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Some Examples of Best Ethical Practice in Water Use

Claudine Brelet

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Preface

When COMEST met for the first time in Oslo in April 1999, a decision was made on priority subject areas. UNESCO's International Hydrology Programme (IHP) had already set up an intercultural and interdisciplinary working group chaired by Professor Llamas to report on the Ethics of the Uses of Freshwater. This group looked at a wide range of topics all of which related to the ethical management of water: food security, health and sanitation, natural disasters, decision-making and management, ecology, the special role of women, history, the challenges of technology, conflict, intense use of groundwater and the consequences of dam building. Following this thorough preparation, COMEST decided to appoint a Sub-Commission on the Ethics of Freshwater Use.

The first meeting of the Sub-Commission was held in Aswan in October 1999. The ethical issues relating to water mirror broader debates on social ethics and relate to a number of ethical principles. The Sub-Commission resolved that rather than analyse once more the ethical issues of water management, it should promote best ethical practice. Some fundamental principles were identified as essential components:

- **Human dignity**, for there is no life without water and those to whom it is denied are denied life.
- **Participation**, for all individuals, especially the poor, must be involved in water planning and management with gender and poverty issues recognized in fostering this process.
- **Solidarity**, for water continually confronts humans with their upstream and downstream interdependence, and initiatives for integrated water management may be seen as a direct response to this realization.
- **Human equality**, for all persons ought to be provided with what is needed on an equitable basis.
- **Common good**, for by almost everyone's definition water is a common good, and without proper water management human potential and dignity diminishes.
- **Stewardship**, which respects wise use of water.
- **Transparency** and **universal access to information,** for if data is not accessible in a form that can be understood, there will be an opportunity for one interested party to disadvantage others.
- **Inclusiveness,** for water management policies must address the interests of all who live in a water catchment area. Minority interests must be protected as well as those of the poor and other disadvantaged sectors. In the past few years the concept of Integrated Water Resource Management (IWRM) has come to

the fore as the means to ensure equitable, economically sound and environmentally sustainable management of water resources.

- **Empowerment,** for the requirement to facilitate **participation in planning and management** means much more than to allow an opportunity for consultation. Best ethical practice will enable stakeholders to influence management.

Water management is fundamentally a question of social and environmental justice based on three essential concepts: **equity, fairness and access between and across generations**. Its ethical dimension may be perceived in the way answers are found to the following questions:

- Who participates in the decision-making process?
- Are these participants involved in formulating options or are they expected only to react to proposals that are already well-developed?
- How and what type of opportunity costs are considered?
- What kind of information is open to the public?
- How do professionals interact with non-professionals?
- Is there respect for cultural diversity and our heritage?
- How is a balance determined between the needs of human development and the need to preserve our natural resources?

The difficulty of implementing these principles in a large catchment area or in an urban community cannot be denied. Two further practices will alleviate these problems, at least in part:

- **Partnerships:** Where partnerships are formed this will help different communities or interest groups to understand each others' requirements. For example applied technology is only likely to be relevant and successful where there is a clear understanding of the user communities needs.
- **Focus at the local level:** By concentrating at the local level a focus is possible which enables practical solutions to real issues. If technology and investment programmes had been funded to assist the one billion people without adequate access to fresh water on a region basis, this massive failure to give all people the basic necessity of life would no longer persist.

All stakeholders have a **responsibility** to consider how their practices compare to these principles of best ethical practice. International agencies such as UNESCO, being at the most remote level from the water users have a duty to ensure that their expertise is used to promote these principles. National governments should ensure that they are promoting best ethical practice in the management of shared water resources. Water regulators are charged with the **responsibility** of ensuring that enforcement of regulations is even-handed and consistent. If one

sector is favoured, then this is a failure to deliver an ethical policy. The water supply industry should consider to whom it is accountable and whether its data is accessible and how it allows stakeholders to participate in its management decisions.

Governance has to be based on **shared values**, and governments have to ensure that there are socially accepted moral standards on what can and cannot be done. These standards must determine what consequences of water management are or are not acceptable. For example, to what extent is damage to ecosystems acceptable? What loss to our heritage is tolerable? What impact on downstream water users is permissible? Successful civilizations have usually ensured that their water governance is rigidly enforced. When there is a breakdown of water regulation, conflict and economic failure often follow. Governments have a responsibility to ensure that an appropriate infrastructure is in place to allow these shared moral values to be debated and implemented.

The world's research and development community has an obligation to ensure that these issues are addressed even if this requires different working relationships to ensure that in future the appropriate technology is made available for implementation. The technologies which prove most relevant to the needs of the most deprived communities are likely to use locally relevant solutions, such as local materials and local building materials. A strong community involvement, **including women**, and a strong sense of ownership and of local management of the programme ensure a successful technology.

COMEST has now established its own network, in partnership with the International Hydrological Programme/UNESCO, to promote best ethical practice in all aspects of freshwater use. The Research and Ethical Network Embracing Water (RENEW) has established three nodes. These are at the Australian National University, Canberra, serving Australia and the Asian Pacific, at the University of Bergen, Norway, serving the Nordic-Baltic region, and in Cairo serving Egypt and the Nile Basin. RENEW's mission is *'To promote engagement in the ethical issues involved in the sustainable use and equitable sharing of fresh water resources at all levels and in the handling of and response to water-related emergencies and disasters'*.

Each region has different priorities and therefore different approaches to achieving this mission. In each case, RENEW seeks to identify and to promote best ethical practice, wherever it is found. Hence COMEST and the International Hydrological

Programme have decided to publish examples of best practice in this booklet, and thereafter on its website. They illustrate the efforts made throughout the world to fill the gap between the promise contained in the right to water and the need for wider coverage of basic water services as clearly articulated at the 3rd World Water Forum, held in Kyoto in March 2003. They also reflect the goals of the *UN Millennium Declaration* and the priorities of the Johannesburg Summit held in 2002.

UNESCO is demonstrating its continuing and abiding interest in promoting best ethical practice throughout the world, in facilitating communication between all stakeholders concerned by fresh water issues. The examples described in this publication do not purport to be authoritative discussion on the basis of ethical principles involved. Rather, they aim at providing a context for a wide-ranging dialogue between various disciplines from the natural sciences to the social ones. A dialogue process is the most effective way to redefine rights and responsibilities, and to improve coordination with the various players. Rather than fastidious debates, it seemed more appropriate to highlight in blue the ethical principles that steered the practices provided in this publication – a colour symbolizing peace and health brought by sufficient safe water provision, and the colour of the United Nations system.

John Selborne
Chair, COMEST Sub-Commission on the Ethics of Freshwater Use

The Need to promote Best Ethical Practice

The Sub-Commission on the Ethics of Fresh Water Use seeks to stimulate the implementation of ethical principles in the field of Fresh Water. Its aim is to help to shape a society in which best ethical practice in the use of fresh water is both recognized and widely practised.

The discussion on governance and especially on water governance is relatively new. Generally, governance covers the manner in which power is balanced in the administration of a country. It embraces the traditions and institutions by which authority is exercised. Effective water governance works at country and local levels, where reality replaces theory.[1] In good governance, dialogue avoids sterile debate on big principles, and it redefines rights and responsibilities so as to improve co-ordination and capacity-building and sustain development.

[Box]

Already in 1990, the UN Development Programme defined Human Development as *"a process of enlarging people's choices. In principle, these choices can be infinite and change over time. But at all levels of development, the three essential ones are for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living. If these essential choices are not available, many other opportunities remain inaccessible. But human development does not end there. Additional choices, highly valued by many people, range from political, economic and social freedom to opportunities for being creative and productive, and enjoying personal self-respect and guaranteed human rights"*. In a communication to the Preparatory Committee for the Second United Nations Development Decade, UNESCO stated: *"Development is meaningful only if man who is both the instrument and beneficiary is also its justification and its end. It must be integrated and harmonized; in other words, it must permit the full development of the human being on the spiritual, moral and material level, thus ensuring the dignity of man in society, through respect for the Declaration of Human Rights"*.

The need for a wider coverage of basic water was clearly articulated at the 3rd World Water Forum reflecting the goals of the UN Millennium Declaration and the priorities of the Johannesburg Summit[2] in a situation where industrialized countries suffer from an excessive threat to the environment, and a deadly poverty strikes less industrialized regions. The Forum invited participants to share their experience with proven actions and best practices supported by sound scientific research that have facilitated sustainable solutions to water problems. Priority was given to the promotion of dialogue and interaction among stakeholders. A strategy based on good policies and entailing comprehensive actions was proposed and summarized not as "what needs to be done", but rather

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1 CATLEY-CARLSON, M. "Preface", *Effective Water Governance. Learning from the Dialogues*. Global Water Partnership, Stockholm, 2003.

2 *The Declaration of Kyoto,* March 2003.

"who needs to do what, how, and when?".

The fast pace of scientific discovery and technological progress does not guarantee that humanity will benefit from its technological achievements in a harmonious way unless these are fully consistent with fundamental human rights and freedoms. Human rights cannot be separated from a set of ethical principles that shape what anthropologists call a *social ethos*.

The *United Nations Charter* and the *Universal Declaration of Human Rights* were designed to be the implicit ethical vectors of a new civilization where conflict is replaced by cooperation, uniformity by diversity, and control by cooperation and democracy. Since the creation of the UN in 1945, humanity has grown from 1.6 billion to more than 6 billion people. Although scientific knowledge, automation, new materials and communication systems opened the way to improve water services in industrialized countries, about 2 billion people have no access to safe drinking water, and one billion are still suffering from hunger and malnutrition, "*largely a silent and invisible emergency, exacting a terrible toll on children and their families. The result of multiple causes, including a lack of food, common and preventable infections, inadequate care and unsafe water, it plays a role in more than half of the nearly 12 million deaths each year of children under five in developing countries. ... Malnutrition blunts intellects and saps the productivity and potential of entire societies. Poverty, one of the causes of malnutrition, is also a consequence, a tragic bequest by malnourished parents to the next generation"* (UNICEF, 1998). As Einstein said, *"Problems cannot be solved within the mindset that created them"*. Great improvements are usually made when our modes of thought change.

The new paradigm reminds us that our actions affect the holistic system that is our biosphere. Ecosystems and humans alike are not functioning as mere isolated machines: they are dynamic, constantly evolving due to the interactions of their components. Scientific research, whether in biology, chemistry, physics, geology or hydrology, once focused on one level and in closed systems. Research now evolves towards a transdisciplinary approach that integrates human and social sciences in an attempt to embrace the multiple levels of reality. As a result, ethics can no longer be confined to philosophy. The anthropological study of values and beliefs that have contributed to build up cultures and civilizations shows that ethics and normative values are still visible in a number of indigenous cultures. Once considered as dusty fossils, these cultures actually reveal an astute ecological cleverness, both anticipatory and adaptive, in maintaining natural resources for future generations. In indigenous communities, humans are not traditionally regarded as separate from their natural environment, but as another part of the same highly complex 'metasystem': Nature. The ancestral knowledge of indigenous communities comes from the holistic

observation of the many interdependencies which make up the natural world. They are empirically aware that human and natural systems are mutually responsive and interactive. Industrialized nations rediscover what most indigenous peoples have practised and still do: they do not separate knowledge and wisdom, and they value truth and solidarity, beauty and love. Because resources are meagre in these communities, decisions are based on what is objectively good not for the agent only, but equally for other people involved – an ethical attitude that, in the modern world now aware of the limitations of natural resources, can define what is good practice and what is effective water governance.

Basic needs for humanity include breathing, drinking, eating, security, shelter (including warmth), health and waste disposal, growth, reproduction, response and resting. Social needs encompass communication, affection, status and esteem, belongingness, stimulation (curiosity, play, pleasure), planning (securing resources), etc. Our higher needs, whether abstract, ethical or spiritual, are typical of the human species and characterized by arts, science, religion and philosophy, love, beauty, freedom, truth, justice and search for the common good. Water issues are clearly related to the three dimensions of our needs. Water's technological aspects must not be separated from social and cultural factors, nor from ethics.

Is the water crisis a governance crisis? In our modern world, water governance involves political, social, economic and administrative systems responsible for developing and managing water resources and the delivery of water services to the different members of society. The water crisis calls for a definition of their roles and responsibilities to secure access to water for all – a fundamental right according to a recent UN declaration, to sustain vital ecosystems and produce human and economic development. Since no living system can survive in isolation, effective governance is based on the balance of power at different levels of authority, and on the acceptance that motivation determines action.

Interactions and feedback loops inevitably imply constant evolution. It is therefore not surprising that improving governance leads to reform, as happened in Japan, when the Prefecture of Shiga decided to launch the *Mother Lake 21 Plan*. Initially designed for the protection of the biodiversity of Lake Biwa (one of the most ancient lakes of the world), this project (see *Case Study 1*) enhanced local sovereignty, local autonomy and economy through citizens' involvement. As a direct result of their action, not only the lake biodiversity was protected and eventually restored, but finally a powerful industry changed its attitude and agreed to modify the composition of synthetic detergents in the entire country. Dialogue between water users, politicians, administrative authorities and water managers triggered change without damaging ancient Japanese traditions, setting out local priorities and actions at regional level.

