

GLOBAL WATER CRISIS: VALUES AND RIGHTS AT STAKE

Pedro Arrojo Agudo

INTRODUCTION	3
1. IMPACTS OF THE CRISIS	5
1. On aquatic ecosystems	5
2. In food	8
3. In the economy	12
2. A NEW ETHICAL APPROACH	14
1. Complex values at stake	14
2. Functions and rights	16
3. THE CHALLENGE OF “PARTICIPATORY GOVERNANCE”	24
1. Public <i>versus</i> private management	24
2. Promoting participatory governance	27
BRIEF GLOSSARY	30
NOTES	31
QUESTIONS	32

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INTRODUCTION

The current neoliberal model of globalisation, far from slowing down the effects of environmental damage, eliminating injustices and guaranteeing basic rights to the poorest people, has brought the water management to the market, and turned it into a new business opportunity, accelerating the pillaging of water resources and increasing the vulnerability of the weakest sectors of society.

Today, it is estimated that 1.2 billion people do not have guaranteed access to drinking water, and if current trends continue, this figure will increase to 4 billion by 2025. The widespread deterioration of continental aquatic eco-systems is at the root of this humanitarian disaster. This crisis of unsustainability is also aggravating the problem of world hunger, by destroying fish stocks (both in rivers and seas), as well as the traditional agricultural methods of food production that are linked to the cycles of flooding in river floodplains.

In summary, we are facing a global water crisis due to a combination of failures:

- Sustainability: through contamination and abusive exploitation of rivers, lakes and aquifers, through the building of large-scale hydraulic works, and also through widespread deforestation.
- Poverty and injustice: which increases the vulnerability of the poorest communities faced with the destruction of their aquatic ecosystems.
- Governance: due to problems of corruption and the privatisation of water and sanitation services.
- Global democratic institutions: who should be making water a reason for collaboration between nations, and not a source of confrontation and domination.

This global crisis will undoubtedly worsen through the effects of climate change if adequate adaptation policies are not assumed, in order to reduce the vulnerability of populations, in particular the poorest

communities, against the risks of drought and heavy rains which, according to all forecasts, are likely to increase in both intensity and frequency.

In this context, as well as bringing about political and institutional changes and improving technology, we need to adopt a new ethical focus, based on principles of sustainability, fairness and non-violence. We therefore find ourselves faced with the need to promote a «New Water Culture» which restores, within the framework of modernity, the old wisdom of our ancestor's cultures that was based on an attitude of care and respect for Nature.

1. IMPACTS OF THE CRISIS

In every ancient culture we find the notion of «Mother Nature»: a mythical vision of the mother as creator and source of life. Renaissance culture moved away from this focus and introduced the idea of the «domination of Nature» which Francis Bacon, the father of scientific empiricism, announced in quite a brutal way when he proposed that «Science should treat Nature as the Holy Office of the Inquisition treated their prisoners: torturing her until she reveals the last of her secrets».

1. ON AQUATIC ECOSYSTEMS

Romanticism softened the idea of «domination» in order to emphasise the beauty of Nature that «inspires passion and love». This moved towards a new kind of gender mythical understanding of Nature, but this time, taking on the role of the «lover» and the object of man's desire. Having reached this point, the «irrational, unstable, fickle and unpredictable...» side of Nature –traits associated with the feminine gender– became the motivating force behind what was viewed as the necessary and rational role of science and technology,

with man this time clearly assuming the traditional role of the masculine gender, aiming to dominate Nature and put it at the service of mankind¹.

1.1. Destruction of the natural environment

Driven by this logic, and with a blind confidence in science and technology, significant achievements were made which nobody questioned. Nevertheless, this also resulted in disturbing the natural order, with an increasingly high

price to pay for both the poorest people today and for future generations.

The fact that more than 1.2 billion people do not have guaranteed access to drinking water causes more than 10,000 deaths per day, mostly among children. The lack of adequate sanitation services and the discharge of urban and industrial waste directly into the natural environment are directly responsible for this tragedy. In many cases, pollution from heavy metals and other toxins (for example, those produced by open pit mining) has triggered processes of gradual intoxication, causing illness and even death, although these figures do not even appear in the statistics quoted earlier regarding the impact on health or the deaths caused by the ingestion of contaminated water.

