

# Global Network of Water Anthropology for Local Action





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The Loire River Valley, France, is inscribed in the UNESCO World Heritage List.

The NETWA Project was proposed by the Division of Water Sciences, UNESCO, to the regional and national representatives of the International Hydrological Programme (IHP) in April 2002 in order to facilitate the implementation of IHP-VI, Themes 4 and 5, with reference to IHP/IC-XV Summary Report, Article 85.

NETWA is a global computerized network of anthropologists (researchers and institutions) dedicated to collect resources related to water, including water engineering and policy, in order to reach the Millennium Development Goals.

It promotes IHP's paradigm shift toward the integration of the cultural dimension of water, as well as UNESCO's policy in education, human rights, ethics and governance promoting best practice. It is designed to encourage interaction between anthropologists working on water issues and water professionals such as hydrologists, geologists, engineers, policy-makers, etc. The concept of the NETWA Project was presented during the Third World Water Forum, Kyoto, Japan, March 2003, during the Session on "Water and Cultural Diversity". It was also successfully presented to water professionals, delegates of various international NGOs, academics, diplomats and policy-makers during international events such as the:

- International Colloquium on "The International Year of Freshwater 2003: Cultural Diversity and International Solidarity" organized by the Federal Direction of Cooperation and Development, Bern, and the University of Applied Sciences, Basel, in Geneva, Switzerland, November 2003.
- International Colloquium on "Water Economy and Sustainable Development: What Governance?" organized by the Institute for Energy and Environment of the Francophonie, Quebec, Canada, in Ouagadougou, Burkina Faso, April 2004.
- Sixth International "Water Festival" organized by the Municipality of Cannes, France, June 2004.
- "Anthropologists' International Tournament" organized by the department of Anthropology, Università degli Studi, Genoa, Italy, June 2004.
- International Colloquium "Sacred and Healing Waters in Sardinia and Mediterranean", October 2004, Sardara, Sardinia.
- European Conference on "Water and Health in the Mediterranean: sharing knowledge, human and medical sciences", organized by the Euro-Mediterranean University Thetys and the University of Marseilles, the Italian and Spanish Governments and the Local Communities of Liguria, the Balearic Islands and Catalonia, in Marseilles, France, October 2004.



**The International Hydrological Programme, UNESCO, is pleased to announce the creation of “NETWA”, a network of Water Anthropology. This initiative offers a global link for sharing information, and stimulating communication between water professionals and water users.**

## **NETWA, a two-way communication**

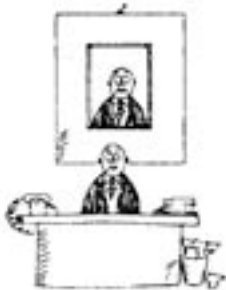
Aimed at improving local conditions, NETWA provides assistance in capacity building for water professionals and users in order to develop their potential to collect, process, analyse, disseminate and effectively use information. In particular, it addresses the special needs of the least developed countries. It recognises that traditions, wisdom and ethical values based on ancestral respect of Nature and inter-generational solidarity can also inspire industrialized countries.

- Decision-making for the practical applications of development programmes requires a deep awareness of the cultural, technological and human resources of each area. Together with freedom, equality, solidarity, respect for Nature and shared responsibility, *tolerance* is included in the fundamental values stressed in the **United Nations Millennium Declaration**: “Human beings must respect one other, in all their diversity of belief, culture and language. Differences within and between societies should be neither feared nor repressed, but cherished as a precious asset of humanity. A culture of peace and dialogue among all civilizations should be actively promoted.”

- Field experience has proved that community actions create the motivation, enthusiasm, awareness and collective responsibility necessary to stimulate the human energies needed to reach the **Millennium Development Goals** (MDGs):

*Eradicating extreme poverty and hunger, achieving universal primary education, promoting gender equality and women’s empowerment, reducing child mortality, improving maternal health, combating HIV/AIDS, malaria and other diseases, ensuring environmental sustainability, developing a global partnership for development...*

Decision-making for the practical applications of development programmes requires a deep awareness of the local living conditions.





