

# WATER GOVERNANCE IN A CULTURAL CONTEXT

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■ A few years ago we (Lida Schelwald and Linda Reijerkerk) decided to explore the relationship between water and culture world-wide. It proved to be a unique experience. We travelled across the continents and talked to many people. From ministers, engineers and scientists to local people, thirsty for clean water or literally standing in the water as their home was flooded. Some were desperate, others hopeful, but most of them were very open and willing to share their feelings and stories. Many left quite a deep impression and made us realise that a joint effort is needed to make water management more sustainable, thereby taking into account cultural factors. We laid down the findings of our cultural water journey in a book *“Water, a way of life”*<sup>1</sup>.

■ In this article we will touch upon the intricate relationship between water and culture, with a special focus on water governance. The article starts with a definition of culture, followed by examples of how water can be a source of life, of inspiration, of power, and also a source of conflict or cooperation. We will also give some suggestions to water professionals working abroad on how to take the cultural context into account as an important element for water governance and bridge cultural gaps.

## Water and culture

What exactly is culture? There are many definitions of culture. In anthropology, culture is often referred to as *“the system of shared beliefs, values, behaviour and symbols that the members of society use to cope with their world and with one another, and that are transmitted from generation to generation through learning”*.

In short, it is the way we think, feel and act within the boundaries of what the social context determines as acceptable. Decisions regarding water governance in any country are often made on the basis of the dominant cultural values in that society. The same applies to the acceptance of solutions.

## VALUES AND BELIEFS; THE PRICE OF WATER

According to their cultural and religious beliefs, many cultures adhere to the principle that water use should be free of charge. In most Muslim societies, water is considered “a gift of God”, one that shouldn’t be sold or bought. This widespread notion, which is encountered in Islamic countries and many traditional cultures, makes it difficult to convince people to pay for water supply services delivered. To deal with this, a distinction is often made between the water itself and the services delivered for transport and treatment, for which payment is acceptable. Different tariff systems may also be applied to water for religious purposes and for domestic or commercial uses.

Understanding and taking into account the cultural context is necessary in finding sustainable solutions for water problems. In order to understand the values and beliefs of a culture, we must get to the heart or core of it, which is by no means simple. Cultural values and beliefs are usually deeply rooted. The way in which cultures manifest themselves is made tangible through:

- Values and beliefs;
- Traditions, rituals and practices; and
- Symbols and artefacts.

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*Te watra e kiri yu trutru, na watra wawan kan meki yu firi bun  
 ‘Real thirst can only be quenched by water’,  
 or ‘Each problem requires its own approach’.  
 Surinam Odo*

### Water: a source of life

Water and culture are strongly interlinked. Water is a vital source of life, and culture greatly determines a person’s way of life. From the very beginning of our human history, people understood the advantage of settling themselves close to bodies of water. Wherever people settled they adapted themselves to their distinct environment, whether it was a desert, a mountainous area or a delta area.

#### THE RIGHT TO BE DIFFERENT

In traditional mountain communities a strong sense of the need for interdependence to survive the harsh climate has led to distinct cultural traits, such as a collectivistic society and living in a harmonious relationship with one another. In the Andes mountains water is available for the use of the communities. It is not up to individuals, corporations or the state to buy or sell it, to take or give it away. The right to use the water can only be earned by taking responsibility for a fair and sustainable distribution. By contributing to the design, the construction and organization of the irrigation system, the users create water rights. *Ref 2*

Especially rivers created the right conditions for great civilizations to emerge. The Nile fulfilled this role for the Egyptians, and the Mesopotamians thanked their highly civilized society to the Euphrates and Tigris, drawing water from these mighty rivers to irrigate their land. Other examples are the Indus in South Asia and the Yangtze River in China. Yet, scarcity of

water during extended periods of drought along with poor governance brought down these once powerful societies.

Silent remnants of the glorious past of these civilizations and their sophisticated water management systems can still be found in these areas. Some traditional systems are currently being revived.