The global water crisis we are currently experiencing is not so much a question of water scarcity, but is more to do with the quality of water available. In fact, every community settles near a river, a natural spring or a lake, or perhaps a place where underground water can be accessed through wells. The problem lies in our insatiable and irresponsible development ambition, through which we have damaged these ecosystems and aquifers, resulting in huge health problems among the population.

Unfortunately, we have also witnessed a lack of democracy and responsible behaviour on behalf of many governments, together with the trend towards deregulation championed by the World Trade Organisation (WTO), the International Monetary Fund (IMF) and the World Bank (WB), under the

auspices of promoting «free competition». These factors set the scene for and even encourage activities that cause pollution or that lead to the overexploitation of rivers and aquifers without any regulation, in impoverished or developing countries. This situation is therefore resulting in what is known as «environmental *dumping*» (which goes further than «social *dumping*»), and which is becoming a habitual practice, that operates within the domain of the «free market», even though paradoxically, it involves a practice of unfair, unjust and immoral competition.

The causes of this environmental damage are many:

- Massive decrease in river flow.
- A drastic alteration in natural systems and a rupture in the continuity of river habitats caused by the building of dams.
- Sediment collapse at these dams and an alteration in the flow of solids that feed the deltas and beaches on the coasts.
- Drainage and drying of the wetlands, which destroys their ability to purify and regulate river flows
- Massive deforestation, with the resulting soil erosion and its impacts on the water cycle: more *runoff*, less filtration through aquifers and dam silting phenomena.
- Drilling and drainage works and the occupation of wide flooding areas within the river domain, with the resulting impact on biodiversity, the flow of nutrients and increased flooding risks.

1.2. Pollution: a key problem

Undoubtedly, one of the main reasons for this ecological damage is in the systematic and widespread contamination of rivers, lakes and aquifers. Organic and biological contamination, caused for the most part by urban, agricultural and livestock waste; and toxic contamination, resulting from industrial, agricultural and mining activities.

The direct discharge into the environment of domestic wastewater, as well as the groundwater seepage of effluent from septic tanks and cesspits, are frequently the cause of serious health issues related to water. The diarrhoea caused by drinking contaminated water from these sources is the second highest cause of infant mortality today. It is estimated that around 5000 children under the age of five die every day for this reason, mostly within poor communities and poor countries: five times greater than the number of those that die from AIDS³.

The massive and generalised use of chemicals and pesticides is generating a non-point source pollution, which is very difficult to control. In fact, in many places, agriculture has become the primary source of pollution and, together with urban waste, lead to eutrophication processes, which end up destroying aquatic life, due to nutrients excess.

The liberalisation and increasing deregulation of agricultural markets is harming the economic viability of traditional methods of food production which, from an environmental and social point of view, deserve to be considered as practices that need to be

protected. This situation is instead destroying the rural way of life and causing increasingly large-scale migration towards the poverty belts of big cities.

In the majority of impoverished and developing countries, waste discharge and obsolete production methods, which are toxic and a danger to public health, are still permitted. The absence of international regulatory measures, specially in the mining and industrial sector, combined with the lack of legislation, the failure to enforce it, when it does exist, and even problems of corruption, have led to this situation. These production methods remain nevertheless “profitable” for the companies which, in many cases, try to project a public image of corporate social responsibility and respect for the environment in the developed countries from which they originate.

The proliferation of open-pit mining activities is particularly worrying, since these contaminate headwaters with leachate and waste with heavy metals, cyanide and other toxins.

– In the Cajamarca region (Peru) for example, the indigenous communities that are suffering from serious illnesses caused by the open-pit mining of gold, are continuing their protests, in spite of the fact that this has led to the murder of several of their leaders.

– In the Pilcomayo River (Bolivia), fish have disappeared and plant life is languishing following the strong suspicion that irrigation waters were contaminated by mining activities in Potosí.

- The aggressive expansion of this type of business has led to cases like that of the Pascua Lama glacier (Chile), where one of the big multi-nationals in the sector, the Canadian company Barrick, was awarded significant contracts from the Chilean and Argentinean governments in order to reach a gold deposit underneath a glacier. In this case, neither the public alarm caused by climate change nor the importance of these glaciers as regulators of the rivers that flow from them, provided sufficient reasons to stop the project.
- In Mexico, the San Javier mine (operated by a subsidiary of the Canadian company New Gold), has ignored strong court rulings, with the connivance of the authorities, in order to continue to ravage the town

of San Pedro, near to San Luís Potosí.

