

POLLUTION PROBE

MANAGING SHARED WATERS
Day 2 - Institutional and Participatory Frameworks
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I'm just here to be time-keeper, and to make a few announcements, but I wanted to welcome you to our second day of Managing Shared Waters.

Today we will be focusing on Institutional and Participatory Frameworks. We've got some excellent discussions this morning. The sessions throughout the day are going to be exciting, so I really encourage you to be there and pitch in.

Without further ado I wish to call upon Doug Barnes, who's the Assistant Deputy Minister of the Ontario Ministry of Environment and Energy to introduce Herb Gray. Doug?

Doug Barnes - Assistant Deputy Minister of the Ontario Ministry of Environment and Energy

Thank you very much.

I wanted to begin by thanking the organizers for the opportunity to be here, and to welcome everyone, and to introduce the chair of today's session.

I'd like also to commend Pollution Probe, Coastal Zone Canada, United Nations University for putting together what I think, today, is a very excellent agenda.

Here at Managing Shared Waters Conference we'll be hearing from some of the leading authorities on sustainable development of coastal zones. This morning will be no different.

I'd like to start by first of all welcoming everybody on behalf of the Ontario government, and to highlight one of the notes we made the other day which was in fact to re-emphasize that on the Canadian side of the Great Lakes - which is one of the greatest shared waters in the world - Ontario is the only sub-national government and so we have a big, big responsibility.

And as part of that, we have an agreement with the federal government. It's just been recently signed and announced. It's called the Canada Ontario Agreement. And this is an on-going relationship that we've had now for over 30 years in terms of formal agreements and formal working relationships to improve and manage the Great Lakes.

I'd also like to just promote a few things. First of all, we also have a booth downstairs, and I'd welcome everybody to go there. At the booth you can get copies of some of our most recent announcements, including copies of the Canada Ontario Agreement.

It's now my pleasure to turn the podium over to a man whose career is the very definition of public service. In fact, it is now exactly 40 years and 7 days since the Right Honourable Herb Gray was first elected to the Canadian House of Commons.

Of course, Mr. Gray resigned from the House this past January to become the Chair of the Canadian Section of the International Joint Commission. Still, he holds the longest record for continuous service in Canada's federal government.

The International Joint Commission was put in place originally to deal with boundary water disputes. Subsequently, over the years, the role was expanded by both federal governments of the United States and Canada to include an oversight role in terms of dealing with both cleaning up and managing the quality of the water in the Great Lakes.

It's not just the title or the number of years of service that define the Right Honourable Herb Gray. Rather, it's the dedication and ability he has brought to every position he's held.

Beyond his significant achievements, Mr. Gray is also a life-long resident of the Great Lakes, being born and raised in Windsor, Ontario.

Please join me in welcoming the Chair of the Canadian Section of the International Joint Commission, the Right Honourable Herb Gray.

Rt. Hon. Herb Gray - Chair, Canadian Section, International Joint Commission

Well, good morning, everyone. I'm very pleased to be here today to share this important session of this important conference, and I want to thank Mr. Barnes for his very kind remarks.

It enables me to explain why I was very happy to move to this new kind of public service as Chair of the International Joint Commission, Canadian Section, because my entire public career has been connected with the kinds of transboundary issues it deals with, and I'm glad to bring this accumulated knowledge to bear in this position which leads me to have the pleasure of chairing this session today.

Now, this morning we'll be turning our attention to institutional instruments and partnerships for sustainable coastal development, and the challenge involved. We'll be taking a

look at the issue from a global perspective, as well as closer to home here in the Great Lakes, the fourth coast of Canada and the United States.

And I've already said how this topic is of great interest to me as Chair of the International Joint Commission, Canadian Section, and I want to take a minute or two to say something about the Commission. It's a unique organization, an organization which could be one of the responses to the challenge. The Commission is an international organization based on the treaty signed in 1909 between the United States and Canada. It's composed of three commissioners appointed by each country, two of which are the equal co-chairs.

Now, it's not an arm of either the U.S. or the Canadian governments, and commissioners do not represent, take instructions from, or report to the governments which appointed them. As a result, they can and must function as a neutral and independent body.

The transboundary matters dealt with by the Commission are in effect, therefore, being considered by a third party, but one which has some connection to the two governments. This has the advantages of overcoming the inequality of power between the two players of different sizes and economies, and taking it - somewhat, at least - out of the political sphere. At the same time, the facts of the issues can be decided objectively and impartially by the Commission.

Now, one of the Commission's important features is its consensus-based fact-finding. The Commission normally establishes an expert board to advise it on the issues which it has to deal with, or it uses one of its existing boards. Now, these boards have an equal number of Canadian and American experts on them, all of whom are acting in their personal and professional capacity and not as representatives of their home agency or country.

Another noteworthy feature is a requirement in the Boundary Waters Treaty - under which the IJC has been formed - that the Commission must give a convenient opportunity to be heard to any party and any matter before the Commission. And therefore public input, public hearings, are a major component of the Commission's work.

Now, we consider ourselves fortunate in Canada and the United States to have this institutional structure which has certainly withstood the test of time. The Commission will be celebrating its 100th anniversary in 2009. We're also fortunate that the Great Lakes provides 18% of the world's fresh water, though I note an article in the *Globe & Mail* this morning where a retired scientist says we don't have as much of the water in Canada as we think accessible to us.

Now, not all parts of the globe are equally blessed, and our keynote speaker, Margaret Catley-Carlson, will challenge us about the global situation and how to manage on a sustainable development basis shared waters which form transboundary coastal ecosystems.

Our keynote speaker is chair of several organizations which apply science and knowledge to the better management of national and international problems, like freshwater governance and agriculture. Of particular interest to us today is her position as Chair of the Global Water Partnership.

I first knew and worked with our keynote speaker when she was a senior Canadian official and later diplomat, and she's been involved in water issues for more than ten years. So we are indeed honoured to have her share her views with us today, and please join me in welcoming to the podium Margaret Catley-Carlson.

Margaret Catley-Carlson - Chair, Global Water Partnership

Thank-you very much for that introduction, Herb, and it's a delight to be with you again. We haven't seen one another for about two years and then got to be together twice in one month.

Well, let me begin by thanking you for inviting me and congratulating the conference organizers. Everybody here that I've talked to so far is unanimous about the superb organization that has gone into this, and that's the first step to really moving towards a good result in terms of really sharing the kind of information that leaves people going home determined to do things a little bit differently and a little bit better, so congratulations to all of you. The purpose is certainly a noble one.

I want to talk today with you about four things, why things have to change, the general direction of change, and then because this morning's topic is the institutional arrangements that are necessary to promote change I'll describe one institutional arrangement - of which I am the chair, the Global Water Partnership - because I think it has some characteristics and appurtenances that might be useful as you - who are more interested in the coastal zones - as you consider what the ideal or the better functioning institutional arrangements are. And then I want to provide some reflections on laws, hierarchies, networks and partnerships.

So, that's the trip that I propose to take us on this morning.

First of all, why do things have to change? Well, you will have spent a good deal of time, and the literature you've been provided for this conference talks a lot about the degradation and the difficulties in the marine-based water environment. For fresh water, the situation is dreadful, and of course it is in part how we manage fresh water that has such a deleterious effect on the coastal zone and one marine resources.

Seen from the aspect of land management, of management of land and water resources, there are huge problems. Water tables are declining and there are so many rivers that now no longer reach the sea, with dreadful effects on mangrove, on deltas, on coastal zones, on coral seas. These are big rivers, too, the Colorado, the Elu(?), rivers that empty into the Russian north, the rivers that used to feed the Aral Sea, but all over the world people are discovering that their river simply doesn't flow anymore, and this happened of course in western Canada for one of the first times this year, to discover that the river is not a perennial and perpetual feature of life.

There are a billion people with no consistent access to fresh water. Obviously they have some; otherwise they wouldn't be alive, because water is a necessity of life. Twice that number has no access to sanitation. That's a dreadful problem in terms of human dignity, in terms of development, because if there are no washrooms in schools girls often can't go to schools. Girls who don't go to schools have higher fertility rates. It is a miss in terms of their own capacity, it adds to population issues around the world, and so therefore the lack of sanitation is a complex issue that plays out through many facets of development.

The lack of sanitation also means degradation of the environment, because we're simply not looking at the sanitation issue as an environmental as well as a human dignity issue, and a human health issue.

Freshwater aquatic species are in peril - I'm sure you've talked about that - and deltas and wetlands are disappearing.