# The network of water anthropology

**Reaching the Millennium Development Goals depends on water availability for billions of people at risk, locked in a cycle of poverty and disease.**

**As many as 2.6 billion people (half the developing world) lack even a simple “improved” latrine. One person in six (more than one billion people) still has no choice but to use potentially harmful sources of water.**

• **Change is feasible:** The NETWA website addresses questions raised by the wide diversity from one country to another, one region to another in the types of water needs, training, the desire to change and to obtain more efficient technical knowledge, as well as to learn about the various water-related activities carried out by both professionals and users.

• **Adapting, adopting and updating:** Adequate tools in this context include adequate concepts, methods and words. Sometimes, one cannot see the forest for the trees. The holistic approach of anthropology and its practice of “participant observation” can bridge gaps that may emerge when a given technology, introduced in an area outside the culture and place where it originated, proves unsuitable for local **adaptation** and thus **adoption**. When supported by an anthropological approach, traditional – and even very ancient – knowledge and methods can be **updated** in the light of contemporary science without disturbing the social fabric or the local cultural and religious values.

• **Harmonizing the macro/micro approaches:** NETWA is organized in 9 basic modules to facilitate a comprehensive understanding of human water-related needs:

- Basic anthropological methods, including a glossary for easy reference;
- Hydrological and cultural areas;
- International conventions and documents on cultural diversity;
- Water and cosmology;
- Gender issues;
- Traditional and appropriate technologies;
- Recommendations for water professionals;
- General and regional bibliographies
- Directory, news, and contacts.



# Enhancing global partnerships and local actions

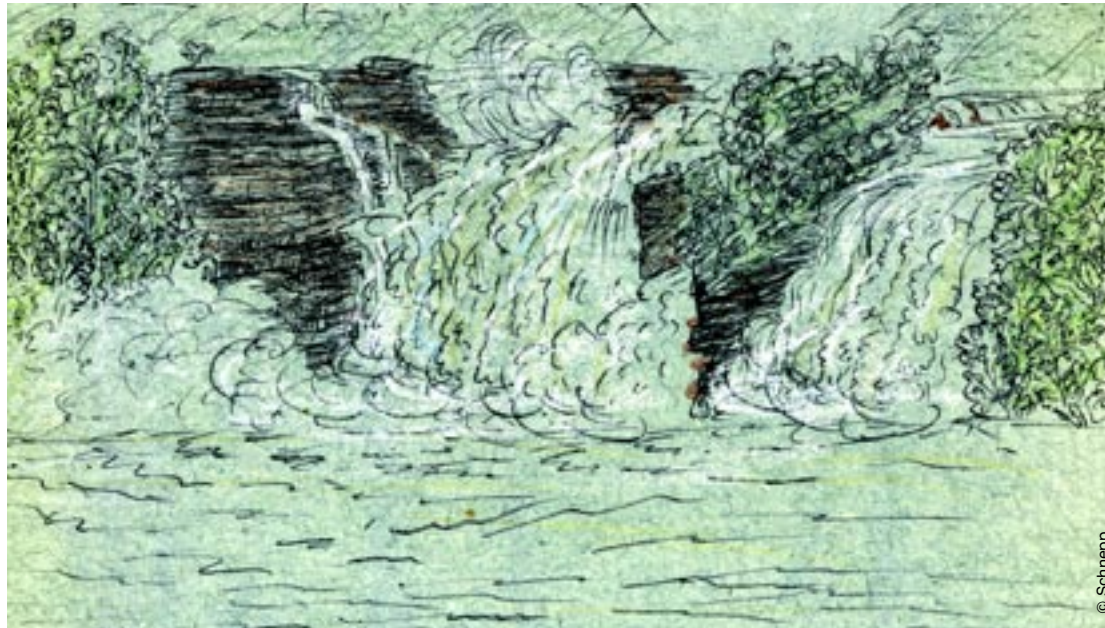
**“The world water crisis is mainly a crisis of water governance. Water governance refers to the range of political, social, economic and administrative systems that are in place to regulate the development and management of water resources and provision of water services at different levels of society.”**

– Dialogue on Effective  
Water Governance, UNDP,  
Global Water Partnership,  
ICLEI, 2002.

- **Global partnership for development:** The NETWA data is presented region by region in order to help water professionals to find locally relevant information, and stimulate the recognition and respect of local biocultural diversity. Comparison among these case studies avoids the inefficient duplication that can result in high costs in both human energy and financial and material resources.