Some regions are now managing shared water lakes. In the former Soviet Union, the environmental quality of Lake Peipsi-Chudskoe has deteriorated over the last fifty years. Lake Peipsi-Chudskoe is located on the border between Estonia and Russia. Its catchment – shallow and biologically productive, with substantial fish resources and wetlands of global importance – is shared by Estonia, Latvia and Russia, three countries in transition. About 1 million people live in this bioregion. In 1997, five years after the border between Estonia and Russia was re-established, their governments signed an *Agreement on the Protection and Sustainable Use of Transboundary Water Bodies,* implemented both by a new intergovernmental commission and a network of regional and local authorities, universities, NGOs and businesses. The experience is not hindered by different languages and norms. It respects cultural diversity and allows a distributive governance system. The next step for Central and Eastern European countries is to identify governance options that will allow them to manage their water resources, including transboundary issues, within the European Union Water Framework Directive.

In all sectors, introducing a new water legacy is not an easy process, except when political change creates a favourable atmosphere. Change in the delivery of water services is also a political process. The Chilean reform programme, outlined in its *Water Code* of 1981, was carried out during the economic development put in place by this country since the 1970s. The *Water Code* acknowledges that water is a factor of production in many sectors and can be transferable like any other economic input. Change in water governance does not rely on technological requirements only because the quality of water services affects the life of all citizens in any community. Public participation through extensive consultation of stakeholders delegated to participate in the content and process of a new policy is crucial to ensure that public needs will be adequately met; to alleviate resistance to change and to promote ethical values such as respect for human dignity, people empowerment, transparency, equity and the common good. South Africa recently revised its water policy and legislation (see *Case Study 2*). Using a sound democratic process, the Durban Metropolitan area revised its water management and social development through a *Municipal Systems Act* in a thorough and open-ended consultation with its residents, including an interactive website, a permanent source of information that provides forums for the Civil Society.

It appears there are sometimes contradictions between past norms and present laws. The dual status of indigenous peoples' territories as both ancestral domains and nationally protected areas, spawn conflicts between indigenous people and governmental bodies responsible for managing these areas and their natural resources. Conflict resolution lies in the care taken to invite the local communities' authorities, who are

often traditional spiritual leaders, to share and explore the best current thinking to identify local water needs and balance them with national priorities. Ethical governance of a territory is a precondition for resolving local conflict raised by water governance issues. The example of the Besao community, in the Philippines archipelago (see *Case Study 3*), shows that water governance is also affected by national governance in sectors such as agriculture, policies on industrial investment – and in the Besao case, such as mining work, timber trade in forested areas and nature conservation. A compromise is then necessary between the central government's policies and priorities on the one hand, and on the other hand indigenous people's concerns and needs, beliefs and aspirations through the recognition of the rights of indigenous communities, namely a right to cultural diversity. In the Philippines, as in all communities, indigenous communities' right to lands includes the right to water. In Peru, the dialogue also made special reference to the mining sector. Dialogue is always needed to shift from the technically oriented decisions of authorities to ethical governance and good practice.

Technologies are not neutral. They reflect the image of the society that produces them. Fair distribution of adequate technology is based on objective, updated and easily accessible information. The private sector in industrialized countries promotes high technology such as expensive solar cells and drip irrigation for the richer part of humanity. Developing countries cannot afford high-tech and often lack the capacity for its maintenance. Small community water supply technologies have to be accessible to people living in more or less isolated rural areas, and in the poor outskirts of cities in developing countries. Water access is an even more serious problem among the poorest and most deprived people, nomads and those suddenly obliged to adapt to harsh conditions in a refugee-camp, who may have to undertake 'water-harvesting'.

Entire countries in arid zones have to augment their water supply. Tunisia, for instance, encourages waste water treatment and now irrigates 7,100 ha with 156 million cubic meters of treated waste water per year – a process being considered in Oman. Jordan faces scarce water resources, population growth and the increase of industrial water use. If some current groundwater abstractions are not halted, there is a risk of the complete loss of some aquifers due to almost irreversible salinization of the groundwater stocks. The Government has consequently designed a long-term integrated strategy that allows for a cross-sectoral perspective in water allocation and management, which will raise living standards. Owing to increasing urban and rural water tariffs, private sector participation has become an attractive option for users to ensure full recovery of operating services.

Desalination of brackish water, and rainwater harvesting in rural areas constitute alternatives that are expanding in all parts of the world. Non-governmental organizations play a very active role in disseminating

small-scale alternative technologies that prove to be culturally and environmentally appropriate. Consequently, they deserve a wider application to foster international justice and equity, particularly gender equity. The role of women is of the utmost importance in poor communities (see *Case Study 4*). Women are the main providers of health care throughout the world, but in developing countries they are usually also those producing food crops both to feed their households and to earn a little money selling the produce in the markets, while men migrate to the cities in the hope of supplementing their incomes. The collection of water can take up to 60% of women's and girls' time. This is one of the reasons why young girls abandon school, and a major obstacle to their participation in formal education programmes. The disparity between the levels of women's and men's education explains the lack of women at the advisory and policy making levels. It also explains why women are regrettably almost entirely absent from the professional sector whereas their involvement as advisers, planners, scientists and engineers, including in all government services, is crucial. Often assuming the stewardship of their households, women have a direct and clear awareness of their communities' actual and future needs. Their input is thus essential for ensuring solidarity and equity between generations. Promoting women's access to modern communication networks will enable them not only to exchange their knowledge, their ideas and experiences but also to improve the South-South cooperation, and possibly to put an end to malnutrition too often related to poor access to water.[3] Experience has proved that when Ministries of Water Resources and Environment and the Ministries of Health involve the Ministries of Women's Affairs in their projects, problems are considered from different angles relating to the real needs of the community.

Water is a source of life, but as such it can also be a source of conflict. With an increasing demand for finite freshwater resources, the need adequately to protect and manage water resources has never been greater. However, clearly acknowledging the situation can open the way for cooperation among nations.

The Nile River is shared by ten countries: Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda. It serves as home to global environmental assets, such as Lake Victoria (the second largest fresh water body by area in the world) and the vast wetlands of the Sudd.[4] An estimated 160 million people live within the boundaries of the Basin, while about twice that

[3] The World Health Organization estimates that in developing countries approximately 150 million children (26,7%) under 5 are malnourished. Two-thirds of all malnourished children in the world live in Asia, and one fourth live in Africa.

[4] The Sudd is a swampy region (320 x 240 km), located in the south of Sudan and East Central Africa. It is fed by the Bahr al-Jebel, the Bahr al-Ghazal, and the Bahr al-Arab, headwaters of the Nile. Thick aquatic vegetation (*sudd,* in Arabic) disperses the river water into numerous channels. About half the water is lost through evaporation and absorption before leaving this region.

number – roughly 300 million – live within the ten countries that share and depend on Nile waters. The organized discourse involving this vast civil society at the very early stage of the *Nile Basin Initiative*, a holistic intergovernmental development project, is a sound innovation in international development processes (see *Case Study 5*). The establishment of *National Civil Society Forums,* aimed at defining and promoting a *'Shared Vision'* among all the communities living in the Nile Basin, has the legal recognition of the governments concerned. It is currently coordinating a patient governance dialogue between all riparian communities and the *Nile Basin Initiative* previously launched with international institutions to cure poverty, instability, rapid population growth and environmental degradation in this wide region. The recent *Agreement on the Incomati and Maputo Rivers* in Southern Africa is another example of transboundary governance of watercourses. So far, the UN *Convention on the Law of Non-Navigational Uses of International Watercourses* has been ratified by only sixteen countries. Therefore it is not fully operational, but it constitutes a step towards reasoned governance at the level of bioregions. How water is divided between States that share rivers is a crucial question, especially when considering the global change that is taking place. Bringing more stakeholders together, making their different roles effective and getting action through partnerships is a key to harmonizing needs and resources. Distributed governance is an essential aspect of democracy.

The main features that held the attention during the 3rd World Water Forum included improved regulation; clearer definition of roles and relations; connected decentralization; better allocation to bring water distribution in line with global climatic change and society's changing needs; preparation of individuals and institutions through capacity building; avoidance of excessive or complex legislation and regulation – laws being turned into working rules.

Communication and information were also identified as major issues. Scientific institutions should use a more accessible and understandable language to communicate reliable and updated information for the general public. More contacts need to be made with the media since journalists can play a crucial role in mass education. Electronic networks can facilitate and strengthen the circles of Parliamentarians and media. They can also stimulate extensive social and parliamentary debate to reach consensus, especially about the new issue of private sector participation when over 90% of domestic water and waste water services worldwide are provided by the public sector. More networks need to be created to establish dialogue between all stakeholders, including political leaders, in order to raise political will and ensure that all political decisions are transparent, particularly those regarding financial transactions, when business takes on responsibility for the management of water services.

There are many examples of effective water governance and good practice from all parts of the world. It is hoped that the five case studies presented in this booklet will contribute to enlarge the many dialogues that took place during the 3rd World Water Forum. Our common future rests not only with scientific discoveries and technological knowledge, but also with faith in ethical values, good will and proactive imagination.

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The Story of Lake Biwa

How Japan is mastering the interaction of nature with humankind

political will, equity, integration, participation,
transparency, accountability,
trans-generational solidarity, common good, stewardship

The story of Lake Biwa deserves to receive full honours because it illustrates the breakthrough made by a Japanese community and it emphasizes ethical principles and good practices that give hydrology its social dimension. Hence the shore of Lake Biwa, the 'Mother Lake', was selected to host one of the major events of 3rd World Water Forum: the Ministers' Meeting on Water, Food and Agriculture.

The Forum was concluded with a Declaration stressing in particular that governments "*should ensure good governance with a stronger focus on household and neighbourhood community-based approaches by addressing equity in sharing benefits, with due regard to pro-poor and gender perspectives in water policies; further promote the participation of all stakeholders, and ensure transparency and accountability in all actions".* Aimed at encouraging all participants to translate vision into concrete action as well as into good practices, this international event paved the way for undertaking what was described as a paradigmatic shift in hydrology.

The Forum was held in three places: Kyoto, Osaka and Shiga whose Prefecture has enacted Lake Biwa Rules. Shiga was not chosen for the natural beauty of Lake Biwa only, although the lakeshore has been designated a quasi-national park. Lake Biwa is Japan's biggest lake. Its volume of 28 km^3 covers an area of 670 km^2. Formed four million years ago and taking its current shape 400,000 years ago, it is one of the world's ten most ancient lakes, with Lake Baikal in Russia and Lake Tanganyika in East Africa.

Lake Biwa is an important transportation artery that joins the Yodo River with several others. This watershed covers an area of 8,240 km^2. In former times, it was used as a highway between the settlements along the Japan Sea coast on the west side of the main island of Honshu, and its water connected the cities of Kyoto, Osaka and Nara. Today, the lake is used for agricultural irrigation, for fresh water fish harvest (about 2,800 tons in 1998, nearly 50% of fish production nationwide), for power generation and other industrial activities – including tourism and recreational sports (37 million people per year visit the lake). It provides water resources to the entire Keihanshin (Kyoto-Osaka-Kobe) Industrial Belt and the "Mother Lake" is a precious source of drinking water for the Kansai region.

Through the Lake Biwa General Development Project, water can now be supplied at a rate of 40 m^3 per second down the Yodo River to meet growing demands for water. An essential resource, it supports the lives of 14 million people (Shiga: 1 million; Kyoto: 1.8 million; Osaka, the oldest cosmopolitan city in Japan, founded in the 5th century: 8.5 million, and Hyogo: 2.7 million). Among the almost 1,000 species the lake nurtures, the Biwako giant catfish and Biwa trout are two of 59 species unique to the lake. About a hundred species of wild birds live on its shores.

Lake Biwa and the boundary of Shiga Prefecture
© Lake Biwa Research Institute

Area of Shiga Prefecture: 4,017.36km^2
Catchment area of Lake Biwa: 3,174km^2
Area of the lake: 670.29km^2 (North Basin:South Basin=11:1)
Major axis: 63.49km
Widest crossing: 22.80km
Narrowest crossing: 1.35km
Shore line: 235.20km
Deepest point: 103.58m
Average depth: Approx. 41.20m (North Basin: Approx.43m / South Basin: Approx.4m)
Volume of lake water: 27.5billion m^3 (North Basin: South Basin=273:2)
Altitude of the lake surface: 85.614m
Average amount of precipitation per year: 1,607.9mm (1980-1999)
Population of Shiga Prefecture: 1,347,292 (Mar.2001)
Population density of Shiga Prefecture: 335.37/km^2 (Mar.2001)
Area of paddy and other agricultural fields: 478 km^2 (2000)
Area of forests: 2,029km^2 (2000)
Conventional sewerage system coverage ratio: 58.8% (Mar.2000)
COD of lake water: 2.6mg/l (North Basin) 3.2mg/l (South Basin)

POLITICAL WILL

The Prefecture of Shiga decided to launch a project entitled *Mother Lake 21 Plan,* an agenda for sustainable development during the 21st century. This manifestation of dedication and political will has avoided the extinction of many species. Should this great wealth of biodiversity have disappeared, it would have been an irremediable disaster not only because of the tens of thousands of years it took these many species to evolve, but also because the entire ecosystem (including that of the mountains around the lake) would have collapsed together and a number of cultural traditions deeply rooted in the local community would have been lost.

Not just a mere administrative decentralization, the *Mother Lake 21 Plan* aims at enhancing local sovereignty, local autonomy and local economy through the citizens' involvement. It is based on the principle that "*if every one is involved, the lake will return to what it was before the late 60's, when damaged by modern lifestyle".* Such a democratic principle alone would have proved insufficient to bring about such a profound change as that implemented by both citizens and authorities of Lake Biwa. But the people living on the lakeshore had over thousands of years acquired their most important asset, their attitude towards nature and their quest for harmony, perhaps what René Dubos, the founding father of ecology would describe as reverence for life.