Aquifer levels are falling. Water quality everywhere is in decline. And yet the situation is going to get worse before it gets better. Half of humankind lives within 100 km of a coastline, and yet that 100 km boundary of our land mass is only 22% of the world's land area, and what is going to happen is that with the current rate of population growth - which as you all know is still very high, although tempering off - urbanization is proceeding twice as fast. And so therefore

that burgeoning mass of people in urban areas in or very close to the coastal zone is going to continue to increase, both because of natural increase and because of continuing rural exodus.

In fact, by about 2020, poverty may no longer be the major characteristic of the rural areas; it will be a characteristic of the urban areas. And of course, the poverty factor is what makes managing this situation so very difficult, because people are clustered in cities which do not have a tax base. Jane Jacobs is right when she says if you organize people in cities it makes it easier to provide services, including sanitary services. But when you've got about 60% of all cities growing at current rates and when they already do not have the services they need, have no appreciable tax base in terms of either having set up the tax system or the income levels that would provide for a tax base, there are real problems in the sense that you can't just say, 'Well, we need to build the water infrastructure.' There's a major issue of financing.

And so therefore, as I say, the situation on the land side is going to get worse before it gets better because of continuing population pressures, because most cities are on the coastal zone, and because most of those cities, in the next 20 years, will not have the wealth that creates the tax base that allows this to start changing, and we don't have the financial mechanisms to really make the change.

Some day it will get better, but the question is what will that "some day" look like if we can't act now?

There is conflict, and there is competition. The stuff that gets the headlines is the Jordan River and the Tigris Euphrates. The real competition is the everyday competition for water. Irrigation takes about 80% of the available fresh water use that the world uses, and only about 17% of the world's agriculture is irrigated, but it provides 40% of the food that we eat, and so therefore you can see that irrigation adds enormously to the productivity of land.

Now, as you add another three billion people, how do we feed those people? And the answer is, well, of course you irrigate more land. Except what water do you use, because that water is already needed for other things, and if irrigation is already using 80%, how can that 80% expand? Plus, when you mention expanding that 80% figure to anybody working on the environmental side their eyes roll backward already. So the idea of increasing that irrigation number is seen as something which is not realistic. Industry is going to need 20% and drinking water needs are projected to grow by 70%.

Here's a figure to remember. When global population trebled - which it did since about 1950, in other words, we added about three billion people - water demand rose six times, and we're going to be adding another two to three billion, and we're going to be adding those people in circumstances where development has meant that their water needs are even higher, because as people develop, and as development situation increases and improves, the water demand for water per person goes up. If you live a better life you want more water for washing, more water for food, more water even for gardens and things like that.

It's difficult to fix these situations because we still have laws, rules, institutions, and regulations that are based on a planet in which there was much more water than there was demand for that water. In other words, our thought patterns and laws are probably built around having about two billion people on the planet, and having about the same amount of available water. As a result, we organize our thinking about water on a sectoral basis. In other words, we organize it on how we want to use it, so the Minister of Irrigation, the Minister of Transport, the Minister of Fisheries, the minister of all of these things, we organize the way we look at water in terms of its economic use to us rather than in terms of the actual health and well being of the water itself.

So, this means that traditionally there has been no ministry of water in most countries. South Africa now has a ministry of water. Israel has a ministry of water, although that goes back and forth like a political football depending on which party is in power. But countries with real water scarcity are beginning to realize that you have to organize around fresh water itself and not around the uses that humans wish to make of it.

But most countries - certainly including Canada - have no ministry of water. The Environment Ministry has tried to play that role, but they are also trying to cover various sectoral concerns.

There is, therefore, on the international level, no UN water organization. The UN organizations relate to the domestic ministries. We have ministers of agriculture, so therefore we have FAO. We have ministries of science and culture so therefore we have UNESCO. All of these things emanate outwards. Since there are no ministries of water and there is no international organization of water.

Most governments' major job in the water area is delivering water to their citizens rather than really getting on with the task of regulation.

Another bedevilling factor is that many believe that water should be low-cost or no-cost, so therefore you don't have a lot of rent from water in order to try and make the situation better.

And, of course, water governance and expertise are organized sectorally.

There is something emerging which I call a new "waterthink", which says that governments should put their first priority on establishing the policy and regulatory framework, that new institutional frameworks will probably be needed that take account of this cross-sectoral reality, and that we also need to start looking at the resource itself, the availability of it, the condition of it, etc., and then start factoring in how it is that we, as humans, and the environment, need to use this water, rather than by starting with the use pattern.

We certainly need transparency about existing subsidies, and we probably need some movement towards full-cost pricing, or some-cost pricing, or some pricing of even just the organization and maintenance costs, to try and get those who are using water for economic purposes to get their use patterns, at least, in accordance with some rational use. And we need to establish that problems indeed are cross-sectoral.

Governments need to be a little more open, and it was very interesting listening to the IJC example where public hearings are absolutely a part of the process. Public hearings are more and more a part of the process in the industrialized world. Meaningful public hearings are still not an acknowledged and accepted process in many parts of the developing world. The European Community, in their new water law - which is one of the most interesting and progressive pieces of law - it is causing an awful lot of money to be spent on waste water treatment - also has obligatory and mandated formats for public consultation.

So, public consultation is an essential part of water reform, and it's a very difficult part because, as I say, in many countries it is simply not a habit yet.

So, what we need, in short, is to re-think demands on current uses of water. We've got a fragmented system, we've got a system that is basically built by the users of water, but it's a system built on the belief that we will always have enough.

So what do we need to do? Turn it around, to put in place what our organization calls integrated water resource management, IWRM. It's a mouthful, and the title is up there. Those

of you who are involved directly in coastal zone management will recognize a very close approximation to the definitions that you use. We're all thinking the same way. We're saying we need to bring all of the users to the table, we need to look at the use, and we need to remember that there are future generations coming. It's very reminiscent of ICM.

But the problem is how to change our attitudes in ways of using and managing water. Once you've got a group like those in this room committed to that, what do you then go out and do? How do you change the world once you have decided that this needs to be done?

As I say, the situation is very much the same. The coastal zone is where integrated resource and water management has to come together, in the coastal area, and you need institutional and participatory frameworks.

So, three questions, how to make it happen; what kind of policies, organizations and instruments; and how to arrange the communication and backstop.

Now, you've got 40 years of experience, and I understand that there's about 700 hundred sites where integrated coastal management has been worked on and tried in the last couple of decades, so I feel quite modest even about sharing experience of an organization just six years old. But I think all institutional experience needs to be shared so that you can glean from it what might be useful. So here goes.

The Global Water Partnership is first of all a network. Our emphasis is in the regions and countries particularly of the developing world. We've got nine or ten operational regions with four more being set up.

It's based on quite a subtle concept; first of all, starting with the realization that current management methods don't work. We talked about that in the first part of this. We also believe that there's a wealth of world-wide experience. In other words, what needs to be done right is probably being done somewhere now therefore the task is to bring together the stakeholders, to bring together folk like this who care about these issues on a global basis - and if you can't bring them together physically, bring them together electronically - and create a knowledge base of what's being done where, so that we can over time we can begin to do two things, agitate for better forms of governance, have the tools in hand, share these and have a conviction about how things should be done.

Now, we need to, as I say, create collective action for analysis, problem solving and identification, and I quoted one of the messages from your document, here. The message for ICM practitioners is simple: learn from the past; teach it to your neighbours. What the Global Water Partnership does is institutionalize that principle. We are that principle. We don't do anything, we don't have projects, we build alliances. If you go across the top you can see... and every time somebody brings together a global water partnership we insist that, to the maximum extent possible, this template is covered. So, in other words, on one side there have to be people from hydrology, water supply, sanitation, agriculture, environment, industry, energy, economic planning, social planning, etc., and there also have to be multi-stakeholder people; people from central government, local government, private sector, academia, local civil society, community organizations, women's groups, etc., on the other side.

And so therefore the platform that anybody builds, if it's going to be called Global Water Partnership, has to contain those elements within it. It's not perfect everywhere, but that's the starting point; the idea that you cannot just bring together people that are concerned about one dimension of the issue and expect that you're going to create institutional change.

The stakeholders then build partnerships. The local initiatives come from the stakeholders. We support them, in GWP, but we're not in the driving seat. There's a lot of spontaneously emerging partnerships. I continually get e-mails saying the Philippine Country Water Partnership has just been set up. I have, here, the Vietnam Water Partnership which was born, I think, earlier this year, and I was looking through to see what they think they're going to do. They say they're going to organize workshops for exchanging national and international experiences as well as introducing advanced scientific and technological achievements in the field of integrated management, utilization, protection and development of water resources. The president of it is the Vice-Minister of Agriculture and Rural Development, and the chair is the Vietnam Institute for Water Resources Research.

So, each one of the GWPs looks very different. It depends who comes together, but they are supposed to be organized basically around that template of the multi-stakeholder directive.