- **Cross-border co-operation and peace:** NETWA proposes the cultural and ecological approach that is necessary to encourage and sustain cross-border co-operation. The distribution of water between countries that share rivers and lakes has resulted in many conflicts throughout history. It is still a controversial issue, especially when considering the current global climate change. Most water resources are internationally shared rivers, and access to water is critical for survival. Yet, as J. Delapenna argues: “Water is simply too critical a resource to fight over, and a river basin (...), hydrologically forms a single unit best managed without regard to international borders”<sup>\*</sup>.

- **Equity:** Cultural relativism, a fundamental concept in the anthropological approach, promotes the respect for cultural diversity and, thus, equity among communities. Equity is a key to sustainable development and harmony between all members of a community, including children, handicapped and elderly people.



Venezuela,  
Salto Golondrina water falls.

<sup>\*</sup> DELAPENNA, J. *Conflict and Co-operation related to International Resources: Historical Perspectives*. Technical Documents in Hydrology, IHP-IV, No 62, Paris, UNESCO, 2001.

# Anthropological resources for water professionals

**Anthropology offers a practical approach to examine, explain and make the best use of both cultural diversity and our unity as members of the same species, sharing a common nature and destiny.**

Based on a comprehensive understanding of human essential needs (tangible and intangible) and on “participant observation” over long periods of time in the field, anthropology can help communities and professionals meet the imperative need to harmonize modern engineering as well as management and supply of water resources, all with the cultural dimension of this natural resource.

- **You said “culture”?** The meaning of this word is not limited to the literary and artistic achievements of the “elite” of societies. It involves the social and spiritual dimensions of human life. It also designates the learned patterns of behaviour, thought, values and knowledge – in short, the way of life – transmitted from generation to generation and shared by the members of a community. The term “culture” includes knowledge, technology, beliefs, art, morals, laws, customs, as well as other capabilities and customs or habits acquired by each human being as a member of society.

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Culture designates the learned patterns of behaviour, thought, adaptation to a specific environment. Water supply in Ouagadougou, Burkina Faso.

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• **Cultural diversity as a factor in development:** Given their extensive training in the field as well as the practical experience they have gained from various cultures and languages, anthropologists find normal that people can have different perspectives on natural phenomena such as water. Their capacity to understand other peoples from various angles and in different lights enables them to bridge various cultures. The holistic anthropological approach is based on the universal characteristics of the human species, when one regards the latter as physical and psychological unit. This approach enables anthropologists to build a bridge between the modern scientific worldview to traditional cosmologies that enable humans to feel a part of the universe. Based on cultural relativism, this dynamic approach – with its intercultural dialogue – can help water professionals meet local needs more easily and find more adequate solutions addressing social, economic, technological and public health problems related to water issues – and thus improve the local quality of life.



Dishwashing in a street  
of Ouagadougou,  
Burkina Faso.

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• **From cultural diversity to cultural pluralism:** Following the recommendation in Article 2 of UNESCO's *Universal Declaration on Cultural Diversity*, the NETWA website is also designed to add policy expression to the reality of cultural diversity, as a means to achieve a more satisfactory intellectual, emotional, moral and spiritual existence, and to encourage the flourishing of creative capacities that sustain public life.

• **A better understanding of the relationship of humans with water** calls for a "water anthropology", that studies how various people think about water, how they use it in their homes and outside – whether in irrigated fields, deserts, crowded suburbs or in the wilderness where they fish in lakes and rivers, collect medicinal plants, etc. The reverence for water, prevalent among indigenous people and traditional farmers past and present, may stimulate the emergence of new ways to conceptualize water engineering and management.



# Highlighting cultural backgrounds “humanizes” modern technology

**The basic principle of cultural anthropology is that all cultural systems are inherently equal in value. Water professionals are invited to explore the knowledge, technology, beliefs, arts, morals, law, customs, capabilities and habits of local communities... to “humanize” modern technology.**



The ancient goddess Hathor, born from primeval sky-waters, symbolizes fecundity and fertility, like the creative / regenerative processes stimulated by the Nile waters.