Nature Worship, a Japanese Tradition

Shinto and Buddhism are Japan's two most important religions. Shinto, namely the "way of the gods", is considered as old as Japan itself. It has no founder or sacred scriptures. Shinto gods, called *kami*, are sacred spirits that manifest important natural phenomena such as water, rain, wind, mountains, plants, animals and fertility. Humans may also become *kami:* after they die, they are revered by their families as ancestral *kami.* Buddhism was introduced in the country during the 6th century. After a few initial conflicts, both religions coexisted. They eventually complemented each other to the extent that today, many Japanese consider themselves Shinto-Buddhists.[5]

Japanese culture mirrors this special link people have with nature and their quest for inner and outer harmony. Traditional arts are famous throughout the world. The *ukivo-e,* delicate paintings that capture the essence of light in water and plants, greatly influenced the Impressionists. Known throughout the world are the stage arts of *kabuki*

[5] For a number of Japanese Buddhists, the *kami* are manifestations of Buddha. In the Meiji Period, (1868 - 1912), when the emperor Meiji moved from Kyoto to Tokyo which became the new capital, Shinto became Japan's State religion. After the Second World War, the religion and the State were separated.

and *noh;* the *ikebana* or flower arrangement; the *shodo* or calligraphy; the *haiku*, a form of short philosophical poems on ethics, and the *chaji* or the tea ceremony promoting both physical and spiritual health, viewed by Westerners as "the epitome of Japanese aesthetics". Japanese art relies on the individual's most inner self focused on the principles of harmony or *Wa,* respect or *Kei,* purity or *Sei,* and tranquillity or *Jaku.* It is an expression of the belief that every act of daily life is a potential act that can lead to genuine peace and enlightenment.

Based on these traditions linking so closely aesthetics and ethics, Japan's relations with other countries unsurprisingly aim at helping to resolve conflicts around the world, cooperating with developing countries to improve their living standards and social conditions, and dealing with global issues, such as protecting the environment and slowing down population growth.

Answers to major threat on Lake Biwa's blue, crystal clear water

Environmental pollution due to agricultural chemicals appeared in the 1960s. It resulted from a large-scale reclamation by drainage and the use of agricultural chemicals in the area around Lake Biwa in Shiga Prefecture. The pollution began just after the Second World War. A number of lake-inlets disappeared, and the soil and the water, including its population of fish and shellfish, were contaminated by agricultural chemicals. During this period (1950-1960), Minamata disease and Yokkaichi asthma became national problems.

Various measures were taken such as guidance on appropriate use of agricultural chemicals, and the creation of the Shiga Prefecture's Direction for Safe Use of Agricultural Chemicals. All land within 6 km of the lake was prohibited from use as agricultural land. The Japanese Government revised the Agricultural Chemicals Regulation Law together with other institutional matters.

The Shiga Prefecture government instituted its Pollution Control Ordinance as early as 1969. Two years later, accompanying the institution of the Water Pollution Control Law by the Japanese Government in 1971, the Prefecture of Shiga launched a series of effluent controls which were almost as strict as the environmental quality standards for toxic substances. Yet, while standards of living were improved by the rapid growth of Japan's industrialization and economy during the 1970s, the area around Lake Biwa suffered from the contamination of fish and shellfish by polychlorinated biphenyl (PCB),[6]

[6] PBC belongs to "a class of highly stable organic compounds that are prepared by the reaction of chlorine with biphenyl. A commercial mixture of such chlorinated isomers of biphenyl provides a colourless, viscous liquid that is relatively insoluble in water, does not degrade under high temperatures, and is a good dielectric".

and from a dramatic pollution by heavy metals such as antimony. More stringent standards for pollution control were enforced for the protection of the environment, particularly in the case of antimony pollution.

COMMON GOOD

In May 1977, a red tide suddenly appeared in the blue, crystal clear water of Lake Biwa. In addition, the residents of Shiga Prefecture were shocked by the intensification of the eutrophication occurring in the lake. Housewives who had initiated a movement to eliminate synthetic detergents a few years earlier, became even more determined that the water in Lake Biwa should be clean enough to use as drinking water without any treatment. The "Movement to promote the use of powdered soap" developed into a large environmentalist movement involving an increasing number of local residents with a mission to pass on a clean Lake Biwa to the next generation.

They encouraged the Shiga Prefecture government to issue the *Ordinance Relating to the Prevention of Eutrophication in Lake Biwa,* in October 1979. Commonly known as *Lake Biwa Ordinance,* this by-law resulted from the population's awareness that it was time to shift from a consumer society to a more ecological lifestyle, and resume the ethical principles that were embedded in their ancestral traditions. Local **community involvement** was the first step to stimulate **political will** for the development of another relationship between humans and nature in an industrialized Japan, thus shaping an "eco-society" based on the avoidance of environmental damage, on the provision of realistic options and on good practices for developmental policies.

STEWARDSHIP

A crucial measure for preventing the eutrophication of Lake Biwa was the regulation on the use and sale of synthetic detergents containing phosphorus by the Shiga Prefecture Government in March 1979. But, quoting in its defence the freedom of trade guaranteed in the Constitution, the Detergent Industry Association of Japan immediately launched a large-scale campaign against the prohibition. Resident groups launched heated debates on eutrophication (not very well known at that time) and the substances causing it, and developed supporting activities throughout the whole country in order to draw national attention to the issue.

Finally, the *Lake Biwa Ordinance* was enacted six months later, in October 1979. It prohibits the use, sale and exchange as gifts of phosphorous-containing synthetic detergents within the Lake Biwa basin, and promotes appropriate use of fertilizers and agriculture-use

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Encyclopædia Britannica from Encyclopædia Britannica Premium Service. <http://www.britannica.com/eb/article?eu=62228> [Accessed August 2003].

water management concerning the measures for agricultural waste water, extending them to non-specific pollution sources, such as appropriate disposal of livestock excrement/urine and domestic waste water discharge control. This ordinance set the world's first regulatory standards for factory effluent related to nitrogen and phosphorus.

ACCOUNTABILITY

Last but not least, the preamble of the *Lake Biwa Ordinance* expressly stipulated that "Water is the foundation of human existence" and noted that it was only during the last few decades after its very long history that Lake Biwa water quality became toxic, and that the generation responsible for polluting it also had the responsibility for handing over clean blue water to the next one. The ordinance gave a new sense of the value of water. People had become concerned by the quality of their water resource viewed as a **common heritage**. They were able to change their attitude and acted with **courage** and **determination** to protect their 'Mother Lake' which had provided succour to generations.

An overall and systematic plan for conservation of lake water quality became legally binding. The *Ordinance Relating to the Prevention of Eutrophication in Lake Biwa* – the *Lake Biwa Ordinance* – had an enormous impact on Japan's lake water quality control and the country's environmental conservation movement. Since then, other efforts to control synthetic detergents have been made by most Japanese prefectures. A similar ordinance to prevent another lake's eutrophication was issued in 1981 for Lake Kasumigaura, Japan's second largest lake after Lake Biwa. Finally, the Detergent Industry Association of Japan altered its manufacturing methods to produce phosphorus-free detergents. The old ones, as a result, have now disappeared from the Japanese stores.

Shiga Prefecture constitutes only 1% of the entire country in terms of both area and population. The action of the people living on the shores of the Mother Lake shows that the **determination** of a very small community – compared to a national population amounting to 127 million (in 2000) – to protect a **common good** and manifest a **transgenerational solidarity** changed the attitude of a powerful industry which agreed to change the composition of synthetic detergents throughout the entire country. Thus, a handful of people contributed to a new awareness of environmental security at national level.

Lake Biwa Research Institute

Lake Biwa Research Institute (LBRI)[7] is famous for its interdisciplinary

[7] Lake Biwa Research Institute, 1-10 Uchidehama, Oysu, Shiga 520-0806, Japan.

research on natural, social and humanistic sciences undertaken in a systemic manner. This centre of exchange on scientific and policy matters on lakes management facilitates interaction and **solidarity** in the international community between researchers, policy makers and citizens working on Lake Biwa as well as on lakes and water bodies elsewhere.

Sound management of lakes requires a good understanding of natural, social and cultural issues including water resources, water quality, and lake ecology. Consequently, LBRI research activities range from priority issues of an interdisciplinary nature to specialized subjects. Its research activities are organized as follows:

1. Project-based research

A major part of the Institute's resources is allocated to collaborative research whose major objective is to generate basic scientific information on issues of emerging importance for the lake management over the near future. Research topics include watershed management, limnology, eutrophication control and coastal zone ecosystem management. Research activities are carried out by interdisciplinary project teams which generally consist of researchers from LBRI, and others from universities, governmental and non-governmental institutions as well as from the private sector as deemed necessary and appropriate. The project generally lasts from three to five years.

2. Priority-subject research

Activities provide information used, for example, to develop specific measures urgently needed for a specific lake management policy.

3. Continuing basic research

Each of the LBRI researchers is engaged in one or two categories of research within his/her own specific field on a sustained basis. The aim is to enhance their research capabilities and to complement research output generated by other forms of research.

*4. Toward the restoration of biodiversity in the attached lakes (*naikos*) of Lake Biwa*

This project aims at analysing the mechanisms that maintain the biodiversity (fish, aquatic invertebrates as well as plants) in *naikos* – namely the attached lakes or lagoons close to Lake Biwa and connected with creeks or small channels. It also aims at analysing the social problems for the recovery of the environments of the *naikos* as well as their biodiversity.

5. *Exploratory and predictive studies for the future planning of Lake Biwa environments*

Lake Biwa is suffering from rapid deterioration of its aquatic ecosystem due to both the global climate warming and local eutrophication. An autonomous underwater vehicle, the *tantan,* is used to study and measure the mid- to long-term ecological changes in the lake in order to design a predictive physico-ecological model and to plan its restoration.

The dynamics of community involvement and participation

Water resource issues increasingly involve various actors: scientists and agencies, the public and media, residents, visitors, resource extraction industries, politicians, commercial businesses. Decisions regarding natural resources often affect competing values, for example employment security versus citizens' protection and environmental security. Consensus is difficult to obtain when some groups feel that they are unfairly treated or not listened to. When the time comes to decide on a managerial direction, the easiest way to avoid disagreement and resentment is to involve all stakeholders in the whole process: from the inception stage of a project to its decision-making phase.

While it is impossible for everyone always to agree, a democratic process allows everyone to express their concerns. It is essential that people feel that they have an input in the decision process, that there will be **public support** for that decision, and that the decision is likely to last in the future. Getting all stakeholders in the same room is practical; it helps all participants to hear and understand different opinions and then more easily find common ground. Much better than a mere compromise, examining together the dynamics of various aspects of a project can lead people to realize that their diversity is a source of a creative synergy and of a more imaginative collective creativity.

A culture of water

Discussions on local traditions and beliefs, proverbs and food production related to water usually enhance the feeling of belonging to the same common natural environment, and the understanding that water resources must be viewed as a universal heritage.

Universal Access to Information

A way to make people more aware of the importance of water in their own lifestyle and culture, is to stress the vital role of water in relation to food. The Water Policy Section of Shiga Prefectural Lake Biwa Environmental Department, together with the Kansai International

Public Relations Promotion Office has designed a website entitled "The Blessings of Lake Biwa". Local people and visitors are provided with a documented description of resources about the lake and a section of the website is dedicated to its water in relation to the local traditional food production.

Food habits are most difficult to change because they are deeply rooted since our infancy. A better understanding of the role of water in local food production highlights many cultural characteristics of a population; it increases people's self-confidence and thus, their **empowerment**. The examples below may stimulate an awareness of the role played by the local *culture of water* in other countries, and show how close can be the relationship between people and water in their daily lives, and how this is true throughout the world.

INTEGRATION

A plentiful supply of water and fertile soil is indispensable for the rice farming which plays an important role in the economy of the Kansai region. Rice is produced throughout Japan. Brewing *sake* is said to require five crucial elements: rice, technical skill, yeast, land / weather and a great amount of water that comprises as much as 80% of the final product. Hence fine water and fine rice are natural prerequisites for brewing highly esteemed *sake*. In the culture of the Kansai region, a proverb says: "Wherever you find famous brands of *sake* you will find famous water".

Japanese people believe that three factors determine the flavour of *tofu*: the quality of soybeans is essential together with the technique of the producer. But people agree that the quality of water is equally very important because a large volume of "good-tasting water" is needed during the processing, including when *nigari* (manganese chloride used as a coagulant) is added to firm the *tofu* as well as during its refining in the forming box or mould.

To prepare soy sauce, water must be soft, with minimal iron. Generally, the higher the iron content, the darker the soy sauce becomes, and the harder the water, the lower its ability to extract flavours to make tasty soups.

Japanese people say that the best tea is made with water collected from the tea production area. Once again, the quality of the environment is clearly linked to the quality of food production and health. In Japanese traditions, in the same manner as the tea ceremony, "the epitome of Japanese aesthetics", aims at improving physical and spiritual health, so Japanese people use water in their daily lives to relax.

The way water is used in gardens mirrors the spirit of the place,

the culture of people who live in its catchment area. In Japan, gardens represent a miniature of nature and the presence of water in daily life: in addition to elaborate ponds and waterfalls, they include *karesansui,* dry landscapes made of stones and sand designed to represent currents and waves that mirror the energy of the cosmos.