The Minister of Water of Yemen told us about the long-standing tradition of sustainable water management in his country. He was worried about the fact that many of the old systems have been abandoned and replaced by modern technologies, such as large-scale extraction of groundwater. His message was that *in order to regain a sustainable water management, we should try to build further on what has worked successfully in the past.*

We also noticed that solutions that are developed and maintained by the local people themselves stand the best chance of long-term success as it is the people’s commitment which is the motor for sustainability. Like a knowledgeable lady in South-Africa put it: “*Where people take responsibility, positive things start to happen*”. Even in the slums, where governments can’t cope with the rapid pace of urbanization and provide adequate sanitation and water supply, we saw positive examples of people organizing themselves to realise and maintain their own water supply and sanitation facilities. But people also work together to protect themselves against floods, like in the coastal city of Semarang, where thanks to large-scale groundwater extraction, soil subsidence is about 15 cm per year. Here, the homes



#### REVIVAL OF OLD PRACTICES

Many of the traditional Karezor Qanat systems, found in arid countries like Afghanistan and Pakistan, are presently being restored to use. These ancient underground irrigation channels bring water from the mountains to the villages, thereby overcoming the problems of evaporation losses. They are owned and operated by the local community.

## Water has an important social function in Surinam



of the residents of a poor community are flooded everyday during the rainy seasons. Plans have been made by Dutch water professionals to develop a polder with dikes and pumps to protect the area from flooding. A Water Board, after “Dutch design”, in which the villagers actively participate, is already in place. Water professionals can learn from the ways that

cultures around the world have adapted themselves to living with water in different environments. Traditional societies can teach us how to ensure ecosystem resilience and live in a harmonious relationship with the natural environment. Wise water resource management, including the re-use of water, is becoming more common these days in many countries.

## SURVIVING IN THE JUNGLE

In the upstream regions of the Surinam River many so-called ‘Maroon’ communities inhabit the river banks. They are the descendants of former West African slaves who fled the inhumane working conditions at the plantations and used the river to escape. As almost eighty percent of Surinam consists of inaccessible jungle land, settling themselves close to the rivers was the Maroons only chance of survival. Local Indians, living further inland and deeper in the forest near the creeks, taught the Maroons how to survive in the jungle and use the plants, trees, animals and water for their daily needs, thereby living in close harmony with nature. Most of these Maroon communities are still relatively untouched by modern influences, and they live a sustainable and authentic way of life. Their culture and use of water still bears a strong resemblance to Western African cultures. The people use the ‘living’ water from the river and creeks for drinking,

cooking, bathing and washing. Further downstream and coming closer to the city of Paramaribo, the Maroon communities have been influenced by the modern world. New forms of waste form a threat to the water quality and the precious jungle ecosystem. Cola in plastic bottles, diesel containers for the generators, and other modern joys have found their way to most of the riparian Maroon communities. People are used to throwing away any (degradable) waste products, such as nut shells, around them. This is not a problem as long as it is biodegradable organic matter. There is insufficient awareness, however, of the fact that plastics and chemicals can harm the environment. Bauxite mining and gold mining with cyanide and mercury along the Surinam River form a particularly serious threat to the water quality and ecosystems of the rivers and creeks and the people dependent on these waters.





### WORLD RELIGIONS AND WATER

**Animism:** indigenous people honour and respect water as sacred and sustaining all life. Their traditional knowledge, laws and ways of life teach them to be responsible in caring for this sacred gift that connects all life.

**Hinduism:** to Hindu people all water is sacred, especially rivers. The Ganges River is considered the most sacred of these. Hindu belief holds that bathing in the river causes the forgiveness of sins and likewise that immersion of the ashes of the dead in the Ganges will send the departed soul to heaven.

**Buddhism:** for Buddhists water is said to symbolize purity, clarity and calmness. It is crucial to Buddhists to live in harmony with the environment.

**Judaism:** Water plays an important role in ritual cleansing practices. Already two thousand years ago, before the environment became a worldwide human concern, Judaism addressed local environmental issues. The Talmud perspective on the environment states that while we may use the world for our own needs, we may never irresponsibly damage or destroy the environment. More over: we cannot use what is no longer around.

**Christianity:** Water in Christianity is primarily associated with baptism. Environmental stewardship, or the responsibility to take good care of resources, including water, is an overarching and essential part of Christianity.

**Islam:** Water is life and water is a gift from God; as such water itself should not be sold or bought. There is also a prohibition on the monopolization, spillage and pollution of water. Islam is also familiar with the concept of environmental stewardship.

**Taoism:** “Be still like a mountain and flow like a great river”; In Taoist philosophy, water appears as the essence of nature and a model for human conduct.