- **Anthropological linguistics** is possibly far from the usual concerns of an engineer. Yet, when applied to the local *toponymy* (the study of place names), it becomes an efficient tool to help acquire a better understanding of the evolution of local and regional water resources. Today, toponymy is used not only to know where a long forgotten or destroyed monument was located, but it can also help to improve water catchment and land use\*. Place names constitute a treasure chest wherein is stored the traditional community’s memory, which reveals the people’s appreciation of and attachment to their traditional water resources. In a symbolic way, they convey ethical values and wisdom based on ancient or traditional water-use practices, such as irrigation. Knowing the meaning of a place name in the local people’s own words can provide clues to the community’s environmental perception and what they hold as important. This understanding contributes to the defining of an ecosystems frontier, such as a water system.

- **The study of cosmologies and myths**, in their cultural contexts, helps understand why water cannot be owned, or passed on, for example through marriage where only the rights to water use can be thus transmitted. Life exists where there is exchange. Analogous to the chains of ecological interactions in Nature – where organisms interact with habitat’s environment, i.e. the physical features such as soil, water, minerals, etc. – culture is a system of symbols interacting with language, thought, norms reflected in cosmology, marriage, descent, succession, material things, and how people relate to natural resources – especially water, usually considered as a sacred source of fecundity and fertility. The beliefs – that humans are not separate from Nature and that the supernatural world is inhabited by souls, spirits and gods thought to be human-like in their motivations, feelings and interactions – should not be scorned, given that these beliefs convey norms, ethical values and even technological rules which act to prevent the waste of natural resources. In Cotonou, Benin, the Laboratory of Ecology has used the local respect for the god Avlekete to restore the mangrove and the water of lake Aheme, and successfully launched a development programme; better fishing conditions mean more protein is available to the community, and importantly the drastic reduction of infant and child mortality caused by malnutrition.

\* AFRICOVER, an FAO project, includes toponymy to develop in Africa the national and sub-regional capacities for the establishment, update and operational use of geographic reference, and land cover maps and geo-databases.





# Water and gender equity

**Gender equity is a basic requirement in order to improve water resources management. NETWA examines how the participation of women can be improved in various cultures. Because of their considerable knowledge about water – including its availability, quality and reliability, as well as restrictions and acceptable storage methods – women are often the best and most effective agents for change and for poverty alleviation.**



© WHO/P.Viro

Ethiopia, near Alem Kitmama.

Low participation of women is often due to their lack of self-confidence and skills in public participation. Even in industrialized countries, women are insufficiently represented in decision-making, from the design to the implementation of water systems. The NETWA section on Gender places emphasis on resources needed for women's education and training to ensure water security for their families, and towards the general benefit of their communities as a whole.

- **Practical examples:** NETWA provides women and water professionals with practical solutions illustrating how women, who are at the forefront of water problems, can enjoy a better lifestyle, to the general benefit of their whole community. The proposed field experiences incorporate gender perspectives in planning, negotiating, implementing and monitoring water resources management initiatives, as well as in the day-to-day work of development.

- **Raising the right questions leads to the right answers:** While responsibilities, burdens and insecurities are felt by women, benefits are often assumed to accrue to them. These assumptions are made by men who simply forget to ask themselves the right questions. NETWA gives examples of how women's involvement helps to find culturally adapted answers to crucial questions such as the following. Who does what, when and where? Who makes decisions? Who gets the benefits? Who controls them? Are water supply systems located where women would use them? Is the equipment designed for them and not only built for male statures? Are latrines suitably constructed for women?

- **Access to safe water and health:** Gender inequities and inequalities often give men an advantage in the economic, political, and educational arenas, but also with regard to health and health care whereas, throughout the world, women are generally the main providers of health care. Water carries a wide range of infective agents that can be deadly pathogens, either directly or serving as vectors. Sanitation equipment is not easily affordable where poverty prevails. It is sometimes not readily acceptable where local traditional habits and cultures are adaptations made throughout centuries to environmental conditions that, due to global climate change and/or the population growth, no longer are prevalent. Through success stories, the NETWA website illustrates how women's participation brings a positive change to traditions when the improvement of their health is involved. It shows how to involve men along with women in the prevention of diseases associated with water, as well as in matters of water quality, quantity, proximity and consumption, all of which benefit from improved water management.