In all civilizations, people have noted that the sounds of water are comforting and relaxing. Japanese people have invented a variety of ways to enjoy this music of nature: *suikinkutsu,* for example, are often seen in traditional gardens. Using drops of water, these clever devices produce sounds that resemble those of the *koto,* the Japanese harp to which Lake Biwa is compared because of its shape. The device consists of a bottle with a hole in the bottom buried upside down in the ground. Water is dripped through the hole, and the sound of each drop echoes inside the bottle. Another device is the *shishiodoshi,* made of a section of bamboo supported in the middle by a fulcrum. Water flows into one end of the bamboo tube. When it becomes heavier than the other end, it drops. As the water empties, the other end becomes heavier and reverses the direction of the bamboo which strikes a stone beneath and produces a sound. The *shishiodoshi* was originally invented to protect crops by driving away birds and animals.

ILLUSTRATION
Légende:
Lake in the garden of Heian Jingu, Kyoto, Japan
© UNESCO : A. McKenzie

Are Japanese people water lovers? Sprinkling water in streets and gardens, a tradition called *uchimizu,* is a well known example of the important place water has in Japanese lifestyle. People sprinkle water, especially in the summer time, on their doorsteps, in their gardens and in front of their shops to lay the dust and to ease the heat.

Japanese people not only use water in a practical manner for their daily needs, but they actually see, hear and feel water. The sensitivity that seeks taste and poetic sentiment in water, has intensively developed in these islands because its people have long lived with deep respect for nature and its seasonal changes.

Towards sustainable development

The Lake Biwa General Development Project is one of Japan's largest water resource development projects. Started in 1972, its objectives are not only the conservation of the lake's natural environment, but also the restoration of water quality as a resource to improve the welfare of citizens.

This project is one of the best examples of a pioneering effort

based on the three pillars of conservation, flood control and irrigation. It involves the joint effort of 22 bodies run by the national, prefectural and municipal governments as well as the local community. In 1995, 1,600 citizens conducted biological surveys in 36 rivers. Since 1984, about 20,000 students have spent one night each year on a prefectural boat in order to study the lake. Residents also attend environmental classes on land or on a boat originally built for monitoring the lake.

Lessons from South Africa:
a new legal framework for local governance's
good practice

human dignity, empowerment, transparency, open information,
integration, responsiveness,
participation, solidarity, equity,
political will, common good, stewardship,
inclusiveness, accountability

Governance relates to the problem of who is really in charge of the common good. It can take a number of various forms, depending on economic, cultural, legal and political norms of a country. In parliamentary democracies, some politicians aim at improving the well-being of their compatriots "*in the shortest possible time in order to ensure their reelection"*.[8] Social change brought through a democratic process based on transparent, people friendly procedures is more likely to avoid the dangers of such short-term interests and to last much more successfully than any institutional reform which does not involve all citizens and which lacks transparency.

Transparency is a necessary condition for good governance. It facilitates action instead of creating obstacles to development and collective "cre-activity" whereas bureaucratic rigidity characterizing poor governance leads to institutional failure, weakens the people's capacity to cope with water security problems and increases political and social risk. These failures particularly hurt the poor through both economic and non-economic channels, making them more vulnerable and unable to adapt to changes.

Some of the negative changes that have occurred during the last twenty years include the lack of support for agricultural producers and climate change. Large concentrations of impoverished rural people looking for a better life, flood into urban areas in the often vain hope of improving their standard of living. In this context, South Africa's post-apartheid policy reform shows truly innovative efforts in terms of respect for human rights, equity, people's empowerment, economic growth and redistribution, environmental protection, including vast efforts to ensure access to water for all.

Dynamic process in a young democracy

South Africa is famous for its biodiversity reflected in a number of national and private game reserves, and in its coastline. Its cultural

[8] P. ROGERS & A. W. HALL: *Effective Water Governance,* GWP.

diversity is derived from its African, Asian and European heritages: 'the rainbow nation' has made 'a world in one country'. Although it is assumed that the user should pay for basic water and sanitation services, and while many are willing to pay, the poor cannot. South Africa has shown that it is possible to provide the poor with basic services, and to improve the delivery of water services and sanitation. The redistribution of national tax revenues and the creation of a constitutional framework for local government were achieved as part of the broader national development process.

The first democratic elections held in South Africa in 1994 allowed this country to reform totally its water law through the enactment of the *Water Services Act* (Act 108 of 1997), the *National Water Act* (Act 36 of 1998) implemented by the South African Department of Water Affairs and Forestry and, more generally, the *National Environmental Management Act* (NEMA, of 1998).

Located in KwaZulu-Natal, the land of the Zulu,[9] Durban or eThekwini in Zulu, ranks the second city of South Africa with 3.2 million people. The municipal area covers about 2300 km², and contains over a third of the population of KwaZulu-Natal province and 60% of its economic activity (manufacturing, tourism, finance and transport). As the largest and busiest port city on the African continent, eThekwini (Durban) has an extensive network of trading routes with the rest of Southern Africa. The Municipality manages resources and expenditure through the *Municipal Systems Act* in consultation with the residents and the business communities. It has set a comprehensive and flexible twenty-year *Long-Term Development Framework* (LTDF) divided into smaller five-year plans. These four smaller plans allow some flexibility but the LTDF provides a coherent and comprehensive development designed to push back the frontiers of poverty.

Poverty mostly strikes Africans (67%), and Indians and Coloured (20%) in eThekwini (Durban). Women are three times more likely to fall into the "extremely poor" category, and half of the children (28% of the population is under the age of 15) are identified as being poor and a high-risk group. About 40% of all households are ultra poor or poor.[10] Historically, the city did not invest in educating its citizens: 16% of all adults are still illiterate and only 8% have tertiary qualifications. The Municipality is deeply concerned to ensure employment equity and to improve the skills of its councillors and staff in order to stimulate local democracy and accountability so as to support community empowerment, foster local partnerships and meet basic needs in all settlements. The Municipality's *Long Term Development Framework* (LTDF) is aligned

[9] The Zulu belong to the larger Nguni group, one of the three large African migrant groups from West, Central and North East Africa who followed the rivers Zambesi and Limpopo which marks the border between South Africa and Zimbabwe.

[10] eThekwini Municipality Integrated Development Plan 2003-2007.

with the broad approach to sustainable development planning adopted by the Provincial Government through its Growth and Development Strategy for KwaZulu-Natal in 1996. The LTDF is designed to run over twenty years in a flexible manner so that local communities and other stakeholders can be involved: its succeeding five-year *Integrated Development Plans* (IDPs) are the subject of a vast consultative process throughout the municipality.

> *"By 2020, eThekwini Municipality will enjoy the reputation of being Africa's most caring and liveable city, where all citizens live in harmony. This vision will be achieved by growing its economy and meeting people's needs so that all citizens enjoy a high quality of life with equal opportunities, in a city that they are truly proud of."*[11]

The post-apartheid reform following the 1994 elections gathered momentum during its first phase, when the Peoples Budget was approved by the Municipality Council in June 2002. It was a historical moment: for the first time, the citizens of eThekwini (Durban) participated in the preparation of the budget, and the municipal budget was allocated according to their local needs.

The *National Environmental Management Act* (NEMA) constitutes the legal basis of citizens' rights, a legal framework, sometimes compared to a 'mother-law'. It was designed to spread the responsibility of interconnecting people's social well-being and the protection of the environment across the State's various departments. NEMA's principles aim at implementing the environmental right in South Africa's Constitution: equitable access to environmental resources, benefits and services; environmental justice; and promotion of community welfare. Its section 2 strongly emphasizes public participation: "*All people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation".* NEMA clearly offers a sound protection of citizens' rights and the country's ecosystems; its Integrated Environmental Management section stipulates its accountability to consider "*the potential impacts on the environment, socio-economic conditions and the cultural heritage".*

[11] *eThekwini Municipal Area*, see: http://www.durban.gov.za/council

TABLE 1:
Measuring Performance on the Municipality Service Delivery Plan

Key Performance Area (KPA)	*Key Performance Indicators (KPI)*	*5 Yr Targets*
	Outcome	
An improvement of basic living conditions of all citizens, and earning of income for all SMMEs resulting in a better quality of life.	Number of families having access to basic household infrastructure.	85%
	Number of businesses having access to infrastructure and services.	97%
	The number of SMMEs being supported.	60% increase
Result Citizens and businesses maximize their opportunities and potential by accessing all infrastructural and procurement services.	Number of people have accessed basic household infrastructure.	90%
	Increase number of SMMEs contracted.	60% increase
	Number of jobs accessed by locals	40% increase
Core Outputs The provision of an integrated and well maintained infrastructure and procurement service that is affordable and appropriate	Number of households served	85%
	Number of businesses served	95%
	Number of new black businesses supported	50% increase
	Number of new employment opportunities created.	30%
Unit Outputs Effective Procurement Service to Cluster & Units	% of stakeholders satisfied with Procurement Service	95%
	% on time service delivery (OTD)	99%
	% of Economic empowerment achieved	40% increase
	Unit Outputs	
Extend water and sanitation infrastructure to unserved families	Number of new houses supplied with water services	Reduce backlog by 100%
	Sanitation services	Reduce backlog by 25%
	Reduce the number of illegal connections Repair faults Install new connections	Reduce by 60%
	Unit Outputs	
Provide and maintain affordable, quality, equitable and efficient engineering infrastructure	Improved Mobility of Public transport users	>2km PT routes /1000 pop (urban) >0.5km/1000 pop (rural)
	Improved Transport Safety	5% reduction p/a per injury category/mode
	Maximize cost/benefit	Engineering outputs/R 1000

		budget.
	Reduce the number of Dwellings subject to flooding	Reduce by 50%

TABLE 2:
Capital Budget 2003 to 2005/6 - Summary of Allocations
(1 South African rand = US $ 0.15)

Description **Service Delivery Plan** *Housing*	**2002-2003 Comparative Total Rands**	**2003-2004 Total Allocation Rands**	**2004-2005 Total Allocation Rands**	**2005-2006 Total Allocation Rands**
New Housing (PHB)	**320,000,000**	**233,500,000**	**350,000,000**	**385,000,000**
Housing – Letting Flats	**18,600,000**	**16,296,690**	**13,500,000**	**11,000,000**
New Housing Infrastructure	**100,500,000**	**120,000,000**	**160,000,000**	**160,000,000**
Slums Clearance	**60,000,000**	**140,100,000**	**50,000,000**	**55,000,000**
EU Funded Projects	**10,000,000**	**0**	**0**	**0**
Water Reticulation for Housing	**32,000,000**	**28,600,000**	**32,000,000**	**32,000,000**
Electricity Reticulation for Housing	**64,000,000**	**64,000,000**	**64,000,000**	**64,000,000**
Electricity Reticulation – Community		**21,000,000**	**22,680,000**	**24,267,600**

The NEMA allowed the creation of two new national institutions: the National Environmental Advisory Forum whose responsibility lies in informing the Minister of "*the views of stakeholders regarding the application of the principles in the implementation of the Act and other environmental legislation",* and the Committee for Environmental Co-ordination entrusted to "*promote the integration and coordination of environmental functions by the relevant organs of State"*. The Committee is convened by the Department of Environmental Affairs and Tourism and is required by the *White Paper on Local Government* to be the "lead agent". NEMA clearly offers a sound protection of citizens' rights and the country's ecosystems.

The *White Paper* charged South Africa's municipalities with the responsibility of developing local governance in coordination with State government, the private sector and civil society. The President's Co-ordinating Council issued resolutions to articulate the key national challenges identified for sustainable local governance. The Municipality of eThekwini has designed a detailed policy and identified priority actions such as:

- Conduct annual Quality of Life household surveys.
- Set up Customer Satisfaction surveys.
- Use Local Economic Development (LED) surveys to refine business needs and hold an annual business survey.
- Provide a focus on the needs of vulnerable groups.
- Provide forums for ongoing community inputs in order to create an environment for citizens to take action, mobilize resources and make

development happen in their communities.
- Strengthen a cadre of community facilitators to use grassroots strategies to release potential for development within communities.
- Prepare a coordinated programme to generate, manage and distribute information, and a clear and comprehensive Communications Plan for both internal and external communication.

Water, human rights and ecological integrity

Water is a scarce resource of highly variable availability in South Africa where about 11 million black Africans have no access to running water, and about 20 million no adequate sanitation. The principles of the *Water Services Act* (Act 108 - of 1997) and the *National Water Act* (Act 36 of 1998) state that water is a national resource, owned by the people of South Africa and held in custodianship by the State (*National Water Act*, Section 3). This legal framework ensures a holistic approach of the entire water cycle.

The *National Water Act* includes an innovative part, *the Human Rights Reserve* aimed at implementing the distribution of water in adequate quantity and quality to all the citizens of South Africa. The Reserve relates both to basic human needs and to the protection of the country's ecosystems. It guarantees to all citizens the right to have access to a minimum of 25 litres of clean water per person per day, within a distance not exceeding 200 metres.

Water users associations were created to ensure inclusiveness and stakeholders' interaction with the water catchment agencies. Some associations' forums are getting formalized as advisory committees, thus offering an opportunity for the pre-apartheid water boards to evolve into more transparent and accountable users groups. This system helps the municipality to establish and improve participatory governance, to adapt its actions and budget to social and economic challenges, and to maintain the ecological integrity of the city.

The Municipality has decided to support its sustainable development programme by moving from the traditional linear accounting to full cost accounting. It created a total budget of 13 billion rands by adding to its existing budget amounting to 9.8 billion rands (about US $1.4 billion) the city's Natural Resource Base of 3.2 million rands that contributes free services such as provision of water, clean air, raw materials for food production, shelter, fuel, waste treatment and erosion control.