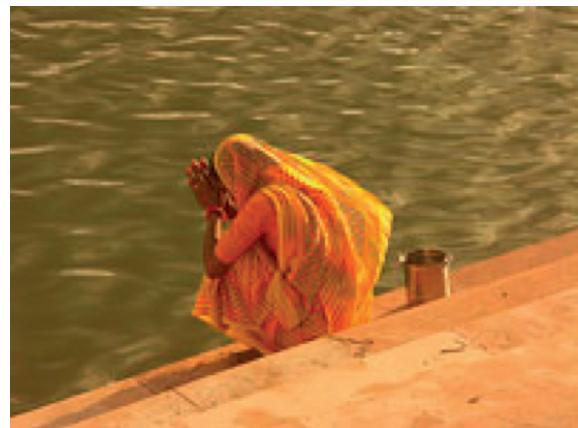
**Baha’i** view on water management reflects the Baha’is notion of unity between all people and the interconnectedness of all things;

*The wise management of all the natural resources of the planet, including water, will require a global approach, since water is not a respecter of national boundaries. The use, sharing, protection and management of water need to be governed by spiritual principles of justice and equity and the fundamental concept of moderation. Decisions on water need to be taken through processes of consultation involving all those concerned or affected (the Bahai’s perspective on water, Klingenthal Symposium on Water, France, 1997).*

### Water: a source of inspiration

As one of the crucial life-sustaining elements, it is not surprising that water has been a source of inspiration to the major world religions. One common thread running through all of these is a reverence for water.

Paradoxically enough, despite the deep respect for water and its prominent place in cultural and religious beliefs, in everyday life water is often taken for granted, polluted, spilled and fought over. So water wisdom does not always result in wise water governance. Take for instance Hinduism:



According to Indian myths, the Ganges flowed from the heavens and purified the people of India who touched her. Traditionally, the rivers of India have always been considered pure. Modern industrial contaminants and human waste, however, have seriously polluted the rivers. Nonetheless, Ganges water still plays an important role in India’s ritual life. One such ritual is the morning cleansing with river water, being a basic obligation for Hindu people. The famous city of Varanasi, situated along the banks of the Ganges, is an important place of worship for Hindu people as well as a cremation ground. Western visitors, witnessing the daily activities in the Ganges, are usually appalled when they see people using the water to bathe or brush their teeth while at the same time noticing the remains of dead corpses floating past. Religious traditions obviously prevail over what

would generally be considered healthy practice. This trend could be reversed when Hindu people become convinced that they would benefit from performing their rituals with clean water.

### Or an example from the Middle-East:

*Arriving at Dubai airport we were overwhelmed by the heat (45 degrees) and lack of humidity. In fact it's one of the driest places on earth, yet driving through the city we could see water everywhere. We soon discovered that in this region water is associated with wealth. The omnipresence of water is considered a sign of economic prosperity; the numerous fountains and water basins in public and private gardens are a sign of superior social status. Perhaps this is not so surprising as water used to be a scarce commodity in the desert and thus a precious and valued resource. This is in accordance with the religious and cultural notion that water is a gift of God, not to be spoiled or priced. After all, the Arabian peninsula in the Middle East is the cradle of three world religions; Judaism, Christianity and Islam, who all advocate the prudent use of water. Islam even knows a prohibition on the monopolization, spillage and pollution of water. There seems to be a paradox however, as nowadays Dubai has the highest water consumption (over 500 liters per person per day) in the world. A Middle East consultant explained that with the discovery and exploitation of the oil fields in the 1970s, the Middle East region became wealthier. Along with the introduction of new water technologies, like desalination, a culture of plenty became the new standard in many Middle East countries. Within one generation the cultural notion that water is a valuable resource, not to be spilled, disappeared....*

