the Dublin principles into practice in their countries.

Participation, at many levels and in many contexts, is the key to implementing "the new consensus". It is vital that "participation" not be considered as something automatic, or that it be merely a slogan of political correctness. Rather, it is vital to recognize that there are three key pre-conditions for successful participation. Participation must be able to make a difference, participation must be informed and capacity must be built for participation. Each of these is elaborated on below.

The "participation must make a difference" principle means that major decisions on policy, on priorities and on mechanisms must be affected by such participation. The "participation must be informed" principles means that high priority must be given to providing user-friendly, relevant information to all stakeholders relevant to a particular decision. This requires a culture of accountability and transparency, ranging from the five-year investment programs of basin agencies to the operational performance of water companies.

The "capacity building" principle is crucial. Of overriding importance is the construction of an "enabling environment", in which there are incentives for individuals to "do the right things". Once this is done, then there is much that can be done to enable them to "do things right". In the water resources this action necessarily takes place at a variety of levels. At the most macro level, managers and technicians need to be trained to understand the core elements of macro (say basin-level) water resources management. Here, as described earlier, the best starting position for an ESA is to have good practice in its country. Accordingly a particularly

effective source of capacity building on water resources management has been carried out by France, in adapting the French river basin system to the realities of several developing countries and countries in transition. Box 7 outlines the nature of French support to Brazil at the river basin level.

Box 7
French-Brazil Cooperation -- the Rio Doce Project

The French River Basin management system is the industrialized country "model" which most completely embodies the Dublin/Rio principles. In translating these principles into practice there are two particularly large cultural changes which have to be made -- involving stakeholders in making policy, and the use of economic instruments for generating investments and managing the resource.

Given these fundamental cultural issues, a particularly important form of cooperation involves twinning arrangements in which professionals from the French basins work with counterparts in developing countries. The French government is financing several such efforts, in Indonesia, Peru, Venezuela, Poland and other countries.

An interesting example of such cooperation is that of the development of a river basin approach in the Rio Doce River which includes parts of the state of Minas Gerais and Espirito Santo in Brazil. A four-year cooperation effort between the Governments of France and Brazil started by doing technical work on the basin. This work had several direct and indirect objectives. The direct objectives were to produce the sort of information which is produced by the basin agencies for the basin committees in France. Principal among these are:

- simulations of the effects of different levels of investment on environmental quality;
- a procedure for ensuring that resources for water resources management at the basin level are used for the highest priority purposes; and
- the levels of user and polluter fees which might be imposed on municipal, industrial and agricultural users of water and land.

The indirect objectives were equally important. Principal among these is stimulation of a cultural change along two axes -- in legitimizing the process of management by stakeholders and in the use of economic instruments. Accordingly the project paid a lot of attention to stakeholder participation in formulation of proposals, even thought there was no certainty that the basin concept would eventually be put into practice.

Through this ingenious process legitimacy of the approach was, indeed, established. The national water law is now being rewritten so that the basin financing approach is allowed. And it is expected that the Rio Doce will be an early application.

Building on the success of the Rio Doce cooperative effort, similar efforts are being undertaken in the Rio Paraiba basin (including parts of Sao Paulo and Rio de Janeiro states) with support from the Government of France and in the state of Ceara in Northeast Brazil (with support from the World Bank).

At lower levels, too, there is much to be done in terms of capacity building. Once again a key is to have the incentives right, both for individuals and for institutions. An impressive example here is the training that is done by private water sector operators when they obtain long-term operating contracts in developing countries. In the longest-standing concession contract in the developing world -- in Abidjan, Cote d'Ivoire, where the system was put in place in 1960 -- management was initially dominated by French nationals. For several reasons -- including the legitimate political motive of generating a domestic constituency for the system, and because the cost of a national manager is a fraction of the cost of a foreign one -- the company which was awarded the concession contract engaged in a vigorous training effort at all levels. Over the 30 years of the concession, despite a very substantial expansion in service, the number of foreign nationals in the company declined from about 40 to about 10. Similar intensive training programs are a feature of similar contracts in other countries.

When such "enabling environments" are in place, then a whole variety of other capacity-building initiatives can and should play a major role in development cooperation. A good example is the range of capacity-building efforts executed by the UNDP. These range from the stimulation of domestic training centers and training networks (via the International Training Network and other programs), to "partnerships" for sharing knowledge of successes and failures (such as the new UNDP/World Bank "Utilities Partnership"). An important recent development (at the Interministerial Meeting on Water and Sanitation in Noordwijk, Holland) is the recognition that water and sanitation capacity building is a legitimate element of UNDP's Capacity 21 initiative which was mandated at UNCED.

Issue 4: Learning

The fourth and final issue in translating "the new consensus" into practice is that of learning. There is little doubt that "the new consensus" principles are appropriate. Where there is great uncertainty is how such principles can and will translate into practice in particular economic, social, cultural and environmental situations. What is clear is that finding answers in particular circumstances is a very formidable challenge, requiring an intensive process of assessing what is working and what is not working, understanding the reasons for both success and failure, and drawing lessons from these. It is also clear that this learning process will be more efficient if it is systematic, disciplined and rigorous. And finally it is clear that this learning has to take place at a variety of levels, ranging from the international community to local communities. It is an important task of the ESAs to stimulate such a learning culture in the developing countries. And to do this convincingly and successfully it is essential that the ESAs themselves approach the long-term task of successful implementation with this learning focus. Box 8 outlines an approach being taken within the World Bank to develop such a learning process on water resource management issues.