The city has carefully designed a detailed Service Delivery Plan of water and sewer services, with the following key programmes:
- Rehabilitation and maintenance of existing infrastructure that has

reached its end.
- Prioritization of expenditure to maximize the use of existing infrastructure capacity.
- Development of cost benefit assessment criteria and procedures for the extension of infrastructure in line with Municipal objectives and the city's Spatial Development Framework.
- Review of all current service delivery systems at a strategic level and reconfigure them to be efficient and effective.

From 1997 to 2002, the Municipality improved its service to meet the needs of the previously disadvantaged communities, to the extent that a survey held in 2001 showed that approximately 75% of all households had access to adequate basic services: housing, water, electricity and solid waste collecting. Its communication strategy includes detailed budgetary information on a regularly updated website. Such information gives evidence that the Municipality runs a clean, corruption-free administration. It stimulates and does honour to citizen's involvement. It also ensures that they understand their role and responsibilities in service delivery – and in shaping their own future. Faithfully listening to its citizens, eThekwini's municipality issued calls for comments on the IDP for the next five years: "Have your say in Durban's future" on its website design for 2003.

A vision for Durban's future generations

The future lies in the adults' will to educate the younger generations. Much still needs to be accomplished to prepare the 28% of the population under the age of 15. The Business Partners for the Development KwaZulu-Natal Pilot Project produced a series of educational publications aimed at developing health, hygiene and environmental projects with teachers.[12] The booklets are designed to establish interaction between youngsters and adults, whether at school or at home. In addition to practical recommendation and advice, the editorial style includes straightforward questions that train youngsters to think about ethical and democratic values, and their own responsibilities. The very first page of one of these booklets reads:
- Whose responsibility is it?
- What do you think the minister meant when he said that when he was at school the learners acted responsibly?
- Do the learners at your school look after the school environment? If so, how? For example: do they clean the toilets or the classrooms? Are they careful not to waste water?

[12] The English Language Educational Trust (ELET) developed the health and hygiene component of the project which was funded by the European Union through the EU/Mvula Trust NGO Programme. The KwaZulu-Natal Sanitation Task Group also provided some materials for publication.

Some pessimistic or unimaginative minds might say that such a deep and extended reform as the one undertaken in post-apartheid South Africa is too ambitious and complex. It may be so in the light of the traditional linear thinking and in terms of top-down management without external inputs. Building civic responsibility is indeed a long process everywhere. But the results published on eThekwini Municipality's website show that participatory water governance benefits all citizens' health and quality of life, and particularly that of the most vulnerable. Since health is the sinews of development, good ethical practice in water governance opens the way to sustainable development when youngsters are involved, educated and trained to be responsible.

Forests sustain water
traditional assets for sustainable development

Human dignity, transparency, integration, participation,
trans-generational solidarity, stewardship,
conflict resolution, equity, good governance

Traditional societies' struggle for life is often intense and challenging. Their communities refer to a set of normative values and customary laws that discourage many acts that may harm both people and their environment. They forbid the violation of *norms,* namely sets of *ethical principles* including "respect for other people and nature, justice, morality, harmony, sharing resources and helping one another".[13]

Not so long ago, development experts, planners, engineers and extension workers tended to neglect and sometimes even scorn ancestral traditions of small-scale rural communities. Local traditions were referred to in negative terms, considered as mere superstitions coming from a so-called "primitive past", and viewed as an obstacle to development. Today, small-scale communities are better understood, on the one hand because explanations of Cartesian reductionism have reached their limits due to the discoveries of the new physics that lead to a broader understanding of life, and on the other hand because the perturbation of local traditions related to the environment clearly resulted in its degradation.

When development experts ignored the ecological value of the forest, deforestation and surrounding grasslands often ended up as deserts. Consequently, drastic loss in biodiversity resulted in human suffering because when forests, shrubs and other water retaining plants disappeared, the most precious natural resource to maintain life became increasingly scarce. Vegetation also maintains the soil. Where forests could not replenish the soil, they were doomed. Hence local populations were compelled to migrate, often to urban areas where they sought other means of survival and fell into another disaster, endless poverty.

Breaking a vicious circle

Today, local people living in rural villages are understood to be small self-organized societies managing natural resources on a long-term

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[13] *Besao Ancestral Domain Management Plan, 2000* – Paper by E. Dictan-Bang-oa, III World Water Forum, Water and Cultural Diversity Session.

basis, including watershed conservation. Understanding local people's knowledge of their natural resources is a global concern. UNESCO's *Universal Declaration on Cultural Diversity* is one of the most important international references about traditional cultures. It emphasizes that safeguarding indigenous cultures, and cultural diversity in general, is an absolute imperative in the context of globalization. This new awareness makes it necessary for culture to take its place once again at the heart of development policies. This was also one of the key messages that emerged from the Johannesburg World Summit on Sustainable Development, in September 2002 and from the 3rd World Water Forum held in Kyoto a few months later, in 2003.

The fragility of indigenous cultures is one of UNESCO's major preoccupations together with that of biodiversity. The approval by governmental experts of the international convention for safeguarding the cultural heritage is a major step towards adopting a new legal universal instrument. Launched in 2002 during the General Conference, the UNESCO *Declaration on Cultural Diversity* sums up the somewhat more resilient attitude of a new generation of experts that has taken place since the *Convention Concerning the Protection of the World Cultural and Natural Heritage* was issued in 1972, the year of the First International Conference on the Environment organized by the United Nations in Stockholm.

The UNESCO *Declaration on Cultural Diversity* implements the promise of the human rights and fundamental freedoms proclaimed in the *Universal Declaration of Human Rights* in 1948, and other universally recognized legal instruments, such as the two International Covenants of 1966 relating respectively to civil and political rights and to economic, social and cultural rights. It directly refers to the exercise of cultural rights in the international instruments enacted by UNESCO. According to the definition given in its Constitution, culture should be regarded as the set of distinctive spiritual, material, intellectual and emotional features of society or a social group; it encompasses, in addition to art and literature, lifestyles, ways of living together, value systems, traditions and beliefs.

Explicit in the Declaration is the concept that cultural diversity is as important a factor for development as biological diversity. Although a number of traditional institutions have not yet a legal status compared to modern law, they convey ethical values that confer benefit for the conservation of natural resources, including water, and should be promoted for sustainable use. Traditions are an effective means of conveying to future generations a comprehensive local knowledge, although sometimes financially less effective on a short-term basis. Indeed, this knowledge cannot be totally perfect in all its aspects, but it deserves to be analysed in its own dynamic social, cultural, ecological

and economic context.

Today, the needs of local traditional communities are a challenge since they include the need to adapt to globalization without losing cultural identity and environmental security. In the field of education, mother-tongue education and encouragement for multilingualism help provide indigenous communities with quality education. In the field of culture, programmes on endangered languages, inter-religious dialogue – expanded to forms of spirituality, revitalization of cultural resources, and a culture-specific approach to combating AIDS – are examples of practical actions of major interest to these peoples. In the field of water and sanitation, good practices include a combination of the modern utilitarian logic of engineering and quantitative knowledge gathered by water sciences with ethical concern for local spiritual values and traditions. So far, traditions can provide industrialized populations with inspiring ethical examples, thus opening the way to the new ideology conveyed by the UN system since its inception after the Second World War. Cultural diversity presupposes the existence of a process of exchanges, open to renewal and innovation but also committed to tradition, and does not aim at the preservation of a static set of behaviours, values and expressions – an attitude that too often in the past lead to totalitarianism.

The peaceful Besao people

The traditional community of the Besao people live on the western side of Mountain Province, in the Cordillera Highland of the Philippines archipelago. South-East Asia which accounts for 25% of the world's geographic area will be home to 58% of the world population in the next decade. Demographic growth and the global changing economies are adding pressure on natural resources in terms of both products and services. Should poverty be halved by 2015, as is claimed by the Johannesburg Summit, income per capita needs to be raised by 4 to 6% per annum. The challenge is enormous.

Only a small percentage of the *iBesao* – meaning the people of Besao – are gainfully employed, mostly by the Government. Their livelihood relies highly on the availability of their natural resources. Most households make their living from wet rice farming, a rotational crop. Livestock and other food products (rice and sweet potato) are mainly produced for local and domestic consumption – except for some households that grow cash crops such as beans, cabbage, carrots, citrus, bell pepper and potatoes which they sell within the municipality or to neighbouring markets, sometimes as far as Baguio or La Trinidad (in Benguet). Other activities include manual labour infrastructure projects paid by the Government, retail stores, house construction and furniture making – getting their supply

of wood from individual pine lot owners. They also depend on remittance from *iBesao* working in other places.

The Philippines suffer from a rapid loss of forest resources. The projections made by the Master Plan for Forestry Development for forest products, jointly designed by the Asian Development Bank (ADB) and the Development Academy of the Philippines (Tangaytay City), show an increased need for 7 million cubic metres of domestic firewood. It is now currently admitted that deforestation is not a sustainable solution: it would end in dramatic water scarcity. If deforestation increases at its current rate more erosion will cause the hydrological deterioration of watersheds. Water is therefore receiving more attention as a valued resource for domestic use and for food production through irrigation.[14]

The *iBesao*'s traditional rules regarding water are basically analogous to those met in a number of traditional societies throughout the world, and probably since the dawn of humanity when humans directly and very carefully observed natural phenomena to survive in their struggle for life. Water resources ownership is communal. Therefore **water is valued as a shared resource**.

The rights to access and use of water for irrigation come with the land ownership, but they give priority to the use of water that cannot be diverted or stopped. Depletion of water during summer is counteracted by a *dumapat,* a water-council where each family is represented by one of its members. The water-council is responsible for supervising the equitable distribution of water to the fields through the *banbanes,* a system based on taking turns. The *dumapat* is also responsible for controlling water purity. This is achieved by manual tilling of fields on watersheds to prevent organic leaching caused by ploughing and by various measures including the prohibition of grazing and butchering animals near or above water sources. Spitting and using soap near water sources are also prohibited.

Are traditional rules relating to water threatened in the Philippines? The example of a long dispute in the National Park of Mount Isarog (MINP), in the Camarines Sur Province of Luzon Island, is an interesting example of **conflict resolution between indigenous normative values and modern law.**

Conflict resolution between past norms and present laws

Indigenous people represent about 20 per cent of the archipelago's total population. A condescending attitude illustrated by a Supreme Court

[14] Ecotourism and biodiversity values are also increasingly considered as forest products.

decision issued by the Provincial Board of Mindoro in 1919 described them as "of a low grade of civilization". Their dispossession and displacement came to an end when, in July 1997, the Philippines Congress enacted legislation "*to recognize, protect and promote the rights of Indigenous Cultural Communities/Indigenous Peoples (ICC/IP)".* The *Indigenous Peoples Rights Act* (RA 8371) gives provisions to guarantee social justice and human rights, to recognize and protect cultural integrity, including "*the inherent right of ICCs/IPs to self-governance and self-determination".* It also contains provisions about ancestral lands, defined as all areas generally belonging to ICCs/IPs held under a claim of ownership, occupied or possessed by ICCs/IPs, communally or individually since time immemorial, and which are necessary to ensure their economic, social and cultural welfare. The ownership includes "*lands which may no longer be exclusively occupied by ICCs/IPs but from which they traditionally had access to [sic] for their subsistence and traditional activities, particularly the home ranges of ICCs/IPs who are still nomadic and/or shifting cultivators".* Although it also explicitly mentions "*minerals and other natural resources"* within ancestral domains, water is not specifically mentioned. Why do minerals take precedence when water is essential for life?

The recognition of the **rights of indigenous communities** was not new in the Philippines. Their rights ("*within the framework of national unity and development"*), including "*the rights of indigenous cultural communities to their ancestral lands",* were acknowledged in the 1986 Constitution, and in the *Ancestral Domain Bill* in 1991. In the Philippines, it was accepted that the right to lands includes **the right to water**. The Department of Environment and Natural Resources (DENR) had responsibility for taking the "*preparatory steps toward the recognition of ancestral domains"*, namely to provide the indigenous communities with certificates of ancestral domain claims (CADCs). By 1997, 117 CADCs covered about 49,400 beneficiaries and 1.6 million hectares. By June 1998 the area had risen to 2.5 million hectares.

Sharing perceptions

In the Philippines, the dual status of indigenous peoples' territories as ancestral domains and protected areas has spawned conflicts between the *Lumad* (indigenous people) and government bodies responsible for managing these areas. In November 2001, indigenous people and the Department of Environment and Natural Resources (DENR) participated in a national conference on protected areas (in Davao City). They shared their perceptions about these conflicts. Both parties agreed that the overlapping laws affecting the indigenous or *Lumad* territories was a major cause. The *Lumad* also claimed that consultations were conducted haphazardly, or even not done before their territories were declared protected areas. DENR officials denied the allegations and said the

Lumad had their own representatives in Protected Area Management Boards (PAMB). The *Lumad* invoked the **Indigenous Peoples Rights** to support their claims on ancestral domains – including both land and water, stressing that their Council of Elders or some similar customary structures of governance should prevail. DENR officials answered that the jurisdiction over these areas was based on the National Integrated Protected Areas (NIPA) System Act, and that *Lumad* lose their right to extract resources since the area was ruled by the Protected Area Management Board (PAMB). This multi-sectoral policy-making body decides on all matters relating to planning and resource protection of the National Park through a five-year integrated conservation and development project designed to protect the biodiversity of the National Park and based on information, education and communication, capacity development in environment, forest rehabilitation, biodiversity monitoring and land tenure.