They're also supposed to raise political will, and raise awareness. In other words, go and target decision-makers. As you can see in Vietnam, they start with the decision-makers - but we start by trying to help each of the country water partnerships or regional partnerships understand

how to mobilize political will and how to raise awareness. You start with the thing that is uppermost in mind. I mean, South America, for example, focuses on long-term gains from integrated floods management. We keep reading in the headlines about the horrific floods in Venezuela, also in Colombia, also in Brazil, mostly the result of deforestation.

And so if you start with a process which is targeted toward gains that could be made from a different approach to flood mitigation and flood management, you're likely to get the attention of senior decision-makers.

The work of the China Group is focusing on economic instruments that could be used for water managing. This is the language which the Chinese government, at the moment, is most interested in.

In Lithuania, the GWP has set up an advisory team to the Environment Minister to help Lithuania adjust everything it's doing so that it can meet the access requirements of the European Economic Community Water Directive, which will be necessary if Lithuania is going to enter into the GWP.

So, the focus is to start where countries are, but then to move - always with the IWRM template in the background - towards making water management better.

What are the tools we use? Well, one is called a toolbox, and I would urge each and every one of you to go and look at it. All you have to do is type in Global Water Partnership, or GWP Forum, and then type in "toolbox", and you will see that the toolbox is something that has been created by the freshwater community to provide practical information and guidance for putting IWRM into practice. It offers a compendium of over 50 tools under three major headings, and I'll describe those.

The toolbox - the first version - was launched in December, and it's available in electronic and hard copy.

What does it do? We talk about three areas. The enabling environment, which is the general framework of national policies, legislation, regulation, and information, so that if in a country - which is happening, now, in about 15 countries of the world - there is an interest in changing the water law, or perhaps creating water law, what we provide is a look at the global experience in water laws. This doesn't mean that if Botswana changes its water law that the Chinese water law is going to be perfect for them, but if they take five water laws and look at

what is covered in those laws, what responsibilities are assigned, what tasks are put in, what relationships with the environment are sketched out, from this emerges a good basis for a dialogue being provoked in that area.

We then look at the institutional roles and functions, very important indeed because one of the big questions is should there be an APEX body for water administration.

And then we look at the management instruments or tools for effective regulation, monitoring and enforcement.

In the coastal system, what we'd be looking at would be those tested instruments that have mitigated the impact of land-based activities. The IGAC is an outstanding example. Also, it needs community analogues, and you'd need to look at the local, regional, national and transboundary institutional frameworks. What we do is look at these on the land-based side and put them into a toolbox so that you've got an instantly-accessible series of tools that have been used.

Now, the last part of what I want to talk about is what makes a great institutional framework. I've given you why things have to change, the fact that we know the direction of change - which is integrated water resource management, or coastal management - and given you a little look at one of the organizations that is based around creating that change by building national platforms, by creating an information network for exchange and by being a reinforced network for actually creating platforms to promote political change.

What defines a great institutional framework? Well, basically a great institutional framework makes people want to act, and it has the legal and economic instruments that really make for effective use and needs. It provides appropriate roles for the public, private and NGO sectors to help define the problem. In other words, everybody gets in.

Laws, hierarchies, markets, networks and water. There's lots of ways you can go about creating those institutional frameworks. The current government structures that we already talked about are not particularly well-aligned with the current needs of the water sector for governance. There's no use saying markets or hierarchies will take care of it. They have their role, but they also fail. In other words, they have limits. The market system will work well to do some things, but there will be market failure at the edges, and so therefore what you need is to acknowledge the strengths and then build in buttresses against the weaknesses.

Networks and partnerships can function in conditions where other governing structures don't. Networks work best when the following conditions apply, when you've got a group of people - for us, world-wide - that need reliable information, where you don't try and define quality, you let people develop their own definition of quality, where professional discretion and expertise are essential - because you're usually dealing with scientists, engineers, people with very high standards - and flexibility to meet localized and varied service demands is there.

Partnerships are a little different from networks and they're worth the bother. With a partnership we have what we call a reinforced network. The primary task is information exchange, but we reinforce it, in other words some money flows through it in order to accomplish certain tasks.

Partnerships are quite different. Partnerships are entities that pull together those that have undertaken obligations to actually do something about a particular issue. In other words, partnerships are more dynamic than networks, and so therefore over and above our network we have the global water partnership. It says that more than the official view is needed. It says that the official view is important. Our effective partnerships include governments; not all of our partnerships do though. It depends on how the partnerships are established locally, but it is built on an awareness of government limitation, in other words it does not expect governments to do everything, and it does recognize the stress on government spending which exists in most countries. Therefore there's no use just building up agendas and handing them over to the government and saying, 'Here, do this.'

It recognizes that new capacities are needed. The private sector, as I say, has certain great strengths, and there's also market failure. Those two realities have to be combined. NGOs have enormous strengths, and they can bring in women, ethnic groups, and interest groups, but they often are single-focused. And civil society, i.e. those who are the receivers, the clients, etc., need to be brought in, because if they're not brought in their resistance to what is being talked about will ultimately topple the system.

For partnerships to work there has to be a complete acceptance of the fact that success is outside of the purview of those trying to create the change. In other words, you have to accept the fact that as much as you care about coastal zone management you can't make the changes that are necessary without creating real partnerships, and that going over and over and over the

science or the reality or the figures or the data will not change the situation unless you can create the partnerships that can actually cause that dynamic change.

For example, I worked in a population council before this, and maternal mortality is one of the issues that we looked at, and we realized that to solve that issue the partnership that was going to have to be created was with entities such as local taxi drivers, because getting a woman to a place where she could be assisted with a difficult delivery is the single largest factor in actually making a different maternal mortality outcome, and so therefore your hospital administrators might be a better ally than your doctor.

So you really have to think through who has the same interest in the partnership, and who will be going along that mile.

Willingness and capacity to adapt to new working methods and willingness to move out of analytical mode into real listening is enormously difficult for the science community and the engineering and the expert community because they're so immersed in the reality of the problems that it's difficult for them to listen to how somebody else sees that particular problem.

Partnerships absolutely mean new working methods. It's not easy or automatic. When you have a partnership you're working with people with very different working methods. Time frames and budget lines are all likely to be in conflict, but the most important and the most difficult thing is that a partnership has to settle around the definition of the problem and not my solution which I'd like you to be there to help implement.

So, there has to be a collective problem definition, which may not coincide exactly with the list of the problems as seen by the science community or as seen by the research community. It has to centre on the problem, first and then the solution.

Well, understanding solutions will not be found in great technical advances. Moving towards a holistic approach, getting the people together, finding the tools they need, being willing to turn existing structures upside down, and bringing civil society to the table is needed.

Meeting demands for water security. Well, let me end with my convictions on this. Quality and quantity will increasingly depend on non-structural solutions. In other words, it won't be just the formal structure of the government departments or the formal structures of the regulatory departments, it will be the non-structural support that we can create for these. We cannot solve water problems just by looking at regulations. We have to re-think the demands and

current uses of water. Until we can disengage water from toilet flushing we're probably unlikely to make an awful lot of progress, either in the degradation of the coastal zone or in the hygiene problems of cities.

Solutions to current and coming crises will not be found in new and extraordinary technological advances, although these will help. Desalinization is getting cheaper and cheaper, but it's not the ultimate answer. The ultimate answer has to be in doing some re-thinking.

And partnerships and networks can change attitudes and ways of using and managing water.

I hope I've given you an interesting glimpse into one of these partnerships, and some reflections on some of the institutional issues you'll be considering today as you go through the fascinating and difficult part of looking at the institutional accompaniments to real change.

Thank-you very much.

Herb Gray

Well, Margaret, thank-you very much for that informative and challenging presentation. You not only clearly outlined the nature of the problem but for me, as a layman, the beginning part of your presentation scared the hell out of me! But on the other hand, you also gave us hope by showing us a path forward and a way of dealing with these very difficult situations you outlined, and I hope we'll all bear in mind your solutions as we proceed through the rest of the conference and back to our home territories.

We will now have a panel discussion of the institutional and participatory frameworks which may be needed to manage shared waters involving coastal ecosystems around the world, and I'll introduce each panel member in turn. Each panel member will have ten minutes for his remarks, and then we'll open the floor for discussion and comments.

I also want to indicate that Mr. Larry Hildebrand of Environment Canada's Atlantic region is the MC for the overall morning session, and I guess I have the role for a change as the good guy and he's going to be the bad guy and tell us how much time has elapsed and remains for each of the speakers.

Now, our first panelist is John Karau. He's Director, Oceans Stewardship Branch of the Canadian Federal Department of Fisheries and Oceans here in Canada. He's been working in the

marine environmental field for over 20 years. This morning, however, he will be wearing his hat as the Canadian Lead at the United Nations Environmental Program's, Global Program of Action for the Protection of the Marine Environment from Land-Based Activities.