- In the Argentinean provinces of San Juan and Mendoza, citizens protests are asking for new laws against open pit mining in order to protect not only public health, but also the economy of the region, which has gained international renown for its wines.

In summary, rivers, lakes and wetlands are suffering the most serious crisis in biodiversity of the planet. As the European Declaration for a New Water Culture underlines, which was signed by one hundred scientists from the different countries of the European Union in 2005, both issues are aspects of the same crisis: the crisis of the unsustainability of aquatic ecosystems and the crisis of the continental water cycle⁴.

2. IN FOOD

The direct and indirect impact on the sources of food production in the world, caused by the crisis of unsustainability of the rivers, lakes and wetlands, are as devastating as they are hidden.

2.1. Fish: source of protein among the poor

Although fish is not usually the main source of protein in the diet of developed countries, (10% in Europe and the USA), it is of huge importance in

impoverished and developing countries. In Africa, it represents more than 20% of animal protein and in Asia it stands at 30%⁵. It is not surprising then that fish is often called the protein of the poor.

During the twentieth century, the construction of large dams harmed river fish and caused the extinction of many species. Among the more well-known cases, we could name the Urrá River in Colombia, Singkarak in Sumatra, Lingjintan in China, Theun Hiboun in Laos or Pak Mun in Thailand. In these

cases, as in many others, the problems of food supply affected and continue to affect hundreds of thousands of poor families in river-side communities.

– In the large Mekong basin⁶, the Tonle Sap Lake, more commonly known as the Great Lake of Cambodia, is not simply a source of flow regulation, but also the heart of community life. With a surface area that fluctuates between 3000 km² in the dry months, and 13,000 km² during monsoon season⁷, the lake is one of the most fertile fish stocks in the world, providing around 100,000 tonnes of fish every year. In fact, this has traditionally been the main source of protein for 9.5 million Cambodians. Approximately 400 species of fish live in the lake. The periodic flooding of over 10,000 km² of fields and woodlands nourishes an ecological cycle of monumental importance. On the one hand, it fertilises the fields it floods as part of a natural cycle that allows the growth of approximately 50% of the rice produced in Cambodia; and on the other hand, the fish spawn and feed in the flooded areas of the forests, taking advantage of the wealth of nutrients that is found there.

Similar cycles take place over thousands of kilometres in the floodplains of Mekong and its tributaries, as far as the Delta, which is one of the most fertile areas in the world. It is estimated that 52 million people depend on the river as a source of their basic food.

In the present day, the accelerated industrial growth of Thailand is leading to the construction of large dams and water transfers. These projects are threatening to cause serious ecological damage in the Basin and particularly in the Delta⁸.

– In the Amazon, where more than 3000 species of fish live, 200,000 tonnes of fish are caught every year, which mostly destined for self-consuming and local markets. However, the advent of industrial-scale fishing, deforestation, waste discharged from mines, the construction of dams and the drainage of wetlands are resulting in the destruction of this source of protein-enriched food, and are causing species as well known as the tambaqui to become endangered.

During the last decade, ecological damage caused in large lake systems is threatening to cause major humanitarian disasters, through ruining fisheries.

– In the Lake Chad, the weakening, the weakening of the monsoon rains and the emergence of long dry periods, as a result of the climate change that is occurring, have reduced the surface of the lake by 80%, transforming the fourth largest lake in Africa into a mere wetland that can practically be crossed on foot.

– In the case of the Aral Sea, by sourcing 90% of the flow from the Amu Daria and Syr Daria Rivers in order to irrigate the cotton fields, the water area has been reduced to less

than half (going from 64,500 km² to 30,000 km²), while its saline content has tripled. For this reason, the fisheries that were producing 44,000 tonnes of fish per year and generated 60,000 jobs have disappeared⁹.

– In Lake Victoria, the introduction of exotic species (such as the Nile perch) and the development of industrial-scale fishing for export, have resulted in a humanitarian crisis and led to the disappearance of traditional fishing methods that provided the main source of food for the local communities.

– In Bangladesh, in the space of only two decades, industrial fishing and its international commercialisation have dramatically increased the size of catches, but have also led to problems of over fishing. Now the amount of fish *per capita* in the area has been reduced by one third¹⁰.