Yet this national conference opened a new perspective. An officer of the Legal Rights and Natural Resource Centre stated that in the case of ancestral domains declared as protected areas, the Indigenous Peoples' Rights Act (IPRA) superseded the National Integrated Protected Areas (NIPA) law because it was more recent. IPRA was enacted in 1997 whereas the NIPA law in 1992. He also argued that IPRA is a specific law compared to NIPA, which recognizes in general terms the rights of the *Lumad* in protected areas (Section 13). Knowing that no law is ever perfect, this officer very wisely pointed out that "*while it is ideal to resolve these conflicts through the courts, it is more viable to formulate local solutions based on specific conditions"*.[15]

This example of a conflict between on the one hand a modern State's law customs, and on the other one traditions, customs and testimony of elders was solved, at least partly, through **good governance**.

Good governance

A study made by the Asian Development Bank shows that the provision of the Certificate of Ancestral Domain Claim (CADC) Programme in the Cordillera created a strong basis for the observance of *iBesao* traditional governance and traditional customs. It stimulated their social development while it protected their cultural integrity.

Formal authority was attributed to elected local government officials who were perceived as facilitators and coordinators of activities related to national interests. Informal leadership remained entrusted to the community elders – the *lallakay* or *amam-a* – whose

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15 *CyberDyaryo*: http://www.codewan.com.ph/CyberDyaryo

vast experience, wisdom, **integrity** and **willingness to serve others** and their traditional social organizations, such as the *dap-ay*. Some elders run for office and run as elected officials to assume the *lallakay* leadership functions, and others are more or less relegated to cultural functions.

Still existing in many communities, the *dap-ay* is the political, social and cultural core of the *barangay*. In the old times, it maintained unity and cooperation: men used to discuss important community matters in this place where the elderly performed the rituals, assisted by the younger generation, and *lallakay* settled disputes about water and other problems between the community members. Some were abandoned or only used to conduct rituals until the CADC was introduced and renewed cultural awareness. The CADC programme considers the revival of traditional practices to be a way to foster adaptive development for indigenous people.

Indigenous people's lack of modern technical skills including those to gather the necessary information, to process information and analyse the data and to make it operational raised some concerns. But, as pointed out by the Asian Development Bank, the *iBesao* possess "*a very unique and sophisticated resource management system that is rooted in their deep awareness of their forefathers' efforts, and the respect and profound devotion to what is spiritually and morally just"*.[16] Most *batangans,* or the forests, are identified as sacred because they are the dwelling place of gods or spirits.

The *Lumad* consider the *batangan* as their source of both water and wood. The ownership and access depends on whether the lot belongs to:

- the municipality (one or several *barangay*)
- a clan or kinship
- an individual.

The owners of the forest lots are those who generally determine who has access to the water and the trees and how they are used. Cutting trees in somebody else's lot without permission is illegal and socially unacceptable. The forests – and the water they sustain – are maintained through the belief that they are sacred places.

This traditional stewardship is nevertheless endangered by mining works, and final decisions on the issue are centrally based. As stressed in the Proceedings of the Final Consultative Workshop organized by the Asian Development Bank, the "voluntary, prior informed consent" required only comes in areas formally considered as ancestral domains.

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[16] ASIAN DEVELOPMENT BANK, *Proceedings: Final Consultative Workshop, Philippine Country Case Study on Forest Policy and Institutional Reforms:* 34.

Yet, according to the Asian Development Bank, it is now recognized that *"It is vital that indigenous culture be well understood as it could inherently provide for contextually relevant social development and governance mechanisms. This also implies that policies and institutions which would involve indigenous people should adapt to their culture and not the other way around"*. Differing concepts of development between traditional leaders and the elected ones have highlighted policy gaps and contributed to proposed action for other sustainable water projects:

- Science-based policy dialogues among key government officers, NGOs and private stakeholders.
- In full **partnership with local and indigenous communities**, recognition of the value of indigenous knowledge systems and full use of them.
- Wide public dissemination of consensus points.
- Formal recognition of culturally relevant forestry and water management practices of indigenous communities as valid and legal.
- Strengthened consideration of alternative livelihood.
- Comprehensive assessment of the multidimensional nature of poverty**.**
- Promotion of **gender equality**.
- Targeting of usually unrepresented vulnerable groups such as indigenous peoples and "listening to the voices of the poor".
- Conduct of focused studies in selected watersheds on the environment-poverty nexus; incorporating results in guidelines for project/programme design and development of monitoring systems.
- Fit procedures for indigenous communities, and requirements to traditional practices and cultural imperatives.
- Development of locally appropriate, comprehensive and multi-sectoral water and forest protection programmes.
- Network government agencies, academics, private sector and NGOs for **information sharing.**
- **Decentralized** approvals and contracts signed at more administratively permanent local levels.
- Integration of good governance support components in projects and programmes: **local leadership training**, promotion of **transparency**, and of **consultative decision-making processes**…
- **Combating graft and corruption.**

Finally, experience clearly shows that without information, education and communication programmes directed at policy and decision-makers as well as the general public, the deep understanding that builds political will for urgent policy and institutional reforms cannot be achieved.

Women acting locally in the Andes

**Self-sufficiency, gender equity, rights to water and health,
political will, inclusiveness, common good,
women's empowerment, respect for cultural diversity,
effective clean low-cost technologies,
universal access to information**

As water is essential for life, it is one of the most critical issues of sustainable development and good practice, providing a clear illustration of the interrelationship between people, resources and development. Our planet's water resources are limited whereas humanity's needs for safe drinking water and sanitation are constantly on the increase. Public health is a concern not only for those in the medical profession but also for hydrologists and all activities dependent on the water supply – including food production. In many countries, women traditionally take a crucial part in basic agricultural production. Too often irrigation projects do not take into account the contribution of women. To help women alleviate their daily workload at home and in the fields, a number of non-governmental organizations have focused on the design of effective low-cost technologies for wells, pumps and water treatment that can raise women's self-sufficiency and thus strengthen gender equity.

Strong-minded women at work

In the Andean highlands, ancient and modern conquerors denied the indigenous population a role in the management of springs and rivers. Water became a source of conflict: local water management by indigenous communities was neglected or suppressed by national policies and legislation. Often, Indian peasants have fought to organize and manage the irrigation system according to their own traditional rules.

The town of Licto (about 15,000 people) is located in the centre of Ecuador, near Riobamba (a population of 100,000 that makes it the second city of Ecuador), at about 200 km from Quito and near the volcano Chimborazo (6310m). Some 28 indigenous rural communities live in this area which endures extreme cold at night and heat during the day, and suffers from soil erosion at an altitude of 2700 to 3600 m. The land holdings are extremely scattered and often reduced to 1-3 hectares. The poor quality of the land added to the lack of water combined with demographic pressures accelerates the degradation of natural resources. Women are usually producing food crops both to feed their households and for local markets. Men migrate to the cities in the hope of earning a wage, hoping to improve their families' standard of living.

Until the beginning of the 1990s, most women and especially widows ranked among the poorest, facing great difficulties in gaining recognition of their rights to water, and were often mistreated by the somewhat feudal agricultural system run by the *blancomestizos* (10% of the whole population).

The local union of *blancomestizos* farmers[17] invited the indigenous community to participate in a vast irrigation project in 1989. The project did not raise much enthusiasm, a similar project of rice irrigation designed by the National Ecuadorian Institute of Hydrological Resources (INERHI) having brought more disillusion than tangible success.

The project was designed on the basis of aerial photos and hydro-geological expertise only, in a top-down manner by the INERHI experts in the offices of Quito. It was ambitious, but it excluded the indigenous community from decision-making. It aimed at extending an already existing channel to cover an area of 1340 ha flowing at 1100 l/s, which required a criss-crossed network of secondary channels as well as some siphons and tunnels through the mountain. The intention was to irrigate the fields by night and day. The project did not take into account the complexity of the water distribution for sometimes more than 300 holdings.

An indigenous group mainly composed of some strong-minded women decided to seize the opportunity to change the system, and to challenge the existing power structures. At first, the *blancomestizos* farmers refused to cooperate with them. Women insisted on their rights. An agreement was finally signed between INERHI, CODOCAL, COSUDE (the Swiss Agency for Development and Cooperation) and the non-governmental organization CESA (Central Ecuatoriana de Servicios Agrícolas) to form the Inter-institutional Committee of Licto (COIL) responsible of the coordination of the project. INERHI would complete the building of the main infrastructure, and CESA and CODOCAL would be responsible for a comprehensive project of rural development, which included reafforestation, agriculture, soil conservation, and a special programme "women and health".

Yet, the water allocation resulting from the new project raised a number of problems: the peasants living in the sierra could not afford to pay for the water at prices fixed at national level that favoured the *blancomestizos* who, as the women asserted, "did not get their hands dirty in the fields". The peasants felt that the water belonged to those actually producing the food. The women were also highly reluctant to maintain the fields' irrigation system at night. Rather, they wanted to have reservoirs at their disposal. After long discussions, the women

[17] The *Corporación de Organizaciones Campesinas de Licto* (CODOCAL).

presented a document to INERHI, whose representatives claimed it to be 'illegal'. A review of the project and its potential consequences failed to stimulate new discussions. Most women were illiterate: topographic maps and figures did not appeal to their understanding nor to their imagination. Besides, the whole project was not presented in Quechua.[18]

Suddenly, the highest representative of the national water agency took the matter in hand, analysed the situation, and concluded that this impasse would lead to a new disaster, both social and technical. He supported the technical change proposed by the indigenous community in March 1994, and agreed that the irrigated surface be enlarged to 1700 ha in order to include the 'forgotten areas'. Although the national water agency was not in a position to change the law, the peasants who actually used and managed the water to cultivate the fields, accomplishing self-imposed tasks at communal and inter-communal levels, were now entitled to use not only the available water and infrastructure, but also to participate in decision-making relating to the management of the irrigation system.

In December 1996, however, about 1200 peasants from the 16 communities benefiting from the Irrigation and Rural Development Project of Licto joined a demonstration in Quito. The peasant families persuaded the Ministry of Finance to authorize the funds necessary to finalize the irrigation works and they were able to return home with the necessary papers signed. Exactly one year later, water flowed in the area of Licto: irrigation was adapted both to the local environment and to traditional water rules. This fight for water probably changed the national political scene. The indigenous population's fundamental rights began to receive improved recognition in Ecuador from the early 1990s.

An Indian woman, Iñès Chapi, was so active in supporting the creation of the users' irrigation committee in Licto that she was elected to its board. She challenged some misconceptions about indigenous communities, and demonstrated that a locally adapted system could highlight the common interests of formerly distinct social groups. The indigenous initiative to create an Irrigation Committee meant building a new relationship between users and owners,[19] and developing a respect for cultural diversity.

From isolation to solarization

Wind and solar energy can help where water is insufficient. Sun is a

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[18] Quechua is an indigenous language of the Andean region, spoken today by approximately 13 million people in Argentina, Bolivia, Northern Chile, Southern Colombia, Ecuador and Peru. It was the official language of *Tawantinsuyu,* the Inca Empire.

[19] More information: Rutgerd.Boelens@Users.TCT.WAU.NL

source of unlimited, clean energy for everybody. Solar equipment is well adapted to rural and isolated areas where it gives the possibility of creating employment opportunities.

Access to water is frequently a problem in developing areas, whether in high mountainous regions or in coastal zones and small islands, especially for women who are almost always those responsible for the daily collecting of water. Wind energy, and solar desalination can improve the living conditions in arid areas. Solar desalination is reliable and need not be too sophisticated or too expensive. One such system was developed by the Technical University of Berlin as early as the late 1970s. Salt or brackish water is put into black covered basins which are then heated by solar radiation, causing evaporation. The ensuing condensation is collected from the inner side of a glass or plastic roof.

Another problem that can be solved by using solar energy is sanitation. UNICEF WATERFRONT popularized what has been called the VIP pit latrines in early 1982. The concept was developed by Peter R. Morgan of the Blair Institute in Harare, Zimbabwe, and D. Duncan Mara, Professor of Civil Engineering, University of Leeds, United Kingdom. The VIP designation does not refer to visiting officials, but stands for Ventilated Improved Pit latrines. The VIP latrine is a vent pipe built on the sunny side of the latrine and covered by a screen on the top. For odour control, the sun heats air inside the vent pipe causing strong air circulation. The odours in the pit are drawn up through the vent pipe, leaving the superstructure odour-free. The effect is strengthened by wind passing across the top of the vent pipe. Flies and mosquitoes are attracted to the top of the vent pipe but the screen prevents them entering (and the flies laying eggs). If they do succeed in entering they are drawn up to the light and emerge from the pit. Both flies and mosquitoes are deadly scourges: flies are the vector of onchocerciasis,[20] trypanosomiasis (the sleeping disease),[21] and mosquitoes are the vectors of malaria,[22] dengue,[23]

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[20] Onchocerciasis, the second leading cause of blindness worldwide, affecting over 18 million people, is endemic in more than 25 nations located in a broad band across the central part of Africa. Small endemic foci are also present in the Arabian Peninsula (Yemen) and in the Americas (Brazil, Colombia, Ecuador, Guatemala, southern Mexico, and Venezuela).

[21] More than 66 million people in 36 countries of sub-Saharan Africa suffer from trypanosomiasis.