# Hydrological and cultural areas

**NETWA is designed to share values, knowledge and resources that concern water. This type of communication facilitates conflict resolution by integrating the interplay among linguistic, cultural and biological diversity.**

Hydrological areas usually coincide with ancient cultural areas to eventually constitute what is referred to as a “bioregion” or an “ecoregion”. The importance of water for life support means that hydrological areas are very closely related to cultural areas. Since prehistory, humans have grouped themselves along waterways, rivers and lakes. Whole civilizations emerged alongside water, such as the great riparian cultures of the Nile, Tigris and Euphrates, Indus, and the Yangtze Rivers. Thus, recognizing the coincidence between hydrological regions and cultural areas can help improve water policies and management, especially now that the climate and ecological crises are becoming more and more acute.

- **You said “bioregion”?** Meaning a “life-place”, a bioregion is defined both by physical factors – such as watersheds, similar plant and animal ecosystems, related landforms (mountains, valleys, coastal zones etc.) – and by the unique human cultures that are sustained within these natural limits by the resource potential of the region. The constant interaction between Nature and the human species results in a permanent coevolution and thus transitory phenomena, both natural and cultural. Throughout history cultures meet, influence and inspire each other. The anthropological approach proposed by NETWA helps to combine cultural material with hydrological information in order to better understand what commonality may exist across modern political frontiers that cut through the old natural and cultural areas. The awareness of belonging to a bioregion gives the population a chance to value water as a shared resource.

- **The map is not the territory:** Interaction between traditions, gender issues and hydro-engineering is crucial to reach the Millennium Goals. In many countries, women take a crucial part in food crops and basic agricultural production. Still, too often implementers of irrigation projects do not take into account women’s contribution although they are the ones who best understand the territory. NETWA is a source of inspiring examples. For example, in Ecuador, at night indigenous women were reluctant to maintain the fields’ irrigation system that had been designed by experts in offices of the capital and only on the basis of aerial photos and hydro-geological expertise. The technical change proposed by women was far better adapted to their daily life in the highlands, and was finally accepted by the highest representative of the national water agency.

- **The challenge of space complexity:** NETWA proposes to integrate the complex interaction between hydrology and biodiversity, on the one hand, with linguistic and cultural diversity, on the other. Water management can benefit from a deeper awareness that cultural communities sharing the same environment have developed similar subsistence activities that combined can help stop the destruction of biocultural diversity, and stimulate the dialogue among water professionals, knowledgeable indigenous persons and all other stakeholders.



Hydrological areas are very closely related to cultural areas.

1. Sacred fountain, Kiomyzu-Dera Temple, Kyoto, Japan.
2. Door-knocker shaped as a water spirit of the Rhine River, Bonn, Germany.
3. Kwele mask, Gabon equatorial humid forest, used on the occasion of an important community event.

# Traditional and appropriate technologies

**Indigenous peoples have developed social ties that allow them to adjust according to the seasonal availability of resources. Through patient observation of the living Nature, they know the carrying capacity and the upper limit on production and population in a given environment under a given technology, without degrading their resource base. The use of indigenous technologies implies studying them in their own context, but also upgrading them whenever possible.**

- **From theory to the living reality:** The anthropological method allows water professionals to study indigenous technology while it is at work. Indigenous technologies range from very simple material lifestyles to extensive complex urban/rural systems such as the Aztec and Egyptian irrigation systems. Obtaining information – through interviews with the users on the various process steps, raw material and hardware used during the production process, or from the users' social status, beliefs, and expectations – helps to bring modern scientific knowledge into harmony with the capabilities and hopes of local communities.

Visual information stimulates the systems approach, and helps people bring modern hygiene into harmony with the capabilities and hopes of local communities.

- **Emphasis on visual information:** NETWA publishes surveys, examples illustrated by photos, drawings, draughts, blueprints etc., which is like adding peripherals to the verbal explanations that our left brain hemisphere processes only linearly. Visual information – so important to stimulate the systems approach that integrates both the analytic and the synthetic methods, encompassing holism and reductionism – ranges from simple technologies to protect water resources to the application of the spatial and spectral technologies (GIS) for cultural and natural resource planning, community planning and infrastructure, monitoring environmental change, managing urban sprawl, treaty and rights protections. Included is the integration of traditional ecological knowledge with the tribal decision-making process, as has been launched by the Conservation Program of the Environmental Systems Research Institute (ESRI), Toronto (Canada) for the First Nations of North America.