So, Mr. Karau, I invite you to the podium.

John Karau - Fisheries and Oceans Canada; Canadian Lead, UNEP GPA for the Protection of the Marine Environment from Land-Based Activities

Good morning, ladies and gentlemen, and yes, Margaret, I too felt the world move briefly this morning, and no, I don't think it was my phone on vibrate mode that strong.

Global Program of Action. In essence I want to thank you and complement you on an excellent presentation. Another partnership, quite honestly - and I'm sure your aware of it - is the Global Program of Action.

The GPA was developed in 1995 through a Washington declaration, and in fact what it said, and I think most of you in the room are very au courant; is that there's another transboundary issue, and that's the freshwater environment and the marine environment. It is that land-water interface.

So, one of the challenges, and one of the partnerships that we really would in fact wish to develop and give more institutional strength to and more partnerships for is looking at that relationship between freshwater management and ocean management.

Yes, we do live in a world where, in fact, there is a sectoral approach, very different disciplines and many different stakeholders. But it's through forums such as this, the Coastal Zone Conference, where in fact we can bring people together, where integrated coastal management, as you said, already in fact has the formula, if you like. It's really, in fact, creating those forums where we can bring people together and realize that we do have an awful lot in common. If you look at the problems, they're shared problems. It is, therefore, a matter of saying, 'How can we, in fact, really move forward to the kinds of solutions that we want? And what are some of the barriers to those solutions?'

Well, clearly, nothing happens without public support, nothing will happen without political commitment, and nothing will happen without the right type of investment in the capacity-building that's required to move forward.

I think, clearly, if we look at the international example, you look at the United Nations system, a variety of UN institutions, as you've mentioned, from a fisheries point of view, from an environment point of view, from a science point of view.

One of the things that the United Nations Environment Programme has is a Regional Seas Program. One of the partnerships that they're trying to develop - and I applaud them for it - is to bring those different regional organizations who deal with fisheries management, who deal with oceans management, who deal with science - and now also trying to invite those who deal with freshwater management - to in fact come to that same table and look at what in fact they can do together in a more cost effective way, and to use a different kind of partnership approach.

And that partnership approach needs to really develop, if you like, an investment portfolio. And in that investment portfolio, rather than going out and competing for scarce dollars, being able to take formal proposals to funding agencies including international funding agencies, aid donors - Canada included - and also to look at the private sector, and being able to in fact take those types of integrated resource management proposals and say, 'We are in fact prepared to work in a new way, we are prepared to show you the results of what we've achieved, please come and invest.' Donor coordination, financial coordination, sustainable financing, these are all extremely important features as well.

The GPA clearing house is another mechanism which I think also tries to provide, if you like, a yellow pages guide to most frequently asked questions. What are the problems, what are the issues, where can I find solutions, where can I find the expertise that's required?

I think one of the key ingredients that we certainly know from an integrated coastal zone management point of view is stick-at-it-ness. It is just not going to happen overnight. In fact, it is a matter of continually taking the problems and the issues to where people do make decisions. It means bringing those decision-makers together with the other stakeholders and other interests and trying to find common solutions; trying to find agreements that in fact offer us a positive way forward.

Again I'd like to thank you for a very excellent presentation this morning. If you had a pledge form, I'd sign it.

Thank-you.

Herb Gray

Now, our second panelist is Dr. Michael Donahue. He's the President and Chief Executive Officer of the Great Lakes Commission. Now, that's an agency serving the Great Lakes sub-national governments, the states in the United States which border on the Great Lakes, and largely the province of Ontario, which - as has been pointed out by Mr. Barnes - has the most coast of any province when it comes to the Great Lakes.

Now, I know Dr. Donahue best as the United States Chair of the International Joint Commission Science Advisory Board. As well as being involved in Great Lakes issues, Dr. Donahue has designed and taught graduate seminars on bi-national resource management issues, something particularly relevant to our discussions this morning.

So I now invite Dr. Donahue to come to the microphone.

Michael Donahue - President and CEO, Great Lakes Commission

Thanks very much, and good morning.

I certainly agree that there's a real crisis in water, and I would suggest that the crisis is not limited to the developing world alone. Many of the key points that were raised in the keynote presentation are certainly applicable to the developed world, as well, and specifically to the Great Lakes / St. Lawrence region, and that's where I'm going to focus my comments this morning.

So, in my brief response to the keynote presentation what I'd like to do is focus on four distinct but related issues. First of all, I want to give you a bit of an overview of the Great Lakes Commission to give you a context for my later remarks. Secondly, I'd like to touch upon some of the reasons why I would argue that the term "crisis" does indeed apply to the Great Lakes / St. Lawrence system. Third, I'd like to give you a bit of philosophy about the evolution of the current state of institutional and participatory frameworks in the Great Lakes / St. Lawrence region. And then, finally, I'd like to reference some of the main points in the keynote presentation and offer a few thoughts on parameters for institutional design and operation that can help us both address current crises and avert future ones. And I'm going to do that all in ten minutes, I hope!

My primary point, however, is as follows. Our greatest challenges, in my view, in addressing or averting water crises, are not challenges of science, they are not challenges of

technology, and they're not challenges of engineering. They are challenges of governance, of designing and operating institutions that ensure sustainable use of the resource and provide for a meaningful role for all stakeholders.

So first, let me provide a context for my remarks. My experience in institutional and participatory frameworks is founded in about 20 years of work in the water resources management area, primarily but not exclusively in the Great Lakes / St. Lawrence system.

And my agency, the Great Lakes Commission, is a bi-national agency that is founded to promote sound public policy decisions on water resource management issues and environmental economic dimensions thereof. We're founded in U.S. federal and state law, and augmented by a bi-national declaration of partnership. Our members include the eight Great Lakes states and the provinces of Ontario and Quebec.

And like most other multi-jurisdictional institutions in North America and globally, our functions are not regulatory. Rather, they are advisory, recommendatory, and investigative in nature. So really, our success or our failure is determined more by our powers of persuasion and the types of institutional and participatory frameworks that we develop, that hopefully will facilitate rather than impede progress.

So, in that sense we're an institution that's always changing, and open to change, and our evolution over the years certainly reflects many of the management principles and ideas that we identified in the keynote presentation.

Now, my second point relates to the term "crisis". Our keynote speaker presented a fairly vivid picture of desperation globally when it comes to water access, water management, and water quality, both globally and in particular in the developing world.

So how can we possibly use that same term of "crisis" here in the Great Lakes, one of the wealthiest regions in the world, with a fifth of the Earth's fresh surface water, and arguably the most sophisticated inter-jurisdictional system for governance on the planet?

Well, I would suggest that the term is still appropriate. In just a few short decades we've been on the brink of ruin and we've been on the cusp of recovery, and we've realized that it's a very fine line between the two. And again, our ultimate fate is not going to be in the hands of science, technology, or engineering, but in our ability to govern, our ability to manage.

So consider, for example, just some of the hot button issues of the day here in this region. We have threats from within and beyond our basin boundaries to divert, export or otherwise consume our water resources beyond their sustainable capacity. We have invasive species that compromise ecological integrity and economic viability of the resource. We have toxic hotspots that are both the legacy of past generations and a threat to the health of present and future ones. And we also have the relentless misuse and abuse of our land and air resources that, through irresponsible practices, now contribute more pollutant loadings to the system than the end of the pipe pathways.

So there are indeed crises in their own right here in this region. Perhaps they are less advanced and less dramatic than those in developing areas, but considering the environmental, human health and economic dimensions of these crises they are certainly significant.

Now third, I'd like to share a point or two about the evolution of institutional and participatory frameworks here in the Great Lakes / St. Lawrence region. Our keynote speaker stated that things are changing, and she went on to talk about a toolbox for integrated water resources management. And these elements, I would argue, have universal application. They're not just relevant at the global level; they're relevant at the state, provincial and local level as well.

Some people like to describe the Great Lakes / St. Lawrence system as the largest laboratory for scientific experimentation on the face of the Earth, and I also like to describe it as the world's largest laboratory for institutional experimentation on the face of the Earth, as well. And this grand experiment has been going on for over a hundred years, and it has resulted - as I noted before - in what some might argue as the most sophisticated system of inter-jurisdictional governance on the planet.

And in just a couple of decades we've seen a transition that has really demonstrated the fact that I think we're moving in the right direction. We have moved, in the last couple of decades, from top-down command-and-control to bottom-up partnership-based approaches to water management. We've gone from merely balancing economic and environmental considerations to integrating them. We've gone from viewing non-governmental organizations as reactors to public policy to participants in the process. We've moved from using geopolitical boundaries as the basis for governance to watershed-based ecosystem boundaries. We've gone

from managing with the single media approach to a multimedia emphasis. And the list goes on and on.