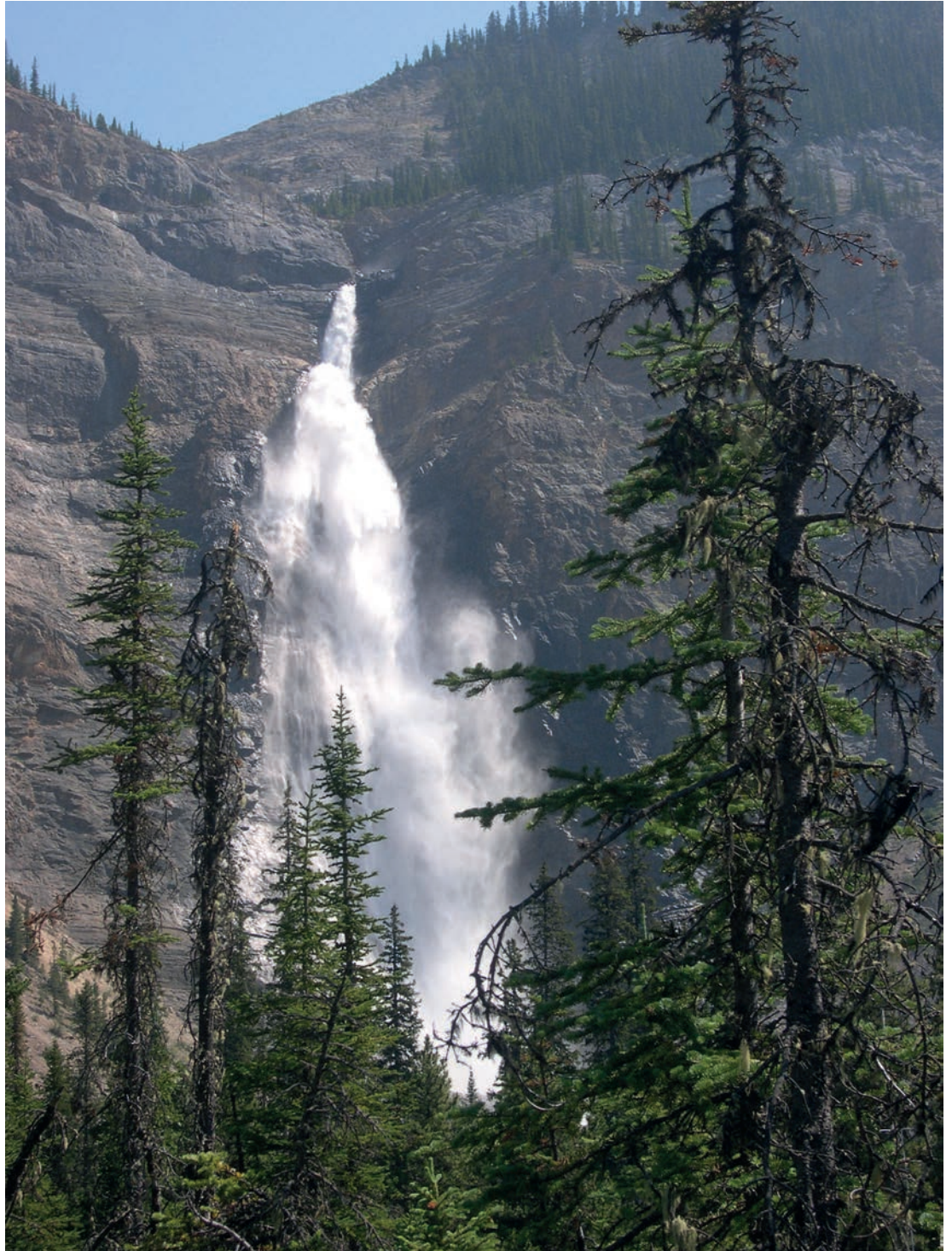
But the tide seems to be turning. Religion can no longer be used as an excuse to do nothing by claiming that mankind is entitled by God to exploit the earth or by proclaiming droughts or floods and their devastating effects as an 'act of God', for which mankind is not to

blame and can't do anything about. Like the governor of Greater Jakarta, who proclaimed after the big flood in 2008 that it was an 'act of God'; in other words he couldn't be held responsible. Who's in control? More-over, since water is regarded as a 'Gift of God' in many Islamic countries in the Middle East, the sense of urgency to use less water still seems to be lacking. Unless confronted with severe water stress, there is a general belief that God will provide water if needed. But this notion can also be used the other way round. The Director General of Water of Malaysia put it in a different context by saying:

*"The water that we receive from above is 'a Gift of God', rather than an 'Act of God' and therefore we shouldn't waste the water by letting it just disappear into the sea. If we retain the water that falls at times so abundantly in our country, it can be used in times of shortage. This helps to find a better balance between the wet season with too much water and the shortage of water during the dry season."*

Religions are currently rethinking their roles, so as to make better contributions to the environment. On the one hand there is the awareness that the wisdom in the ancient holy scripts reflects a reality that is fundamentally different from the one of today and doesn't necessarily meet the needs of today's societies. Who could have imagined 2000 years ago (or even 200 years ago for that matter) that so many years later mankind would be capable of destroying the ozone layer or polluting the Alaskan coastline? Yet, on the other hand, there are many keystones inherent to the religious beliefs themselves, one of them being the concept of environmental stewardship, that could be helpful. Also, the sustainable use of water depending on values such as fairness, equity and concern for others is a recurring concept in most world religions. Religion can thus become an alley to promote sustainable water practices, given the great reach religion has on many of the world's communities.