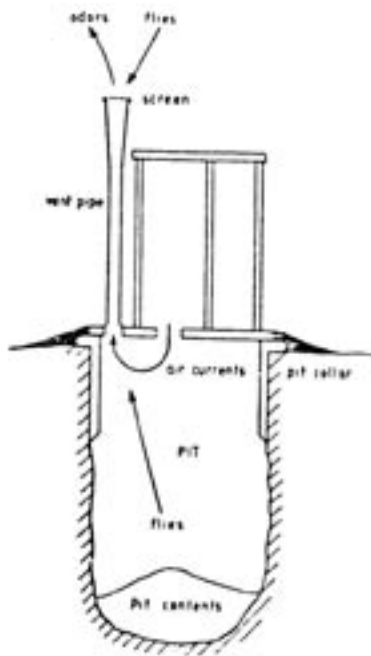


Illustration: WHO/E. de Loache

# International conventions and documents on cultural diversity

**To regulate the development of water resources and the provision of water service at all levels of society, legal mechanisms are necessary. A vital aspect of international law is to accord special attention to the delicate balance between cultural, environmental and development concerns.**

*Legal mechanisms exist to ensure the equal participation of communities, particularly indigenous peoples, in decision-making.*

• **Legal mechanisms** exist to ensure the equal participation of communities, particularly indigenous peoples and forest-dependent peoples, in decision-making. Indigenous peoples number about 300 to 500 million; they embody and nurture 80% of the world's cultural and biological diversity, and occupy 20% of the world's land surface. They live in almost all the countries on all the continents, and range from traditional hunter-gatherers and subsistence farmers to legal scholars. The NETWA website includes a specific section on International Conventions and Documents on Cultural Diversity. It presents the original reference texts that have an international recognition. The aim is to facilitate the work of water engineers, hydrologists, decision-makers, managers, and help the water users improve their awareness

of the need to protect and valorize local cultural heritage. At the global level, easy access to these documents is essential to educate and train younger generations (in schools and universities) who will later participate in and strengthen the contributions of developing countries in the field of international law on sustainable development.

• **Transboundary water-users cooperation:** Where citizens and NGOs in the same hydrological and cultural area are ill-informed about the problems facing their neighbouring countries (though they have the same problems), access to these legal international instruments is thus encouraged on an international legal basis. Although the international law has not had many direct starting-points for public participation, which is mainly dependent on the opportunities at the national level in one's own country, UNESCO and other international institutions or secretariats of the treaties have the responsibility, among other things, to make accessible and promote this type of information.

• **Prevention** is a first step towards respect for indigenous peoples' human rights and cultural diversity. This section of the NETWA website also publishes the list of United

Nations agencies, NGOs and principal websites devoted to issues affecting indigenous peoples, and indicates their specific activities. The latter range from economic and social development, culture, biodiversity and the environment, education, health, to human rights and the legal aspects of the preservation of water resources. This contributes to their development in the "Last Open Spaces".



Indigenous Declaration on Water, Kyoto, Third World Water Forum, March 2003.



# Governance and local culture: a dialogue between professionals and users

**Governance is based on shared values and on accepted moral standards that determine which consequences of water management are or not acceptable to the community. The better a water project integrates local values and habits, the more likely that the community will accept it. A water programme has a better chance to be effective when it is based on a multidisciplinary approach involving both water professionals and anthropologists.**



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Modern water governance integrates local values and habits.

- **A new awareness:** Not so long ago, development experts, planners, engineers and extension workers tended to neglect and even scorn ancestral traditions of small-scale rural communities. Local traditions were referred to in negative terms, considered as mere superstitions lingering from a “primitive past” and viewed as obstacles to development. Today, it is clear that reductionism has resulted both in the perturbation of local traditions related to the environment and in environmental degradation, including dramatic droughts due to water shortages. Far from being the least tragic are the floods and accompanying plagues, which affect primarily the poorest, sickest, oldest and youngest people.