The development of huge hydroelectric infrastructures has not just affected fish in rivers and lakes, but also fish in the sea.

– In the case of the Nile, the large Aswan Dam, has not only seriously affected the river fish (from the 47 species that were fished, 30 have disappeared), but it has also led to the disappearance of 90% of the sardine and anchovy catches in the whole of the Eastern Mediterranean¹¹, causing ruin for thousands of fishing families. Today we know that these species, like many others, spawn at the mouths of large rivers, where they can take advantage of the

wealth of continental nutrients found there, brought by the periodic floods. This natural phenomenon fertilises the coastal platforms in seas that are enclosed, or partially enclosed, and that have less plankton, such as the Mediterranean.

– A similar effect was seen in the Sea of Cortez (Gulf of California), as a result of the water transfer from the Colorado River in order to supply irrigation in Imperial Valley and feed into the urban development of Los Angeles and San Diego in the United States¹².

2.2. Damage to agriculture and livestock

It is important to add that the profound disruption of river flows, in both quantity and quality, taking place in many of the great rivers of the world, is causing a crisis in traditional forms of agricultural production that are linked to the cycles of river flooding.

– In Nigeria, the construction of the Bakalori Dam accounted for the loss of 53% of the traditional crops, linked to flooding cycles in the floodplains; at the same time, it ruined the pastures that served the livestock and severely affected the aquifers, which had been vital resources during periods of drought¹³.

– Similar cases have also been noted, as is documented in the final report made by the *World Commission on Dams*, such as in the Senegal River, which impacted traditional

downstream production systems used by 800,000 people; in the Sobradinho Reservoir (Brazil), where almost 11,000 rural families were seriously affected; and the case of the Tarbela and Kotri Dams, in Pakistan¹⁴.

In all these cases, as in many others, the transition to production methods that were supposed to be more efficient (changing to modern irrigation methods, instead of taking advantage of the seasonal cycles of river flooding), led to serious problems in relation to food supply. This was because no attention was given to the means and the time necessary for these transitional stages to mature and be adopted by the communities themselves.

2.3. From productivity to eco-social efficiency

In spite of their seriousness, these consequences are not usually reflected in the official economic statistics, because most of this food is sold in local markets or self-consumed by the fishers families, without entering the main commercial markets.

Furthermore, it is often argued that these methods of production that are linked to river cycles and traditional river fishing techniques, are inefficient. Nevertheless, if the environmental and

social value is taken into account, as well as criteria of sustainability, fair distribution and easy access to food by the most poor and vulnerable sectors of society, this supposed inefficiency actually results in higher levels of eco-social efficiency.

Without a doubt, it is necessary to change the focus of international food-related organisations in relation to water management. The myth promoted by those concerned with productivity relating to irrigation has on the one hand led to people ignoring the impacts of water policies on fish stocks, and on the other hand, has tended to focus its solution for hunger on an increase in irrigation methods. The emphasis is still placed on the idea that the solution lies in increasing food production, ignoring the fact that the problem often lies in access to the available food among the poorest people... Fortunately, these days people are open to listening to other solutions. Such as the approach of Via Campesina, for years, which places an emphasis on denouncing poverty as well as the need of protecting the traditional ways of life, that underpin the rural fabric, face to the neo-liberal aggressiveness, specially in impoverished and developing countries. New points of view which identify, as a key problem, the failure of the natural cycles which regenerate the fertility of soil, seas and inland aquatic ecosystems...

3. IN THE ECONOMY

The crisis affecting aquatic ecosystems and other related ecosystems, such as forests, brings with it major socio-economic impacts, as far as it affects a complex set of values, functions and environmental services of great importance.

3.1. Large-scale logging and deforestation

One of the key reasons for the deterioration of freshwater sites is deforestation and the uncontrolled expansion of the so-called “agricultural frontier”. The chopping of millions of hectares of primary woodland, often with the support of governments, usually occurs following combined pressure from those with financial interests in timber, farmers, and those with companies related to agricultural exports. Such deforestation projects usually lead to a rapid deterioration in soil quality, followed by episodes of erosion, a decrease in the filtration of the aquifers and an increase in *runoff*. This growing rate of drainage and the decrease of water retention capacity of the land result in weakening reserves and increasing vulnerability of communities face to drought cycles. As well as this, massive *silting* of rivers occurs, due to the sediments coming from the erosion, which increases the risk of overflow and flooding downstream.