### **Water: a source of power**

Water is not only a source of hydropower. Throughout the ages water has been used to exert political power and gain control over people and over entire regions. The Roman Empire thanked its expansion greatly to the ability to cross natural boundaries such as the Rhine River and the Danube by building bridges over them. The desire to exert control over the waters has shaped cultures. It's not so much the excess but rather the scarcity of water that drove people to

build enormous engineering works to get access to water from different places. Irrigation in arid regions, requiring a constant effort, led to new social orders and division of power<sup>4</sup>. Where water control in the ancient desert world led to a major re-shaping of the environment through the creation of grand hydraulic works such as artificial dams and elaborate canal networks, political power came to rest in the hands of an elite ruling class. These required centralized managerial bureaucracies to operate. In the most

extreme form these “hydraulic societies” became despotic regimes, exerting absolute control over the lower classes. The famous scholar Karl Wittfogel claimed that the ancient hydraulic societies were the precursors of the modern socialist dictatorships as in Stalin’s Soviet Russia and Mao’s China.

In his book *Engineers of the soul*, author Frank Westerman describes how Soviet engineers in Stalin’s Soviet Russia worked on plans to reverse the flow of the five main Russian rivers from north to south in order to supply water to the deserts in the southern Soviet republics<sup>5</sup>. In the name of communism, the desert would flourish and Moscow would become a naval seaport. Stalin used the “engineers of the soul”- the country’s most famous writers - to support his plans. Together with the actual engineers they were supposed to realise the dream of the Communist Paradise by transforming the landscape with ambitious waterworks. The book addresses the intimate relationship between gigantic water works and totalitarian dictatorship, which is not only unique to Soviet Russia. It takes a whole army of forced labour, sometimes slaves, to realise these.

Nowadays, in many countries the link between water control and social power is as evident as ever. There has been a vast increase in gigantic hydropower dams and plants across the world, often displacing entire communities and ecosystems. An example is the Three Gorges Dam in China. At the same time, many countries are currently allowing rivers that were tamed to become artificial ‘rivers’ (canals) to once again meander freely. Water needs enough space or else it will free itself from its artificial boundaries and cause major floods.

Yet there is still an on-going struggle to exert power over water resources in countries where water is scarce. The Euphrates-Tigris region is such an example where shared water resources between countries cause international tensions. By extensively damming the rivers originating in their country, Turkey not only gets control over the water flowing through these major rivers but also gains more control over the downstream countries of Syria, Iran and Iraq. With water availability shrinking, particularly across the Middle East, Africa and Asia, there is an increased chance of water becoming a source of conflict...

### **Water: a source of conflict or cooperation?**

Water can be a source of cooperation as well as of conflict. Often, big rivers such as the Rhine, the Mekong and the Nile basin have been a source of cooperation. The Rhine Treaty was an important case in that respect and resulted in improved economic growth as ships could pass more easily which gave an impulse to trading. On an international level cooperation exists through water treaties that regulate economic activities on rivers and seas. This is institutionalised through treaties for regulation of international water distribution. Another example is ECOWAS, aimed at trans-boundary water management in African countries.

Since the adoption of the EU Water Framework Directive all countries of the European Union are using a river basin approach for water management. This requires co-operation within and between all upstream and downstream users and countries within a river basin. A good example is the Danube river basin, where ICDPR<sup>6</sup> acts as the co-ordination body for the development of a comprehensive management plan for the entire Danube river basin. This process involves experts from industry and agriculture, and representatives from environmental and consumer organisations as well as the local and national authorities. All river basin stakeholders have been invited to actively participate to shape the future of the Danube and its tributaries – for their common heritage.