Box 8: The World Bank's Water Resources Learning Group

WHY A LEARNING GROUP?

In May of 1993 the World Bank's Board approved the Water Resources Management Policy Paper. On the basis of the Policy Paper, OP 4.07 was issued in June of 1993.

The Policy Paper has been widely praised both because of the process used in formulating it and because of its content, which closely parallels that endorsed by the international community in the Dublin Statement, and as reflected in chapter 18 of Agenda 21 of the Earth Summit in Rio.

The big question which now faces Bank staff and borrowers is translation into practice of the fundamental principles of the Bank Policy Paper, i.e., "...The adoption of a comprehensive policy framework and the treatment of water as an economic good, combined with decentralized management and delivery structures, greater reliance on pricing, and fuller participation by stockholders."

This process of "operationalizing the Policy Paper" raises a large set of substantive issues, on many of which relatively little is known. Accordingly, the World Bank instituted a Water Resources Learning Group in late 1993. The basic objective of the Learning Group is to use the material emerging from the Bank's operational support activities to learn about the substantive issues which emerge in applying the Policy Paper, and to analyze and disseminate these so that implementation can be improved.

WHAT QUESTIONS WOULD THE LEARNING GROUP ADDRESS?

The work of the Learning Group can be thought of as a matrix in which there are issues on the vertical axis and places (countries/basins etc.) on the horizontal axis. Some sessions of the Learning Group focus on a place (Tanzania, say), describe the substantive issues (how to integrate agricultural, hydro, water supply and environmental concerns; water as an economic good; stakeholder participation and other institutional issues, etc.) and describe how the operation or research work is addressing these. In other instances the session of the Learning Group focuses on a particular issue (say, water markets) in a variety of settings.

Over time the Learning Group will "fill out the matrix". That is, the Learning Group would expect to develop a detailed understanding of the substantive issues in different contexts, and detailed information of what has been learned about these issues in a variety of settings.

THE "CULTURAL" OBJECTIVES OF THE LEARNING GROUP

The issues of water resources management are inherently contentious and are ones on which a wide range of interpretations is often possible. What the Learning Group hopes to achieve is a spirit of "respectful contentiousness". The objective is an open discussion of substantive issues, not simply information on what is being done. And presenters expect, and generally welcome, challenges to the approach they have taken to the substantive issues.

OUTPUTS FROM THE LEARNING GROUP

Several "outputs" are anticipated from the Learning Group. First and foremost, Bank-financed projects which have water resources components should be substantially improved as a result of the critical discussion in the Learning Group. Second, the discussions at the Learning Group are giving rise to joint, cross-sectoral work on particular aspects of water resources management (to date including work on the opportunity cost of water, and users' groups in both irrigation and water supply). Third, since in May of 1995 Bank management has to report back to the Bank's Board on progress on implementing the policy paper, the discussions at the Learning Group would be oriented explicitly to (a) getting a "map" of relevant Bank operations and (b) developing a clear, substantive understanding of experience developing through operations support work.

Issue 5: Internationally shared river basins

All of the above actions are actions which ESAs can and should take in support of appropriate activities at "more central levels" in the "responsibility rosette" shown in Figure 1. There is only one set of issues for which "the lowest appropriate level" is the international level, and this is with respect to internationally-shared river basins and aquifers.

International issues related to the sharing of mutual water resources are important as a possible source of conflict between riparian countries. In several regions of the developing world, water already plays an important role in international conflicts. Particularly where water resources are a limiting factor for development, conflicts are likely to arise. In future, under the influence of population growth and economic growth, these conflicts are likely to become more numerous. International rules on the use of water of international rivers have been developed long ago, the Helsinki rules, and a law is under preparation but this issue is not likely to be solved through international law by itself.

In such situations the OECD countries can, first and foremost, behave well and point to their own "good behavior" as a model to be emulated in developing countries. In this context agreements on joint management of water resources (such as the agreements governing management of the Rhine River and the Great Lakes) are of enormous importance both in the moral sense and as practical examples from which lessons can be learned. Where political circumstances are appropriate (as in the ongoing discussions on peace in the Middle East), the OECD countries can act as honest brokers and facilitators in helping riparian countries come to equitable and enforceable agreements on the management of international waters.

CONCLUSION

Massive improvements can be made in health, economic efficiency, equity and the environment through better management of water resources. The good news is that there is a clear "new policy consensus" regarding the principles for financially and environmentally sustainable development in this area. The bad news is that this will require fundamental and often difficult and contentious changes in practices that have been long established and in which large vested interests are at stake.

The OECD countries have an enormous opportunity to help developing countries realize the benefits of putting these principles into practice, and are well-positioned to do so. This DAC meeting can make a signal contribution to implementing Chapter 18 of Agenda 21 by providing developing countries with the sorts of supports described in this paper.

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