One of the most fragile and valuable environmental services provided by the continental aquatic ecosystems, is that

of water regeneration and purification. Rivers and, in a very specific way, wetlands, are like massive natural purifying systems that regenerate the quality of the water. When we damage their pyramid of life, we damage their capacity to digest and biodegrade waste, thus making the quality of these waters even more fragile. One of the most common types of damage caused is called *eutrophication* (because of an excess of nutrients), which comes to life collapse in the aquatic environment, while facilitating the growth of toxic *cyanobacteria* and algae.

3.2. Negative impacts of large-scale hydraulic works

The cyclical rise of river flows, accompanied by flood events, have been and continue to be vital to feeding the alluvial aquifers and fertilising the floodplains. In this regard, people have forgotten that the fertile orchards they value so highly are the result of thousands of flooding episodes. Moreover, these floodplain areas, along with the wetlands, effectively carry out the function of softening the floods, reducing the energy of the peak flows.

Wetlands and aquifers are vital to the natural regulation of the continental water cycle. For some years now, the controversial Hidrovia project between Brazil, Argentina, Paraguay and Bolivia, has been threatening the largest wetland in the world, the Pantanal,

which with its 200,000 km² expanse, feeds into and regulates the La Plata Basin at its head. In order to improve navigability and facilitate the export of minerals and raw materials, the project aims to dredge the river and drain the wetlands. Studies prepared by the Inter-american Development Bank estimate that this would bring about the extinction of 600 species of fish, 650 birds and 80 mammals, as well as increasing the risk of flooding and the effects of drought throughout the entire basin¹⁵.

The construction of large dams in the world has not only broken the continuity of the natural river habitat, bringing about the extinction of various species and the deterioration of fish stocks, but it has also drastically altered the natural cycle of flow and sediment flow. The sediments, which would have shaped the deltas over millions of years and which compensate for the natural process of *subsidence* that usually affects these areas, are silting the reservoirs (often very rapidly), while coastal areas are becoming salinated and are being progressively covered by the sea. These phenomenon, accelerated by the raise of the sea levels due to global warming, shed light in the space of a few decades, on the serious socio-economic consequences facing tens of millions of people.

The collapse of silt and sand in large dams, particularly when they are lo-

cated in the middle or the lower river basins, is causing serious problems on beaches. Today we know that most of the sand on beaches comes not so much from the erosion effects caused by waves, but rather from the flows from rivers that carry solids, which are then distributed along the coast by coastal currents.

The case of the large Aswan Dam on the Nile, with its impact on the Alexandria Delta and on the beaches of northern Africa, is perhaps one of the most significant examples. Woods Hole Oceanographic Institution in Massachusetts estimated that, over the course of six decades, Egypt could gradually lose under the sea 19% of its territory habitable, which would force the displacement of 16% of its population.

Another worrying case is that of the Mekong Basin. The accelerated deforestation at river headwaters is leading to major processes of erosion, which will increase *runoff*, strengthen the current of the river and therefore increase the risk of catastrophic flooding. The subsequent collapse of these sediments at the large dams that have been recently built or the dams that are under construction, along with the massive transfer projects that are planned for Thailand, will lead to huge problems in the Delta, paradoxically through a lack of sediments.

2. A NEW ETHICAL APPROACH

As has already been explained, the issues of unsustainability, poverty and lack of democracy are at the roots of the global water crisis in the world. In this context, the widespread inefficiency of traditional models of water management compels us to re-examine them. However, first of all it will be necessary to reflect upon the values at stake, and on the ethical issues which should lead our priorities and management criteria.

1. COMPLEX VALUES AT STAKE

1.1. The ecosystem approach

Almost ten years ago, suggesting that water should be viewed as an eco-social asset (where the term “eco” would express both *economical* and *ecological* values), rather than as a productive input, would have been the source of much debate and controversy. Today, the need for this conceptual change sets before us the challenge of shifting from the traditional “resource management” approach towards a new “ecosystem” approach. For example, almost everybody has heard of the need to move

from the management of timber supply (resource approach), towards a more complex management of the whole forest (ecosystem approach). This change is gradually becoming more necessary in relation to water resources too.