The evolution is by no mean complete. It certainly won't lead to a perfect world, but in my view we're heading in the right direction. And I think the toolkit really has no boundaries for application. While there's no question that we at the regional and local level can learn much from the global experience, I think certainly the converse is true, as well.

Now as a fourth and final point I'd like to share some thoughts on key characteristics for institutional design and operation to ensure a sustainable approach to water management.

I developed these independent of the keynote presentation, but I think you'll find that they either reinforce or otherwise complement the views that were expressed earlier this morning. Some of these are intuitive, thus so, but I think they're all very important to keep in mind. I would just offer, briefly, ten parameters for institutional design and operation.

First and foremost, institutions need to be designed to learn and adapt. They need to be capable both of responding to and facilitating change.

Secondly, they need to do more than just mediate the differing views of the scientific policy and management communities. They need to integrate those views.

Third, it's critically important with our institutions that we protect at all cost our research capabilities, our monitoring, data collection and analysis capabilities. We can't turn them on and off like tap water without losing our ability to make informed decisions.

Fourth, as was mentioned earlier, unwavering long-term support, both from the political side and the populace, is critically important to institutions, especially when they lack that regulatory authority.

Fifth, as we all know, geopolitical boundaries really do need to give way to hydrologic watershed boundaries if we're going to manage successfully.

Sixth, stakeholder involvement in partnerships needs to be more than an afterthought, they need to be the very basis for management, and they need to happen up-front and throughout the process.

Seventh - and this is critically important - it's important for us to establish indicators, not only of ecosystem health, but also of institutional performance. And that's something that

inherently institutions and governments tend to avoid because it's like a report card that puts them on the spot, but certainly it's critically important for institutional success.

Eight, we need to recognize the inherent and inextricable linkage between environmental and economic goals.

Ninth, we need to build upon our existing institutions and avoid unwarranted complexity. There's a great political tendency - and it's a lot more interesting and sexy - to announce the creation of a new organization for water management rather than working with what we've got and making it more effective.

And finally, and perhaps most importantly, we need to continuously question the status quo and think outside the box. One thing that I've learned in all the time I've spent in the area of institutional design and operation is that there are no hard and fast rules for developing institutional and participatory frameworks. It's just lessons learned from other experiences, from successes and failures and how best to apply them.

So, in closing, I'll leave you with one of my favourite quotes that is pertinent to both the keynote presentation and to my remarks, and it's a quote by a gentleman by the name of Donald Schon who wrote a book in 1971 called *Beyond the Stable State*, and in that book he observes that "government agencies tend to be memorials to old problems, where the organizational equivalent of biological death is missing". And I think that's a very pertinent quote.

In other words, institutions that don't lean, that don't adapt, never die, they just clutter the governmental landscape, and I would argue that the advice provided in our keynote presentation - and, I'm sure, a lot of the advice we're going to get during the question and answer period and later on in the breakout sessions - will help us avoid such a scenario.

And with that I'll conclude. Thank-you.

Herb Gray

Well, thank-you, Dr. Donahue. As the head of an organization that's been around almost 100 years, I hope we're one of the adaptive groups you're pointing to rather than the fossilized kind. I'll have to review our structure!

Well, giving us a very international perspective is Dr. William Kudoja. Now, he's a Senior Scientist with the Lake Victoria Fisheries Organization in Uganda. His doctorate is in

chemical oceanography from Liverpool University, but his work experience has been in Africa. And we're eager to hear his experiences in managing shared waters involving a unique coastal ecosystem.

Doctor, would you please come and take over the podium?

William Michael Kudoja - Senior Scientist, Lake Victoria Fisheries Commission, Africa

Thank-you, Mr. Chairman. Good morning, ladies and gentlemen.

I come from the Lake Victoria region, and I work for the Lake Victoria Fisheries Organization. Now, in that region we have Lake Victoria, which is the second-largest freshwater lake in the world with an area of 68,800 square kilometres.

Now, what are the problems of Lake Victoria? The first problem is that there is very rapid population growth. The growth rate is 6% and we have a population of about 30 million people around Lake Victoria. Due to population growth you find that there is pressure on the environment, there is pressure on the forests, there's pressure for agriculture, there's pressure on the wetlands, even industries coming in, and recently you had a problem of water infestation.

Now, what are the institutional frameworks to deal with these problems? First of all the countries had to come together to address the problems of Lake Victoria, and here we have Kenya, Uganda and Tanzania. They came together and decided that they should try and get rid of these problems on Lake Victoria, and they approached the World Bank the GDF - Global Development Facility - and through the World Bank they got some funding to address these issues.

I would say that, five years down the road, most of the problems are actually getting solved. For instance, the water hyacinth control now is only monetary, to look at the fresh infestations. However, later it was realized that the catchment for Lake Victoria goes beyond Lake Victoria, it goes into Rwanda and Burundi, and therefore the water hyacinth infestation programs have been extended to Rwanda and Burundi.

In that Lake Victoria environmental project we have several components addressing the environment, because we realize the water actually comes from the catchment area. And we have projects dealing with afforestation programs, wetland restoration, we have land use

management, industrial moneys for waste management and all these programs are integrated and the end result is to monitor, actually, whether the water is getting cleaner or not.

Another institutional framework that we have in the region is what we call the Nile Basin Initiative. This is an initiative which has been on for the last about eight years or so. It involves ten countries, which are found about Lake Victoria and around the River Nile. These are Kenya, Uganda, Tanzania, Rwanda, Burundi, Democratic Republic of Congo, Sudan, Ethiopia, and Egypt.

And in the Nile Basin Initiative the aim is to make sure that the countries downstream from Lake Victoria also benefit from that water.

And here we have to call on broader international partnerships, and here we have other donors who are actually supporting the Nile Basin initiative, and these are NORAD, The Swedish, the World Bank, the French government, and other organizations like IUCN.

In the Nile Basin Initiative, we have a technical committee which involves the technical people dealing with water, and in that technical committee we also have other ministries which actually are involved in one way or another in the water management, like the environment, livestock, etc. But also we have a committee of ministers, because these are the policy makers, these are politicians who, at the end of the day, actually make decisions on policy issues.

Now, the problems that we have in this Nile Basin Initiative; there are issues which are still unresolved. Way back in the 1950s the British government made the countries around Lake Victoria and the Nile Basin sign an agreement that no country is going to use the water of the Nile or the water of Lake Victoria on a large scale without consultation with Egypt. And our politicians are revoking that. They're saying Egypt, if they're to have a share of this water - we're not denying them having a share of this water - but at least they should take part in the management of the environment of the catchment.

And discussions are going on about how each country should actually chip in and pay a cost towards the management of the water and the management of the lake and the management of the Nile Basin.

The other institutional framework that we have is my organization, the Lake Victoria Fisheries Organization, which involved Kenya, Uganda, and Tanzania. It's an organization

which was formed by the Fisheries Department and the Fisheries Research Institutes of the three countries to address the fisheries management problems of Lake Victoria.

Now, the problems are immense because we are talking about a transboundary resource. When the fish is in the water it doesn't see any boundaries. One day it is in Tanzania, one day it is in Kenya, one day it is in Uganda, depending on the seasons. Just like we have, if you take an example of the wildlife, in the Serengeti National Park, we find that the animals actually migrate according to the seasons.

The organizations were formed five years ago, and we had the support of the World Bank, GEF through the World Bank, and as the organization grew we realized that the water where our fish stay actually is part of the environment, and therefore the departments of environment and departments of water were incorporated into the organization to make sure that we have a holistic approach for the management of Lake Victoria.

The future for Lake Victoria and the Nile, the way I see it, is that first of all these projects are only there for maybe five years, maybe ten years, then they go away. And what happens at the end of the day? At the end of the day, here, we have to create some partnerships with the communities. We have these aforestation programs in the catchment, but government agencies have limited funding, and therefore at the moment, the next phase of the Lake Victoria Environmental Program, is to take this project to the communities, to have sustainability of the programs that have been initiated by the World Bank and by GEF.

And at the moment, in order to reach the communities, there are so many NGOs that have sprung up in the region, dealing with various aspects, first there is an NGO which is dealing with the wise use of wetlands. This is mainly a women's group. They make some baskets, they make some crafts, but using the wise use of these products.

We also have NGOs addressing the issue of aforestation. We have other NGOs addressing the issues of fisheries. We have a new NGO which has been established in Kenya recently. I think there's a member here who's come from that NGO. They're establishing an NGO to deal with water quality. So, first of all, they're building a laboratory for monitoring of waters from the rivers.