#### **A SOURCE OF CONFLICT..**

The Marib Dam project in Yemen showed how water management can have adverse effects if cultural aspects are not taken into account and may result in conflict. In Marib, Yemen, the new irrigation system was technically perfect, but socially a disaster: the new design had changed the former water distribution system. As a result the once so rich sheiks were facing future poverty, or at least a decline in income, as they were now the last to receive water. From an egalitarian point of view, a more equally spread income distribution could have been a development goal. The problem was, that nobody had taken the social-economic and cultural consequences into account. E.g.: the value of equal distribution of water (in casu a legal norm) may be conflicting with social norms in a traditional hierarchical society. As a result, a social conflict started between different social groups in the area, leading to armed confrontations.



Water can also be a source of conflict, as shown in the case above, and in regional conflicts as in the Darfur area in Sudan: water scarcity and other possible resources are at the basis of this conflict. Water conflicts often arise at local or regional level. The question often arises: *Who owns the water?* Especially, when scarcity is involved, unclear water distribution rights may lead to conflicts. For the upcoming decades, scarcity in water can be foreseen, as well as too much water. Water cooperation will be more needed in the future than ever before. Therefore, policy makers and governments are becoming more interested in the positive effects of water mediation. In the Baviaanskloof, South Africa, users were confronted with land and water degradation. Projects focussing on changing the adverse effects took many years but used ineffective approaches. Through the use of mediation techniques an impulse was given to the project, resulting in commitment of farmers and other stakeholders to fight the adverse effects of degradation.

### **Water governance: no blueprint**

Water governance is one of the key issues for the next decade: what can we learn from the past or from other fields in order to face the future? Water governance implies issues such as capacity building, institutional and political setup, as well as financial, legal and social aspects. With respect to effective water governance, it is important that cultural aspects are also taken into account. Successes in one area do not automatically imply success in another area. One approach world-wide simply doesn't work and there is no blueprint for water governance. Cultural values define to a great extent how water will be seen, treated, used and managed. If such factors are not taken into account, water governance efforts may well be suboptimal. A substantial percentage of a total project budget should be earmarked for governance issues, some say even up to 20%. Research on social and cultural aspects, capacity building of local staff, community involvement and stakeholder processes, institutional structures which fit the social cultural dimensions of water management in a society also need to be

developed. The application of mediation techniques may prove useful for effective process management and may prevent future conflicts and promote water cooperation.

### **Role of governments**

A stable, enabling environment is an important success factor for sustainable water management<sup>7</sup>. The reality is often far from this ideal scenario. The realm of realities ranges from governments run by capable and honest people to incompetent and corrupt officials. In most countries water management is centrally led with central, politically determined budgets. In other countries this task has been delegated to decentralised local governments or water boards, with financial autonomy and a clear relationship between “interest, pay and say”, like in the Netherlands. Their authority may stretch from a small village to an entire river basin. Nevertheless this diversity, the main role of governments and water management authorities should be directed at enabling and facilitating sound and sustainable water management. This involves providing an adequate *legal* basis from national to local level and ensuring the necessary means and manpower to perform this task. It means investing into basic infrastructure for water safety and water treatment and supply. It also entails providing proper education to everyone and listening to the voice of the people and addressing their needs. These are all components of good governance, which in the context of water has been defined by the UN to include a participatory approach, transparency, equity and accountability, to mention just a few characteristics. The most important thing is a long-term orientation and the political will to improve water resource management for the benefit of the people.

### **Bridging cultural gaps**

Dutch water professionals have a lot to offer to sustainable water projects all over the world, as was also acknowledged by the Dutch government by earmarking funds for water and agrifood as one of the Top Sector focus domains for the coming