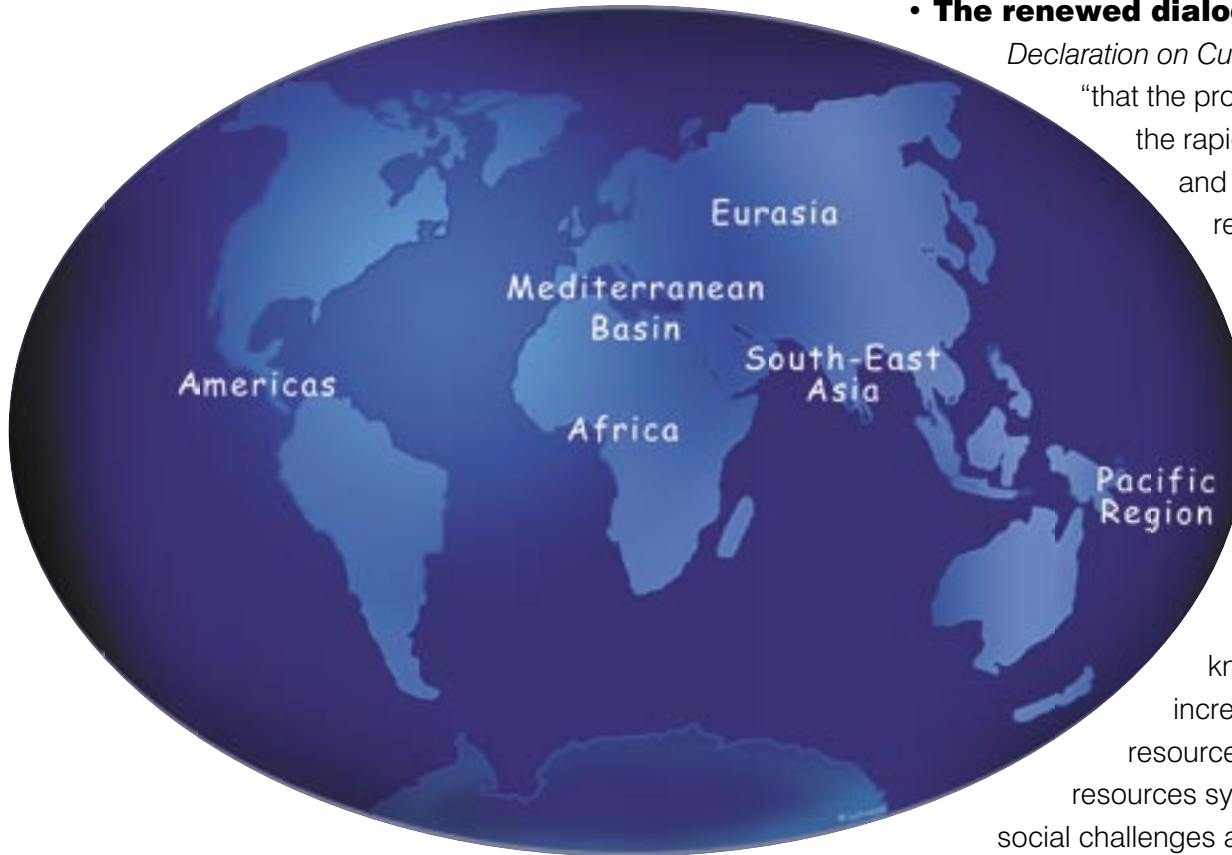
- **An in-depth understanding:** Anthropological methods help in the collection of cultural data and information related to water through: directly observable material items (such as tools or implements to collect water, cultivated and irrigated fields, water equipment in the houses, statues of divinities related to water etc.), individual behaviours and performances (meals, celebrations, fishing etc.) as well as beliefs and values. All these elements form a coherent system that allows the water professionals to obtain an in-depth understanding of the cultural context and the meanings assigned to water by the local population who are indeed the main stakeholders. Water is fundamental not only for human survival, but also for cultural and artistic inspiration and expression.