[22] Malaria occurs in over 100 countries and territories. More than 40% of the people in the world are at risk. Large areas of Central and South America, Hispaniola (Haiti and the Dominican Republic), Africa, the Indian subcontinent, South-East Asia, the Middle East, and Oceania are considered malaria-risk areas (an area of the world that has malaria). The World Health Organization estimates that yearly 300-500 million cases of malaria occur and more than 1 million people die of malaria. Africa's GDP would be up to $100 billion greater if malaria had been eliminated years ago.

[23] Dengue and dengue hemorrhagic fever (DHF) are the most important mosquito-borne viral disease affecting humans. Dengue global distribution is comparable to that of malaria, and about 2.5 billion people (1997) live in areas at risk for epidemic transmission. The case-fatality rate of DHF in most countries is about 5%; most fatal

and filariasis.[24]

Diarrhoeal disease, the cause of death of at least 2 million children under the age of three, is spread by unsafe water. Using the sunlight to improve the quality of drinking water at home is easily feasible. Solar radiation in the near ultraviolet range (300-400 nm) inactivates harmful micro-organisms.[25] Transparent plastic or glass bottles filled with contaminated but clear water are put on corrugated iron roofs. Exposure to the sun for 6 hours/day, or for 1 hour when a 50°C temperature is reached, is sufficient to destroy coliforms causing diarrhoea.[26]

Clean water for domestic use

The collection of water can take up to 60% of women's and girls' time in certain communities. It is one of the reasons why young girls are forced to abandon school, and prevents their participation in formal education programmes. The carrying of water over long distances is a health hazard especially during childhood and during pregnancy. Contaminated water is another major health risk in developing countries and because of their frequent contact with it women are the most at risk. Access to a supply of good quality water at an affordable cost is a basic need for all, and is intrinsically linked to the rights to water, health and education. When talking about ethical and moral values relating to water and human life the role of women is of the utmost importance. Not only are women almost always those responsible for the daily collecting of water, they are also those who decide on how it is to be used within the household.

Collecting water in tanks is not new, but tanks made of ferro-cement are too expensive for poor communities. The idea of water-baskets originated from Thailand where UNICEF discovered rural women carrying water in baskets covered inside with an impermeable layer of tree resin. The concept was developed to meet the needs of Kenyan households, where long-term water storage is required. The traditional granary basket is plastered inside and out, with a 2:1 sand/cement mixture. In Kenya, the basket frame is made of sticks from a

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cases are among children and young adults.

[24] Originally found in Africa, it was brought to Central America at the time of the slave trade. Some 120 million people in about 80 countries are infected with lymphatic filarial parasites, and it is estimated that 1 billion are at risk of acquiring infection.

[25] ACRA, A. & al. "Desinfection of Oral Rehydration Solutions by Sunlight", *The Lancet,* 6 December 1980.

[26] The method is currently known as SODIS (Solar Water Desinfection): see www.sodis.ch and the Netherlands Water Partnership: www.nwp.nl • IRC provides advice, research and training on low-cost water supply and sanitation in developing countries): www.irc.nl • The PRACTICA Foundation facilitates exchange and the development of low-cost water technologies: www.practicafoundation.nl • AGROMISA provides information on small-scale and sustainable agriculture in the tropics): www.agromisa.org

woody shrub which grows throughout the country. It can also be made from bamboo, as in Rwanda and Burundi. The basket shape is not as important as the fact that the bottom must be omitted so that the sides can be bound with a base made of concrete or of layers made of a naturally-found mixture of sands and pebbles, through which the pipe delivers the filtered water.[27] But this adaptation of a traditional grain basket made waterproof by the addition of mortar is susceptible to rotting and termite attack. Hence the design can only be used for a short period of time and in case of emergency.

Clay water filters are well known throughout the world for removing turbidity, but they do not eliminate bacteria. A new filter treated with colloidal silver (CCS or Ceramic Colloidal Silver) is relatively inexpensive. Evaluations, including a USAID funded test, show that it removes turbidity and 98% to 100% of the bacteria causing diarrhoea, cholera and other water-borne diseases. Its maintenance consists of cleaning it with a brush and changing the filter element (US $2) every one to two years. Filled up twice a day, the filter produces enough drinking water for a family of six. Its commercial production is already developing in Guatemala and Nicaragua, and is starting in other countries.[28]

Treadle, rope, horse and wind powered pumps not only facilitate women farmers' lives in alleviating their irrigating tasks but also reduce the distance to access water. Their production, marketing and maintenance at local level can also help women in creating private enterprises and thus provide a new source of income that ensures gender equity, respect for women's rights and their self-esteem.

Treadle pumps for small-scale irrigation from wells down to 1-7 metres are already produced by 300 local workshops and used by more than 1 million poor rural families in Bangladesh who could not afford a motor pump. The treadle pump requires only a US $20 investment and generates US $100 a year. Coined the 'Moneymaker pump' in Kenya, the device is now adopted throughout East Africa.[29]

Rope pumps for wells 50 metres deep are used by more than 5,000 families in Nicaragua where a survey (2002) indicated that families owning one, earned US $220 more than those without a pump. More than 20 local workshops are currently producing rope pumps in Central America. It is known as the 'Elephant pump' in Zimbabwe, where over 98% stay working after installation.[30]

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27 UNICEF, Eastern Africa Regional Office, P.O.Box 44145, Nairobi, Kenya.

28 For more information: www.who.int; www.potpaz.org; www.elfiltron.com

29 For more information: www.ideorg.org; www.aprotec.org

30 For more information on evaluation: www.irc.org; on Zimbabwe: www.pumpaid.org; on Nicaragua: www.ropepump.com

Horse-powered pumps can lift 60-120 litres per minute from a well 20 metres deep. Horses are commonly used to power rope pumps in Nicaragua in combination with wind power derived from a locally manufactured wind pump designed in Holland. The investment can be recovered within one to two years.[31]

Water access is also a problem among people suddenly obliged to adapt to the harsh conditions of a refugee camp, where the emergency situation does not allow any other choice than to undertake 'water-harvesting' and to rely on making one's own tools for survival. Women can be considered as victims not only because of the direct impact of environmental degradation, but also because of their economic status. The 1991 *Human Development Report* (UNDP) recognizes the 'gender bias' in poverty: women form the larger proportion of the world's poor and they make up the greater number of refugees in the world, it being estimated that 80 per cent of refugees are women and children. Architect Yona Friedman, born in 1923, was one of the first to suggest that architecture be conceived by users. A consultant at UNESCO and other UN agencies, he was also one of the experts who prepared the UN Conference on Habitat, Vancouver, Canada, 1976. Very active in the **communication of scientific knowledge at grass-roots level**, he designed what he called *water-traps* for people living in harsh conditions, such as nomads and refugees to whom water scarcity is a dramatic problem and drip irrigation can be an advantageous solution. He presented them as sketches to be used for wall-journals, the least expensive medium for making **information accessible to all** 24 hours a day and for stimulating discussion.

[31] For more information: www.ropepump.com

Transnational management and bioregions for conflict resolution

Common good, democratic dialogue, inclusiveness, transparency, confidence, shared values, solidarity, human development, equity, access to information, respect for cultural diversity, regional stewardship, environmental justice

During the last century, our understanding of the nature of reality has evolved from a fixed world made of separate phenomena, and a linear vision of evolution, to that of a constant and dynamic co-evolution of interacting systems. Barry Newell and Robert Wasson, from the Australian National University, explain: "Causality through feedback loops is circular: a change in A causes a change in B; then the change in B causes a change in C; then the change in C causes further change in A – and so on around the loop. Such circularity, while dominant in the world, is often hard to see (particularly if there are delays in the loops) and so it is not well represented in our everyday thinking".[32]

The static view inherited from the European Renaissance justified States' frontiers supposedly fixed once and for all. Today our perception of reality is far more complex: we know that all ecosystems, including humanity and nation states, are interdependent, and that interdependency also means mutual constraints. This new perception is transforming national water policies to support society's adaptative process to new climatic conditions, and to resolve conflict when disputes occur between riparian states about water.

Transnational management of fresh water

The distribution of water between States that share rivers has resulted in many wars throughout history. It is still a crucial question, especially when considering the global change that is taking place. Since Antiquity, water has been an important political factor in the Middle East, the driest region on Earth. Most water resources are internationally shared rivers, and access to water means survival. Yet, as Joseph Dellapenna[33] argues, "water is simply too critical a resource to fight over, and a river basin, including both its surface and underground waters, hydrologically forms

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[32] NEWELL, B. & WASSON, R. "Social System vs Solar System: Why Policy Makers Need History", *Conflict and Co-operation related to International Water Resources: Historical Perspectives,* Technical Documents in Hydrology, IHP-VI, No 62, Paris, UNESCO, 2001.

[33] Professor of Law, Villanova University School of Law, USA.

a single unit best managed without regard to international borders".[34] Water resources shared by several countries are usually managed through international law. Today, our biosphere and the planet's water resources must be considered as a whole if humanity is to meet the challenge posed by increasing water scarcity and the climatic change.

The *United Nations Convention on the Law of Non-Navigational Use of International Watercourses* stresses the obligation to respect an "equitable utilization" of the water resources (article 5), and subordinate to it, to use "due diligence" to avoid causing "significant harm" to another riparian State (article 7). The United Nations has no executive power to act upon States' decisions. This is sometimes regretted because it apparently slows down conflict resolution. But its constitution refers to the respect of national sovereignty. The UN is a stage where governments of all nations, rich and poor, are actors. The UN system's virtue is to allow Member States to express their views at countless meetings of apparently interminable length. Indeed, law can stimulate dialogue but it never replaces it. Dialogue is easier and traditionally used in small communities, as is the case of the ancient *Tribunal de las Aguas* in Valencia, Spain.[35] But today, in our "global village", the international **democratic dialogue** allows UN Member States to share their concepts and experience, and thus moderate and even modify their views for the sake of **common good**. It allows careful and conscious examination of best practice that can later result in **environmental equity, social justice** and **conflict resolution**, especially in the case of conflict related to international water resources.

Several hundred treaties on internationally shared water are currently in force, extending from simple promises to consult before changing a water source, to others not to intervene in water uses in the other State, nor to attempt to partition the water for their benefit, others to cooperative management, and finally to integrated management.

Management of water in Africa is a complex problem. Traditional collective ownership of water – held in oral tradition and not in written documents, the influence of religious authority, the decline of traditional management, all interfere with the thorny problems of interstate relations resulting from boundaries inherited from colonialism.

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[34] DELLAPENNA, J. "The Nile as a Legal and Political Structure", *Conflict and Co-operation related to International Water Resources: Historical Perspectives,* Technical Documents in Hydrology, IHP-VI, No 62, Paris, UNESCO, 2001.

[35] The tradition is maintained, although it is no longer sufficient to face the complexity of modern irrigation works. Each Thursday, on the stroke of twelve, 8 men wearing the farmers' typical black blouse, gather and solemnly sit in a circle on stately wooden chairs in front of the Cathedral. Each of these 8 *sindicos* represents one of the 8 channels of river Turia, which for about 2000 years irrigated the 17,000 ha of the famous Huerta (garden) Valenciana. Invested with the supreme authority for the water sharing, they represent the consciousness of self-responsibility in this ancient peasant community.

The Nile (the longest river on Earth at 6,875 km) and its tributaries flow across ten countries.[36] It is a classical example of the promise and difficulties of transnational governance of fresh water. The Blue Nile, the major source for the river flow (75-90%), originates from Lake Tana in Ethiopia and flows to Sudan and Egypt. The White Nile flows from Central Africa. Egypt is the main consumer of the Nile waters since Antiquity, with about 75% of the total flow. The annual Nile floods irrigated Egypt until the mid-nineteenth century, when the first low-level dams were constructed, followed by modern hydraulic works, which culminated with the Aswan High Dam inaugurated in 1971.

The *Nile Treaty* was ratified in 1959, seven years after Egypt was proclaimed a Republic. It included both Egypt and Sudan's consents to new dams in each country. Twenty-five years later, Egypt needed more water for its growing population and Sudan increasingly resented not being able to use the Nile flow for its fields. Political turmoil prevented Ethiopia, and to a lesser extent Eritrea, undertaking water development projects. Ethiopian development of hydropower facilities along the Blue Nile would not affect Sudan and Egypt, but irrigation extraction from its water might absorb as much as about 40%.

Egypt and Sudan claimed that Ethiopia should not undertake works without their consent, referring to the agreement passed between Great Britain and Ethiopia in 1902. On the one hand, Ethiopia had renounced this agreement in the 1950s, invoking in their support the fact that Egypt and Sudan had denounced colonial-era treaties when they were not in these countries' interest, and on the other hand, it also protested at not being included in the *Nile Treaty.* As required by its article 5, Egypt and Sudan should have presented a united front to Ethiopia, ranked last of all nations in terms of national wealth *per capita,* according to the World Bank (1995). Rather, Egypt and Sudan undertook separate negotiations with Ethiopia, despite their commitment to present a united front about the Nile waters pledge in the *Nile Treaty.* Egypt and Sudan invoked the "no harm" rule expressed in the 1991 version of the *Draft Articles on the Law of Non-Navigational Use of International Watercourses* (article 7).

Finally, Egypt, Rwanda, Sudan, Tanzania, Uganda and Zaire (six of the Nile ten riparian countries) signed an agreement to create a *Technical Cooperation Committee for the Promotion of Development and Environmental Protection of the Nile* (TECCONILE), and an *Action Plan for the Nile River Basin* was prepared in 1994. Both highlighted that the shared need for best management of water should be a source of regional unity and well-being rather than discord between the States of the Nile Basin, covering an area of 3 million km² (1/10 of the African continent).