So, the future for the lake is mainly the communities, and we're trying, as I'm saying, to build a partnership with the communities for the sustainability of the water resource, but also for the sustainability of the fisheries as resources.

In the districts we are now establishing what we call Beach Management Units. These are communities, who are found in the villages, and we are trying to sensitize them on the wise use of the resource, and we are trying to sensitize them on the good, wise management practices of the resource. And we are waiting for an act of Parliament to make sure that these Beach Management Units are actually recognized by law. At the moment they're making their own by-laws, but within two or three years, I think, these BMUs will actually be an effective tool to manage the resource of Lake Victoria.

Thank-you very much.

Questions and Answers

HG: And now we have about a half an hour for questions and comments. If people would like to ask a question or make a comment I invite them to go to one of the four microphones. While it's not necessary, I thought it might be interesting, to show the range of participation in the conference, if people would give us their names and the organizations that they're linked with, even though they may be here in their personal capacities. Larry Hildebrand is going to be the time keeper, and as I say I'm going to be the good guy recognizing people and he'll be the bad guy telling you when time is up. Larry, about how much time would you like to allot for each question or comment?

LF: Keep your questions short, and allow as many panelists as possible to respond.

HG: Yes, I think it would be a good idea if we could give each of the panelists a minute or two to respond at the end of the questions. I won't call upon the panelists after each question - I don't think we have time for that - I think the audience would like to hear a response, if they would like to do it, from the panelists on comments from the floor.

So, who's going to be the first person? I see the centre microphone.

MA: My name's Magdelene Amir(?). I would be representing the University of Calgary or the Arctic Institute of North America.

I guess I wanted to ask a question with respect to institutional frameworks and capacity to address the complex water issues in both developing and developed countries, and really in relation to the use of partnership in networks.

And I'm going to draw on some parallel experience I've had with the privatization of energy markets in southern Africa and Latin America, and how you incorporate environmental measures, social and economic concerns.

And I guess my question would really go to how do you partnership in networks to address sometimes what may be government and institutional shortcomings, particularly with economics.

And secondly, how do you fit in the economic instruments and tools while not sometimes creating a worse situation, for example where you perhaps privatize water supplies and then deny the access to the poor who don't have the money?

HG: Thank-you. Now, could we have another question or comment? If nobody's ready to do that, would a panelist like to give a response? We have microphones in front of each panelist.

MC: Obviously, the first question is; how do you create a partnership to try and address the shortcomings of existing commercial arrangements? That is very tough, because the right answer to that is create it five years before the commercial arrangement is concluded and make sure that there's transparency and participation and all of the rest of it on the conclusion of the agreement. And that's something like telling somebody who wanted an oak tree in their front yard to plant it 200 years ago.

It is difficult once there is an existing contract, but all contracts are re-negotiable. The only thing you have to recognize is that if you put more demands on one side there will also be a reaction on the other side. But where a community feels that a contract is not filling its needs it can always press for re-negotiation of that contract, as I say, recognizing that once you open a contract there may well be changes on both sides of it.

But I go back to the need for the transparency and for the public awareness of what's in there. For example, many new contracts, or contracts that are currently being concluded, point out that if there's huge currency fluctuation and change then that will in itself be an occasion for the re-opening of contract provisions. And that's not unrealistic.

If you conclude a contract in which the payment is going to be made in the local currency and the expenditures are made in foreign currency, and there's a huge currency change, then it is reasonable to say we will have to open this up and look at the obligations that both sides took on and the balance in there.

So my advice would be to try and mobilize community support to demand that the contract be re-looked at. But as I say, you always have to recognize that if one side in a contractual arrangement moves something within the contract there's going to be movements on the other side.

The second question is how to ensure that the public good goals are protected as you move towards commercialization, as there's a possible movement towards commercialization of water arrangements. South Africa's given quite an interesting example of this, where first there is an allocation of free water for everybody - it's six cubic meters per month per person. That amount is free on your water bill, and then after that you pay. The second level is not too expensive, but the third one is very expensive indeed. And that allows for private sector participation in the delivery arrangements, but everybody gets some free water.

The South African Supreme Court has just confirmed the validity of that arrangement for somebody who said they didn't want to pay for the second tranche. And they said, 'Look, you do have to, because if we're going to guarantee this free water for everybody at one level, it has to be paid for by the levels above.'

There are only three ways to pay for water, as a taxpayer, or as a client if you can talk a donor into doing that, and water services have to be paid for somehow because pipes and reservoirs and chemicals and all the rest of it are not free. And so you have to try and design something which will guarantee the functioning of that system but still perform the social goals you spoke of, such as ensuring that water delivery to the poorest is carried out.

HG: Thank-you. Well, unless the other panellists want to add comments, I'd like to invite others to come to the microphone.

Again, to the microphone in the centre.

RH: Sure. I'll be brave. My name is Rosemary Horne (?), and I'm with Environment Canada. I've been having trouble, actually, trying to figure out what my question is, and so maybe I can make some observations and just ask for the panel's reaction.

Yesterday I was in a session, a case study on the Great Lakes, and there were four areas that they were looking at, and one was education. And the conclusion was that education was fine at all these universities, and educational programs, and you had all these NGOs and people involved, and wasn't it wonderful.

But then you look at what's happened over the past couple of years in Ontario, when they cut government funding to pay for, I guess, to bring down deficits. One of the biggest chops was to the Environment Ministry, and this is kind of inconsistent with education, it seems to me, and the whole emphasis growing on water. You talk about a crisis in water - and Walkerton happened, but this is not new. All these environmental situations were there, and yet they still cut the environment guys.

And we have George Bush wanting to drill for oil in the Alaskan nature sanctuary.

And so it seems to me that... and I understand that there are all these different groups out there, but it seems to me that when push comes to shove our leaders don't fall on the side of the environment very often. It just seems to be the opposite.

It also takes a long time for anything environmental to happen. That was my other point, I had forgotten. And I don't wish to criticize the IJC, because it happens in all sorts of other organizations.

Yes, all this stakeholder business is important, no doubt, no doubt at all, but yesterday I was asking somebody about the Lake Ontario / St. Lawrence River study and when it would be finished, and it's going to be finished in another four years, and I said, 'Well, okay, when do they expect to have the decisions?' 'Oh, well!' It was sort of like, 'Well, maybe one day.'

And somehow we have to manage the consultations with speed, and I think, personally, I think that it isn't the organizations such as the IJC, I think it's - and this is where it's kind of controversial for me to say this, I suppose - but I think it's plain timidity on the part of government.

HG: Okay, who'd like to tackle that one? Dr. Donahue?

MD: A lot of comments in there. I'd like to focus primarily on the education issue, and I can state unequivocally, I think, if we all sit back and wait for government to solve our problems or educate us we're going to be in dire trouble. And I think, sadly enough, education programs are typically among the first things to go when budgets get tight. But on the other hand who says that we should be sitting back and waiting for government to have the primary responsibility to educate us? I would say it's quite the converse, and I think that's where non-governmental organizations come in, and individual responsibility comes in, as well.

So, I'm not advocating the education should be the first thing to go when budgets get tight, but I would also say that education needs to be a shared function among many areas, and certainly there is a lot of education that's got to come from the people to our elected officials as opposed to the other way around. So, I would hope that as budgets get tighter, especially here in the Great Lakes region that we have the infrastructure in place outside of government to make sure that education moves forward in the manner it needs to.

HG: Okay. Does someone else have a comment? We could try some of the other microphones. There's a gentleman at the far microphone.

JT: Yes, it's Geoff Thornburn with Environment Canada in Victoria. I've also had a number of years' exposure to the Great Lakes issues.

A question for Michael, coming out of the keynote - or others, if they wish to answer it- coming out of the keynote remarks, but also, I think, very implicit in your remarks is a movement towards this concept that we tend to call sustainability management, that is, moving towards an integration of the environmental, economic and social, and you can't manage water as an issue in isolation from those other issues, and you can't manage the environment in isolation from the economic issues.

Now, yours is an organization that was, I think, initially grounded more on the economic side of the spectrum and it's moved into the environmental spectrum. What hope do you see for really moving towards a sustainable development type of management where we stop this business of trading off environment and economy? And

even though some of the academics and thinkers are not doing that, it still seems to be happening at the political and management level.

HG: Thank-you. Who would like to tackle that one? Dr. Donahue?

MD: One of the foundations on which the Great Lakes Commission was established indeed is that notion of integrating environmental and economic considerations, and when I talked about trends I was serious when I said that I felt that sustainability is becoming less of an abstraction and more in application at this point in time. I think it's been a long, tough road toward that, and at least in the Great Lakes region in the 80s and 90s there was a real fall-off in planning activities - it was more of a crisis response sort of activity - and I'm pleased to say that there's lots of evidence now that shows this region getting back into the planning mode and looking at planning from a sustainability perspective.