Issues to consider	Do's	Don'ts
What works in one place doesn't necessarily work in another	- Take cultural and local differences into account	- Use one approach world-wide
Adopt local traditions and practices into sustainable solutions	- Try to build on what has successfully worked in the past	- Consider traditional knowledge and practices as 'backward'
Think global, act local	- Involve local people in the planning process - Consider the broader context and consequences of new plans - Ensure the well-being of the local community	- Forget that local issues need local input - View your plan in isolation - Forget to address the needs of local people
Ensure a match between people having to work together, and think beyond barriers	- Create a positive and co-operative working atmosphere - Use cultural differences as an inspiration to create new sustainable solutions	- Create a conflicting atmosphere - Let cultural differences become a source of conflict that hinder the process
Recognize cultural differences and local interests and factor them into your project	- Find out what cultural factors (power distance, social relationships, knowledge level, etc) determine the success of the project	- Fail to ignore culturally dependent enabling and counteracting forces
&		
Create local support for new plans	- Involve local stakeholders in the decision making process - Visualise the situation to share conceptual understanding - Value local people's suggestions and use them if feasible	- Believe that public participation is the enemy of efficiency - Think that you know best what is right for the people concerned - Disregard suggestions of 'lay people'
Understand and respect local cultural values and beliefs	- Appreciate the fact that cultural values and beliefs may differ from your own set of values and beliefs	- Impose your beliefs and values on others - Assume you know what people think and want
Listen to concerns and respond appropriately	- Address the needs and concerns of local people seriously	- Ignore or overrule people's needs and concerns
Think ahead	- Before starting a technical project make sure that the legal, financial and personnel responsibilities for long-term operation and maintenance are clear and covered - Be pro-active	- Trust that once realized, local people will use and maintain the system themselves - Wait for problems to surface
Use local experts	- Involve local people in the work and create jobs for them	- Try to do everything with your 'own workforce'
Regular, open and honest communication prevents delays caused by opposition and legal procedures	- Say what you do and do what you say - Make sure that your communication is line with the audience, use understandable language	- Make promises you can't keep or fail to follow-up - Fail to take language barriers into account
Evaluate the project on a regular basis	- Learn from your mistakes	- Forget to evaluate the process, thereby not allowing mid-course corrections

### Annex 1 – Do's and don'ts for successful intercultural water management

years. Inclusion of cultural aspects will make water governance become even more effective. For instance, if a Dutch Water Board or consultancy is asked to improve the water governance structure in another country, one should not only consider the legal, institutional and socio-economic aspects. One should also be aware of the power distance in that society, the interrelation between different groups, the fact that decision-making may be collectivistic by nature, the role of women, etc. In our book, *“Water a way of life”*, we describe several useful tools for understanding differences in cultures across the world. One of them is Hofstede’s world-wide classification of cultures. By bridging cultural gaps projects will be more aligned to cultural values, resulting in more sustainable water use, maintenance and water governance. Some success factors for sustainable intercultural water management projects are given in annex 1. Thinking beyond barriers is one of them.

*Cultural diversity in itself provides a wealth of knowledge, traditions, values and behaviours, which are useful for finding sustainable solutions for future challenges. In short: a source of inspiration.* ■

#### SUMMARY

Enige jaren geleden besloten wij (Lida Schelwald en Linda Reijerkerk) de relatie tussen waterbeheer en cultuur wereldwijd te verkennen. Het werd een unieke ontdekkingsstocht. Tijdens onze reizen over diverse continenten hadden we interessante gesprekken met vele mensen. Van ministers, ingenieurs en wetenschappers tot lokale mensen, die geduldig in de rij op schoon water stonden te wachten of juist met hun voeten in het water omdat hun huis overstroomd was. Sommige waren wanhopig, anderen juist hoopvol, maar de meesten wilden graag hun verhaal met ons delen. Hun ervaringsverhalen maakten een diepe indruk en lieten ons inzien dat een gezamenlijke inspanning nodig is om waterbeheer werkelijk duurzaam te maken. Culturele aspecten spelen daarbij een sleutelrol. De bevindingen van onze culturele waterreis hebben we vastgelegd in een boek *“Water, a way of life”*.

In dit artikel beschrijven we enkele van onze bevindingen over de relatie tussen water en cultuur, met een speciale focus op water governance. Ook geven we enkele suggesties voor water professionals die in het buitenland werkzaam zijn om de culturele context mee te nemen als een belangrijke voorwaarde voor ‘good water governance’.



- 1 Schelwald, L. and Reijerkerk, L. (2009), *Water, a way of life*, CRC Press, ISBN-13:978-0-415-55104-5
- 2 Hofstede, G. *Allemaal andersdenkenden, Omgaan met cultuurverschillen*, Uitgeverij Compact, Amsterdam, 1995
- 3 Based on; *“The rules of the game and the game of the rules”*, by Prof. Rutgerd Boelens, Wageningen University, NL, 2007
- 4 Worster, D. *Rivers of Empire: Water, aridity and the growth of the American West*, New York, Oxford University Press, 1985
- 5 Westerman, F. *Engineers of the Soul (Ingenieurs van de ziel)*, Amstel Uitgevers BV, 2007
- 6 ICPDR; *International Commission for the Protection of the Danube River*
- 7 *Success factors in self financing local water management*, NWB, 2003