- **Sharing knowledge:** Applied anthropology aims at finding lifestyles that might counterbalance technological excess that leads to a lack of ecological and economic rationality over a long term. Techniques of traditional societies result from the patient and close observations of a local environment. Perhaps because water was apparently an inexhaustible resource, almost no research was made on the place it has occupied in the various cultural settings of humanity, nor on the important role it has always played in civilizations through time and space. It is hoped that the NETWA website will help fill this gap, and that it will receive abundant contributions from water professionals, anthropologists as well as from the many stakeholders themselves. Hopefully the **NET**work of **Water Anthropology** will heighten awareness concerning the fragility of indigenous cultures – one of UNESCO’s major concerns – and thus about the ethical values and principles sometimes wiped out by greed and the all too frequent desire for immediate handsome profits.

# Sharing resources to meet social challenges and interactions

**Electronic networks involve people from every possible level, allowing them to quickly select the information they need; and the information is available in a cross-disciplinary manner. The exchange of such information stimulates human interaction and the way management is conceived to integrate communities' participation.**

- **The renewed dialogue:** As stressed in UNESCO's *Universal Declaration on Cultural Diversity*, the time is ripe to consider "that the process of globalization, facilitated by the rapid development of new information and communication technologies, though representing a challenge for cultural diversity, creates the conditions for renewed dialogue among cultures and civilizations".
- **The International Hydrological Programme (IHP)** is UNESCO's intergovernmental scientific co-operative programme in water resources. It is a vector through which Member States can upgrade their knowledge of the water cycle and thereby increase their capacity to better manage water resources. IHP strives to minimize the risks to water resources systems, while taking fully into account the social challenges and interactions and developing appropriate approaches for sound water management.



.../...

• **Emphasis on training and education** means involving people from every possible level, as promptly as possible, to cope with vulnerable environments and the expected challenges from changing climate and environmental conditions. Water and ecological systems at risk raise challenges that can be more efficiently met when adequate knowledge is rapidly accessible. Best practice in water management involves some research at field level with both local workers and stakeholders. The NETWA website encourages interactions between water professionals and users, and thus includes resources such as recommendations that ease the work of water professionals when they engage in fieldwork. In addition, the NETWA website includes:

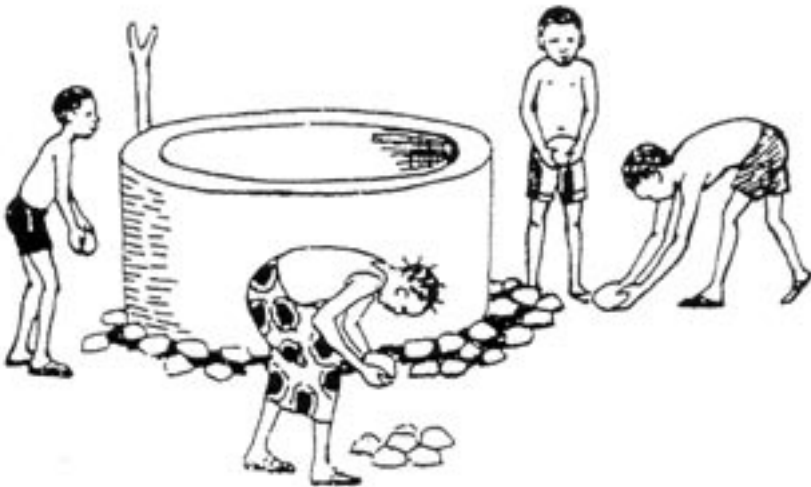
*"Filthy water cannot be washed"*

African proverb.

- various directories that facilitate communication with institutions, NGOs and centres involved in water management, indigenous peoples, and anthropology;
- news and events related to water;
- scholarships aimed at improving the skills and experience of students preparing PhD diplomas in cultural areas where water projects are being developed;
- funding opportunities made by international organizations, foundations, and companies interested in innovative ways of supporting water development and improving local capacities;

- job opportunities in order to help water professionals to find and use the services of anthropologists; and

- recommendations that can help water professionals to familiarize themselves with a local community's culture, the ways in which people view their relation with water, to define aims and goals, and finally to provide managers with help and advice – when constraints hamper their progress in seeking the collaboration of an anthropologist.



Illustrations: WHO/E. de Loache

**NETWA is a database established within the framework of  
the International Hydrological Programme.**

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