One excellent example is the whole Annex 2001 process that is leading to a water management regime for the region, and with that activity, the idea is to develop a scientifically-sound and legally defensible process for managing withdrawals and consumptive uses, and it is based upon sustainability principles.

When I think about that, when I look at the areas of concern, clean-up process and the extraordinary efforts that are being taken to look down the road at sustainability issues and gather all the players together, I see a glimpse of hope for putting the sustainability concept into action.

I think we have a long, long way to go on that, but I do think it's just in the past decade or so that that term has become a lot more meaningful. There's little anecdotal information that it actually is being applied.

HG: Thank-you. Now, who's next? Come up to the far microphone, please.

RN: I'm (Rich Norton?) from the Ministry of Environment Water Resources from Government of Eritrea, north-east Africa. My question is, particularly with the available environment in Eritrea, the focus now is providing drinking water for the internally displaced persons. While there are large areas where the groundwater assessment, because there are no perennial rivers in that country, it's all tapping groundwater, the assessment of groundwater, and then some areas we have problems of management, particularly in urban areas.

So, with the partnerships, the urban water supply and then the groundwater supply for drinking water access, there is no coordination. And also, they want wisdom, because the people are using contaminated water, with even the little water they get.

So, what sort of focus should the Global Water Partnerships do for a country like Eritrea? Is there any special focus, because the country, the usage is three litres to five litres per capita. So, in certain eventualities, even getting a glass of water they have to go long, long distances. The women, the gender issues, and the water wisdom are very important.

So, the investment in projects, the prioritization of international agencies in such an environment, what would a Global Water Partnership do, is my question?

HG: Madam Carlson?

MC: Thank-you. And the speaker raises several really important issues in water management. The first he notes is that a lot of communities are dependent on groundwater rather than on lakes and rivers, and the fact that groundwater has been simply ignored in most management regimes around the world is something that we're about to start paying a very heavy price for. We already are in some regions.

Sandra Postel estimates that the amount of groundwater... there's two kinds of groundwater, there's renewable and non-renewable, basically, in lay language...the amount of non-renewable water that we're using for agriculture is the equivalent of two Nile River flows every year. In other words, about 25% of Indian agriculture is being done with unsustainable groundwater, it won't last, and so therefore when that water is gone the agriculture will be gone... there will be nothing to nourish, and you'll have to go back to rain-fed agriculture.

When it's used for drinking water, as our questioner asked, the situation really becomes very intense. And in Eritrea, where the knowledge base is very low about the actual replenishability of those resources, the situation becomes very, very difficult. And as Bangladesh has shown us, in certain soils and certain areas, if you just keep using groundwater resources, the risk of arsenic poisoning from naturally-occurring sources is something that has to be investigated.

You ask what the Global Water Partnership could do. We do what people locally want to do about problems, because the Global Water Partnerships organize themselves locally. In East Africa, for East Africa there has just been - I was in Ghana last week - there has just been a group made up of Sudan, Uganda, and two other countries that want to form an East African partnership to start looking at East African water problems. We've tried to shape it so that it won't run into either the Lake Victoria or the Nile Commission and replicate the work that's being done there.

But the activities that are done will be very much shaped by the people on the ground. We're not an aid organization. We don't flow money, except some establishment resources to help people do what they think what the most urgent problems are, and then we sometimes help them to get development assistance resources.

In other words, what we would do in Eritrea, if you decided to establish a Global Water Partnership organization in Eritrea we'd tackle the problems that you think are the most intense, but there is no national agenda established by the GWP. There's a global perception of the best way to manage water, but then that translates down by whomever and whichever groups establish the country water partnership.

So the problem you raise is very real, it's very severe in several countries. The quality issue, because when you're dealing with groundwater the quality will vary from area to area, but most of all the replenishability issue, and what will happen.... Libya is using groundwater. The whole of Tripoli gets drinking water from an underground source which has a finite number of life years. What do you do after that?

HG: Thank-you. Is there another question or comment at this point? I'll say that again. Is there...? Okay, Mr. Hildebrand you're both the practitioner and the raw material.

LH: Very raw! One of the things we're working to at this conference, of course, is obviously sharing a lot of information, but working toward a conference statement that will be carried forward to the World Summit in Johannesburg in a couple of months' time.

We're getting an awful lot of material and we've got some great insights this morning from the panellists, but I'll put all four of you on the spot, here, and perhaps ask you if there was one message, from your own perspective, that you'd like this conference to bring forward in this conference statement to the World Summit. What would that be?

HG: Well, are you ready to try that? Do you want to try it in reverse order? Who would like to start? You don't have to do it in order.

JK: I will take a quick start. I would say that the whole issue of governance is going to be very paramount in the view of the World Summit on Sustainable Development, and if people really wanted to have one of the key issues, be it poverty alleviation, be it sustainable development, we need good governance for managing shared waters. I think it captures the essence of what's required and what we're talking about.

HG: Okay. Would you like to say something, Dr. Donahue?

MD: I'd like to go back to the initial point that I made about the greatest challenge that we have is more institutional than it is science or technology and engineering. And if you look into the organizational development literature, especially as it relates to water resources management, you realize that historically it's our institutions that tend to be a decade or two behind the times, and it's more the science and technology and engineering that's kind of pulling them into the present.

So I would say the biggest challenge we have is; when we design institutions or adapt them, don't do it for the problems we have today but think ten, fifteen, twenty years ahead, and make sure we're accommodating the issues arising on the horizon as well. That way we can use the institutions to facilitate change and direct that science and engineering and technology rather than resisting those tools.

HG: Do you have a response to Mr. Hildebrand?

WK: Yes, I'll just talk on behalf of the developing countries.

There was a world food summit in Rome, and I think the target was to make sure that people don't go hungry by the year, I think, 2015 or something like that, or 2005, and I think there is a need to have a statement to do with water and to address the water issues of developing countries, and therefore I think I would call on the donor community to place more emphasis on water programs, just as we are placing emphasis on HIV and AIDS in the developing countries.

So, it should be an issue which it should be top on the agenda when they're talking about developing countries. Water is life.

HG: Thank-you. Margaret Catley-Carson?

MC: The really horrifying fact is that in the New Economic Program for Africa - NEPA - water hardly ever makes it on the agenda. And that has been written by the African leaders themselves as a statement of their priorities, and water is hardly ever there. So you and I can weep together.

Which leads me to my point, and it's really a kind of ping pong ball between what the other two panellists - the Canadian panellists - have said. Yes, governance is the key, yes, the institutions have to be built, but how do you create the public climate in which that becomes necessary and essential? How do you get the degree of public involvement, awareness and agitation where better governance becomes inevitable?

It is extremely difficult, and I puzzle over this constantly. We have a society which is devoted to consumerism. Most of the really, really important communication vehicles are communication vehicles designed to affect various consumer patterns. We've got media concentration in a lot of the countries of the world, it's not just the sujet de jour here in Canada. And we have a subject which is complex and subtle rather than being instant, and even really good communication people cannot reduce the complexities of Great Lakes management down to a number of interesting sound bites.

And so I think that a lot more work than we're currently doing - and this would be my management message - is to translate the immediacy of the situation into something which will mobilize public activity, because you won't get the governance and you won't get the institutions until people are demanding this. It's like demanding that a good immunization system be set up in the government before you've created a public demand for immunization.

And how do we create a public demand for something which is subtle, which is several years off, which is not personally gratifying? How do you create public demand for that kind of public good? The financing of public goods and the creation of a demand for public goods, I think, is the real challenge facing us, because the institutions and the governance won't happen until that public demand is there. And I wish I had some answers on that.

HG: Thank-you. We have another question from the far microphone.

TG: Hi. My name's Tara Gibson. I'm from Halifax, I work for Canadian Crossroads International as well as an environmental consulting firm, and I was wondering if you might be able to say a few words about trade liberalization, both in terms of North American free trade as well as the developing world, and if you believe that costing out environmental services such as water through something like the Genuine Progress Index is remotely a solution - will it help us go down the right road - or not?

HG: Ms Catley-Carlson?

MC: Well, we used to have \$1 billion of agricultural subsidies a day before the *Farm Bill*, and I don't know what the total is now.

You know, I talked about the 80% of fresh water, for example, that goes into irrigation. There's almost no incentive to change those irrigation practices, because most of the times, that water is provided at even lower cost than drinking water if indeed there's a cost at all, because governments believe that they're creating the possibility to create economic wealth through providing water for irrigation purposes.