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[36] Rwanda, Burundi, Democratic Republic of Congo, Tanzania, Kenya, Uganda, Ethiopia, Eritrea, Sudan, Egypt.

TECCONILE aims at stimulating these countries to manage their increasing water shortages through a legal and institutional framework. It is designed to promote:

- **integrated water resources planning and management** (including assessment and analysis of water resources availability and demands, national water development and management plans, assessment of the impact of potential climatic changes, updating the water balance of Lake Victoria and management of wetlands);
- **capacity building and human resources development** (to improve water resources management methods and procedures, strengthen related agencies and national and regional institutions for water quality and environmental protection, establish a basin-wide data base and to assess the needs and prepare a training programme);
- **regional cooperation** (to develop a legal and institutional framework acceptable to all basin countries);
- **environmental stewardship** (control of land deterioration, of siltation, pollution and eutrophication in equatorial lakes and the White Nile, and environmental protection for major lake subregions, including a diagnostic of the Nile Basin sponsored by UNEP.

Finally, the ten countries joined together to prepare the Nile River Basin Action Plan (NRBAP) within the framework of TECCONILE in 1995, with technical and financial support of the Canadian International Development Agency (CIDA), including 22 technical assistance projects.[37] One of the projects has as its objective the development of a cooperative framework for the Nile management aimed at producing a legal agreement between the riparian States to their mutual benefit. Implemented with UNDP funding, it is the first programme including all its riparian countries, except Eritrea. Since 1997, the World Bank conducts and coordinates donor support. With UNDP and CIDA, it also facilitates dialogue and cooperation among the riparian population in order to create a climate of confidence. Cooperation between individuals as well as between nations is based on confidence. Drawn to a common goal, the concerned States agreed on an overall process, the *Nile Basin Initiative* (NBI).

The promise of good practice

Following extensive consultations, the idea of a *Shared Vision* was adopted in February 1999, and the NBI process was officially launched in September 1999. The riparian populations' inclusiveness in the development of the *Nile Basin Initiative* is so crucial that a *Shared Vision* called for developing an actual, methodical discourse that would involve all stakeholders. At local level, the NBI should improve in a sustainable manner the well-being of concerned communities. At global level, it

[37] CIDA's support amounts to US $100 million.

would also impact on one of the world's main water resources, thus interacting with other global ecosystems, and influencing the economy and political issues of the whole region. The ensuing ripples would ultimately impact on the rest of the world.

Establishing an organized discourse involving civil society at the very early stage of a development project is a sound innovation in international development processes. After discussion to clarify what best method should be adopted, it was decided to organize a special workshop and to invite a sample group of the concerned communities: representatives of organizations (NGOs, academics, international network organizations, UN agencies, bilateral agencies) involved in development, poverty alleviation, environmental security, conflict resolution, coming from local, national, regional and international levels.

Titled *Finding a Platform for Engagement,* the workshop was co-hosted by the World Conservation Union (IUCN), the World Wide Fund for Nature (WWF), the World Bank, sponsored by the Rockefeller Foundation, and held at IUCN Headquarters in Switzerland, in January 2001. At first, the organizers themselves recognized that they had not a clear initial idea of how the discourse would be organized. The key concept was that it should reflect the free expression of the civil society's true feelings, needs and proactive will. The workshop was intended to be a 'brainstorming meeting'.

A draft agenda was mailed with the invitation two months before the workshop was held, with a request for comments and suggestions (none was received). The workshop objectives were to share all information available, to develop the idea of a *Civil Society Discourse* about NBI, and not the least in the context of some thorny relationships among riparians, to stimulate sound communication among participants with a number of various interests. Three elements were to be balanced:

- Sharing: all participants would have an opportunity to explain their concerns and aims in developing the Nile Basin.
- Agreement: the workshop should ensure they would understand and freely agree on the process.
- Conviviality: it should provide sufficient time to discuss and develop the discourse on NBI in a friendly and open atmosphere in order to create a wider community awareness through mutual respect.

Underlying the workshop and in some ways similar to a group therapy, the process was healing tensions in order to allay suspicion and build partnerships between local and national communities, and official experts. The participants agreed that the workshop's informal style should also guarantee that it was a safe place to express freely their ideas and concerns. The organizers made clear that the meeting aimed at engaging in the discourse itself, the NBI development issues being discussed at a later stage. It was agreed that no record of individual

statement would be noted in the proceedings that would be circulated for comments before publication.

Before examining the structure, function and costs of the NBI, the organizers explained that the *Discourse* could work as a twin process, external and independent of the NBI undertaken by the riparian governmental bodies, but central to the NBI process and expressing the voice of civil society as a whole, the Nile *rafiki* or Nile community. The Discourse was needed to:

- Go beyond differences that once divided people, and explore the mutual benefits of a Basin **shared cooperation**.
- Identify from this early stage the strategic alliances aimed at promoting **social equity** and mobilize stakeholders.
- Move from reactive attitudes to plans already made to proactive conceptualization of development alternatives.
- Favour **mutual understanding and respect** by 'seeing through the eyes of others', especially regarding various national perspectives.
- Ensure **respect for cultural values** of the populations living in the Basin, and that its development be multifaceted in order to address such crucial issues as poverty, environmental security, conflict resolution, etc.
- Promote the understanding of the Nile as a shared resource, thus drawing concerned participants to think about their region as a bioregion – namely a land and water territory whose limits are defined not by political boundaries, but by the geographical features of human communities and ecosystems.

A bioregion should be defined in terms which are both large enough and small enough. It must include the human communities involved in the use, understanding and management of biological resources, maintain the integrity of the biological communities, habitats and ecosystems, support vast ecological processes such as water flow, nutrient and waste cycling, and migration. It must be small enough for local residents to consider it as their home, to maintain their cultural identity and as such, have the right to decide upon their own development. In large and complex systems such as the Nile Basin with varying political systems, broad cultural diversity, a wide range of interdependent ecosystems, complex hydrology, fragile economies and enormous potential, activity in one separate field may have unforeseen and profound consequences in a range of other areas.

Shaping of a Preferred Future

Communication was consequently at the forefront of discussions taking place during the workshop. The use of Internet reduces the costs of access to information and consequently to education and knowledge that help to choose best practice and technologies for intersectoral activities, and thus ensure good governance. Yet, modern communication is not accessible to the most remote and poorest communities in the Nile Basin. Another difficult priority is how to ensure that the poorest be directly represented. **Civil participation** in the NBI process relies on access to resources, information being a crucial resource. It was agreed that establishing a clearing house for information on the Nile Basin, to gather and disseminate information, was a priority need. It would ensure that the *Discourse* can actually complement the intergovernmental *Nile Basin Initiative* in exploring and promoting substantive and continuous debate on alternatives, and look at various options and scenarios.

A relevant hydrological information flow would also ensure **transparency** and support NGOs' work in the Basin, for example in making reference resources available, technical (hydrological, biological, on development, law, policy and baseline data in advance of proposals), as well as political (proposals and plans).

Another crucial issue was raised: the need for easy messages conveyed in at least the five most widespread languages used in the region in order to ensure **equity in access to information** between the Nile riparian populations, and respect for cultural diversity. Easing access to information and improving communication by a two-way flow between all stakeholders and official bodies would make people central to decision. As stressed in the *Universal Declaration on Democracy*, "Democracy is founded on the right of everyone to take part in the management of public affairs" (Article 11).[38]

Participants expressed the need to establish an institutional identity for the *Discourse*. With a view to strengthening all stakeholders' inclusiveness and accountability, they proposed drawing up Terms of Reference, a Memorandum or Charter.[39] One group proposed that the *Discourse* be defined as "an ongoing process or platform for widespread civil society debate on the programmes envisioned by NBI and/or issues

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[38] Declaration adopted without a vote (China expressed reservations on the text) by the Inter-Parliamentary Council at its 161st session, Cairo, 16 September 1997.

[39] Since the *Magna Carta* (a peace treaty signed by British King John in 1215 with citizens, and the first formal document guaranteeing basic freedoms) and like the *UN Charter* (San Francisco, 1945), the word 'charter' is commonly accepted to define obligations between one or several governments and civil society, guarantees a number of rights, redresses grievances of owners and tenants of land or territory, implies the need to consult the nation's higher authority or council. A Charter aims at preventing injustice and controlling administrative bodies' behaviour.

related to Nile Basin development that contributed to a shared vision for sustainable economic development". Its development should be dynamic, flexible and establish links with grass-roots actors to explain the potential consequences of plans, as well as who should promote alternatives, provide relevant practical and technical assistance, particularly in sensitive issues such as resettlement, sustainable use of natural resources and the assessment of environmental impact.

Various cooperative activities were proposed by the *Discourse* members, such as to identify concerned people who did not attend the workshop; promote the concept of *Nile Rafiki*; revise the Nile Basin Atlas and add social data; ensure that more information was available to develop and share a toolbox of materials and resources, including emphasis on printed media and broadcasting programmes to counterpoise the absence of electronic media in some parts of the Nile Basin, and promote champions with regional focus – some kind of 'positive contamination' of excellence.

In conclusion, it was clear that information and communication should be the key to ensuring interaction between the *Nile Basin Initiative* and civil society, and that the timing and the agenda of their activities should be attuned and synchronized.

The *Nile Basin Initiative* was launched by the Council of Ministers (Nile-COM) of Water Affairs of the Nile Basin States. Its Secretariat was established in TECCONILE's former office facilities in Entebbe, Uganda. Recognition of the *Civil Society Discourse* (CSD) and anchoring it at national level facilitated its establishment at the NBI Secretariat offices in Entebbe, where the CSD Interim Steering Committee met in December 2002 and launched its work programme.

The CSD Interim Steering Committee (ISC) agreed to proceed with the establishment of a National Civil Society Forum in each of the countries of the Nile Basin by June 2003, after identification of concerned civil society sectors and individuals from all sectors: local groups (farmers, fishermen / women, etc.), journalists, academics, NGOs, private sector, faith groups, local government, etc., thus covering a wide range of issues such as development, poverty, environment, peace and security, water, agriculture, human rights, etc. Headed by the slogan ***Providing a voice to the voiceless from the roots of the Nile Basin***, the process is governed by Terms of Reference allowing each country forum to have the same legitimacy. Limited funds are available for the exercise in each country.

The Nile Basin Discourse Work-plan 2003 Project Goal promotes dialogue – including through its forum on an interactive website[40] –

[40] http://www.nilediscourse.org

aimed at establishing an independent Nile Basin Civil Society Discourse Desk within the Nile River Basin (Civil Society). Its work plan, planned in detail and thus ensuring transparency, is an exemplary model. It might be summarized as follows:

- Outcome 1: Civil Society Discourse Desk established and effectively and efficiently operating:

From October 2002 to December 2003, establishment of the Nile Basin Discourse (NBD) Facility Office; consultations initiated with the Nile Basin Initiative Secretariat (Nile-SEC); launching of the communication process to create awareness on the Discourse through publications, brochures, etc.

- Outcome 2: Working relationship established with Nile-SEC on the Nile Basin Initiative:

From January 2003 to December 2003, design and implementation of the Discourse programme of action, including the 1st Meeting of the General Assembly; quarterly reports and reviews of progress of ND activities. A form to be filled by ISC members was designed for the Discourse participants identified. Development of draft guidelines for National Discourse Forums, and of National Proposals in each country. A National Discourse Forums (NDF) Plan was sent in a proposal format to ISC members. From February 2003, initiation of national consultations processes in each country. In March 2003, production of a list of potential National Discourse Participants to the 1st consultative workshop organized in each country in April. In June, organization of NSC elections to enable the establishment of NDFs structure. Finalized Programme report in August. From February to December 2003, efforts focused on creating an awareness of NDFs.

- Outcome 3: Enhanced communications and information flows between interested and affected parties on pertinent issues relevant to the Nile Basin:

During the first quarter 2003, relevant information on NBI regularly disseminated, thus allowing to initiate engagement between NBI and the Discourse, while maintaining continuous action and participation in NBI meetings, projects, planning and work plan.

- Outcome 4: National, Regional and International Civil Society organizations constructively engaged in discourse activities and dialogue:

In February 2003, a draft research agenda was ready to enhance capacities on NGOs and other stakeholders (civil society organizations) and engage in dialogue. From October 2003, regular meetings and localized events were held, and participation in international meetings ensured.

Towards a culture of peace

Through **consensus, transparency** and **inclusiveness**, the *Civil Society Discourse* is expected to ensure that action is sensitive to the political context and to the existence of grass-roots needs and interests, hence contributing to a culture of peace and equity.

The challenge is to create an environment where parties are able to share their perspectives and hear the views of others. This can be achieved provided that everyone has a part in the action and understands that there is no single truth in which all the aspirations of all parties come together: there are many truths. The solution lies in accepting compromises for a future which is inevitably interlinked.

The *Civil Society Discourse* is an open-ended process and has no

foregone conclusions. This collective exercise through which opinions are modified shows that perspectives can be broadened in difficult conditions. In the Nile Basin, there are many different and divergent interests, both from within and from outside the Basin. The *Discourse* work in progress illustrates that louder voices do not imply greater legitimacy. As is the case with many innovations, it is a delicate process to be handled with care. It already shows an encouraging example of how ethical values can lead to more **equity, peace** and therefore to sustainable development.