And so rationalizing water use for irrigation is enormously difficult because you can't use economic instruments, even though water, in some of its uses, is an economic good.

Why can't you? Well, it goes back to those agricultural subsidies. When I was in China about two months ago, I was talking to the Minister of Water Resources, and he's convinced, passionately about Integrated Water Resource Management. He could make speeches that make any of mine look pallid. And I said, you know, 'Are you charging any farmers for irrigation water?' And he said, 'We're about to open up our markets - with the WTO - we're about to open up our markets to international agriculture,' and he said, 'We're assuming that the number of farmers that will go under is in the hundreds of millions.' Only in China do you have figures like that. But he said, 'How, in that climate, can I turn around and charge for water?' Now, why will these farmers go under? It's because of the subsidization of agricultural imports, which will be possible into China. They'll be able to buy abroad cheaper than they can make in China, and China is not a high-wage country. And so the fact that even he believes that his agriculture is

imperiled by the continuing subsidies which we - us - put on agricultural production means that he can't use water rationally. So, the circle goes around all of the time.

And you mentioned a particular index. I mean, people always say to me, 'Well, why don't you point out more about agricultural subsidies, the distortion they provide against water use.' Well, you could. You could write a book - people probably have - you could write a learned study, a treatise on it. But how much more compelling evidence do you need that agricultural subsidies are doing dreadful things to the developing world?

At some point you have to conclude that it's a lack of care about this issue. And again, I'm back to how do you mobilize the public. Yes, you can provide more data and more evidence, but is more data and more evidence really what is going to change things? I have a hard time believing that, because it's something like girls' education. You can't pile up any more data and evidence about the fact that without girls' education a whole bunch of things won't happen. It isn't because of a lack of data and evidence that girls are not educated. So, you then have to go deeper into what could make it happen, because data and evidence, after a while you've got enough. It isn't that more wouldn't be interesting, but more is putting resources into doing an activity which is not on target, and the activity that is on target has to be finding out why that data and that evidence doesn't cause the change that you want to happen.

I wish I could be more cheerful about this, but I just think we're going so much the wrong way on agricultural subsidies.

HG: We have time for one more question. I'm not insisting on it, but we have time for one more question.

H: I'm Heile(?) from University ____ Eritrea. My question is related to the Nile Basin. First of all, I want to remind you Eritrea is also part of the Nile Basin, among the ten countries, I think. The point is a few days ago I was in Cairo, Egypt. I have observed the Nile River is directed to the semi-desert where Egypt is planning to settle around 1 million farmers there. Whereas the upstream countries, that you have mentioned, are suffering as they are having a low share of the Nile at the source, and the share they are using is very low.

So, what concrete measure is planned to be taken by the upstream countries in increasing the share of the water that they can use from the Nile Basin? Thank-you.

HG: Okay.

WK: Yes, in my talk I think I mentioned the reason why the Nile Basin Initiative Organization was actually formed. One of the issues is to address exactly that, to find people who have nothing to do with the catchment, they're not putting even a single cent in the production of that water, they're the people who have the right of using that water. Egypt relies on the River Nile for irrigation, and yet we have these rules I was talking about, these statutes, which were put up in the 1950s by the British government. We are not allowed to use Lake Victoria water for large-scale irrigation.

And as I say, recently, from what we call the East African Legislative Assembly, members of Parliament in the East African region; they questioned exactly that. Why does Egypt have more say in the use of the water than us?

And I think, although you're talking about resettling those people, I don't think they'll do it without the consent of the other member countries. There is a very big concern, because although we live around the Lake Victoria, there are some parts of Lake Victoria which do not have water, and yet there's the lake and they cannot use it because of these laws. I think we'll have to agree if those people can use that water.

HG: I'd like to thank the panellists for their outstanding contributions, and the members of the audience for their stimulating questions and comments.

I am privileged to have served as Chair of this session, and I just want to make a quick observation that... I don't know if the program deals with the spiritual or symbolic role of water. I think of the first words of the scripture that inspires two great world religions. It's all about water. And if you look at language, so much of the language - if you think of the English language - is based on similes and metaphors involving water. This morning you could say we've immersed ourselves in our subject. We could say that we have to be careful - as pointed out by our panellists - that we don't drown in the details, and avoid making solutions. And finally we have to say, in spite of the problems, that you've got to the middle of the river, you can't turn back, and you've got to keep going.

So thank-you very much, and over to you, our MC, Mr. Hildebrand who has some concluding remarks and presentations. Thank-you.

Larry Hildebrand - Manager, Environment Canada, Atlantic Region

Well, thank-you, Herb, for so ably chairing the session this morning, and thanks of course to our panellists.

Just a few things before we send you off for coffee and to the morning workshops. By the way, the most important thing, Germany won, 1-0. I'm not taking responsibility for that, I'm just passing on a message!

Before I have a few announcements and so on that I would like to invite Rick Findlay up, who told me he's going to prime the pump on drinking water, or something to that effect; a few minutes for Rick.

Rick Findlay

Thanks, Larry, and thank-you Mr. Gray, and all the speakers and panellists this morning, for a really great session.

I want to just take one minute before we go to coffee to make a little announcement. Pollution Probe would like to announce that we're going to be releasing a new publication this evening at our banquet. The document is called *The Drinking Water Primer*, and I think this is where Larry got the notion of priming the pump. We'll be releasing this document tonight at the banquet. Dr. Joe McGinnis, our banquet speaker, will be helping us to do that; another good reason you should be there.

I want to say a few words about the document. This has been in preparation for probably a couple of years at Pollution Probe. It is one of a series of primers that we're producing that we really do intend will help to mobilize and engage the public in the kind of ways that Dr. Catley-Carlson challenged us to do today. So we've produced this in response and recognition and gratification to all of the people who have been involved with its development from a number of government agencies and other organizations, and it's a solid, factual document that I really do commend for your use.

We'll have a few copies around this morning. We're getting a shipload in later. Please check in at the Pollution Probe booth downstairs in the coffee area today and tomorrow - if they're not in right now they soon will be, this morning or later today - and pick up a copy, and please use it. It's a discussion about drinking water from the front to the back, from source protection to treatment to use, and we really hope it helps to build the kind of understanding, and build the capacity in publics across this country and around the world, about drinking water and real issues that we all face regarding that subject.

So I'll look forward to seeing you tonight at the banquet, and we'll make sure that it gets launched appropriately. Thanks very much.

Larry Hildebrand

Thanks, Rick, that's great. Just a few announcements before we go. The banquet... I think it's going to be an inspiring evening with Dr. Joe Mckinnis, and an opportunity, again, just to get together to celebrate some of the work that we're undertaking together. So, tickets are available, still, at the registration desk if you don't have them, so please pick those up as soon as possible.

Next, we do have two field trips this afternoon, one to the Canada Centre for Inland Waters that we heard about yesterday, and the second to the Welland Canal / St. Lawrence Seaway. Having grown up along the Welland Canal, I would highly recommend it. Well worth seeing. Tickets are still available at the registration desk. And for the trips, if you are going on these trips, please meet in the lobby of the Sheraton Hotel at 12:45. I presume that's the time we'll be leaving, so be there for that time.

You would have noticed, I hope, in coming into the room this morning, a stack of these yellow sheets. This is the result, a summary - a preliminary summary - of our discussions in the interactive workshops yesterday morning, where we were talking about the theme of the day. It's summarized in terms of this is what you and we said, community awareness-raising, education, training, implementation.

The idea is - and what we wanted to do with this conference, of course - is engage you all in discussion and draw out your own perspectives, but also to be able to build in an iterative way throughout the week. So, our team worked - I presume all night - putting this together so that

you have it now to see what the other nine groups that you weren't able to be a part of had discussed, and the commonality of the messages.

So, please pick this up. We'll have one of these every day. Please review it as you go into your working sessions this afternoon, and reflect on the summary of the insights. We want to keep building on the discussion as we go through the week, so we commit to continuing to produce these sheets. So, please take that with you and reference it as you move through the sessions.

With respect to the interactive workshops, today's focus is certainly this theme of institutional and participatory frameworks. I'll refer to - please lift up your badge, turn it upside down and note the number... that's not very helpful because then your number's upside-down - but please go to the session that you're assigned to on your tag, that hopefully you were at yesterday, and will continue to stay with throughout the week. Those sessions will begin at 11 o'clock sharp. Please be there and ready to roll.

Finally, all the chairs for this afternoon's sessions, please meet with Patrick Lawrence, who we know now, in the lunch area at 1:30. There'll be a reserved table there to get some briefing in terms of our expectations.

I think those are our announcements. Coffee is downstairs in the exhibit area. Please go down and load up, and be ready to go in your assigned number room at 11 o'clock.

Thank-you very much.

[End of Day 2]