In fact, the Water Framework Directive (WFD), in force in the European Union since late 2000 promotes this new approach, establishing as its central directive the aim of restoring and preserving the good ecological state of rivers, lakes and wetlands. It is not simply a matter of maintaining the phys-

icochemical properties of the water, viewing it as just another resource, but instead aims to restore and maintain the health of aquatic and riparian habitats. In this way, and beyond the physical and chemical pointers, new biological pointers are required. Biodiversity is in fact the best witness, not just of water quality, but also of the good functioning of the ecosystem.

1.2. Privatisation pressures

Notwithstanding the consistency of the ecosystem approach and its legal implementation in the most developed countries, the traditional approach to productivity under the vision of water as a simple resource still holds a notable influence. The lobbies linked to the construction of large-scale hydraulic infrastructures, along with cultural inertia and electoralist interests hinder the right enforcement of the Water Framework Directive, along with cultural inertia and the electoral persuasions of the people have been an issue in the EU, particularly in our own country, and this has hindered the full application and development of the Water Framework Directive.

On a global scale, the neoliberalism that dominates the current model of globalisation tends to encourage this resource vision of water, but incorporating new criteria of market rationality. Considering water as a mere productive resource results in managing it as an economic asset, that can be divided up, appropriated and exchanged using the logic of market. The conceptual logic of neoliberal commercialism is framed by

the consideration that urban water supplies and sanitation services are simply economic services. The undeniable problems that exist relating to lack of transparency, bureaucracy and even corruption which often affect the public management of water supplies in the world, have been presented by the World Bank as sufficient reason for justifying its policies of privatisation. People's dependence on these services and the correspondent willingness to pay to them, along with in relation to these services and our corresponding willingness to pay for them, along with the growing scarcity of good quality water, have succeeded in making the sector into an attractive and profitable source of business.

In this context, it seems paradoxical that the EU, which is largely responsible for the design and implementation of this neoliberal model of globalisation, should promote and adopt the Water Framework Directive, which hardly fits in with the privatisation approach, as its basic model of water management. Taking the principle of sustainability as the basis for water management from an ecosystem perspective actually implies reinforcing public accountability on this matter. Furthermore, the complex set of values and rights at stake here, pertaining to both the present and the future, coupled with the impossibility of dividing or appropriating them, prove the markets to be too simplistic and ineffective.

In this environment however, the neoliberal model moves its focus on to urban water and sanitation services which, as we have explained, offer more

favourable business conditions, but at the cost of commercialising the most basic needs of the population. Thus, citizens become clients.

1.3. Equity and social cohesion values

Under this Light the ethical consideration and its political projection become unavoidable. The values of equity and social cohesion linked to basic services, such as domestic water and sanitation services (along with health, education, social security...) remain beyond the sensitivities of market logic. Therefore, asking the market to bear these types of considerations in mind is unfeasible. It would not be reasonable to expect the markets to solve issues of social equity and cohesion, to guarantee basic human or social rights, which by nature must be universally accessible, nor to consider the rights of future generations.

In summary then, and going beyond the challenge of sustainability, major ethical issues arise, requiring a deep reflection on the functions, values and rights at stake.

Having reached this stage, it would be useful to again return to the contrast

between water and wood, as natural, renewable resources. Let us suppose that we were able to make peace with Nature. Then we would use wood and water without damaging the health of forests and rivers. In that case, the challenge facing us would be limited to organising the management of water and wood as natural resources. I believe that once we have conquered the challenge of ensuring the sustainability of ecosystems, there would be no significant problems encountered in managing wood as a resource. Nevertheless, we would continue to encounter serious ethical, social and political problems in the domain of water management. The reason for this, in my opinion, is that wood provides us utilities consistently exchangeable for money, which allows to entrust its management to the market, under a suitable legal regulation. For this reason, we consider it legitimate that the lumberjack should sell timber logs to the sawmill to be cut; and then to sell them to the carpenter to build furniture, that would be in turn sold to the people.

However, the values at stake in the case of water are not only more complex, but are also unable to be substituted by financial assets.

2. FUNCTIONS AND RIGHTS

2.1. A new economic vision

For Aristotle, “*oconomia*” was “the art of good housekeeping”; while he qual-

ified another concept using the word *crematistica* for dealing with anything that could be valued in terms of money;

or, in other words, goods that could be bought and sold in the market. If we substitute, in the Aristotelian definition of “*oikonomia*”, the term “house” by “planet” we would arrive at a good definition of the modern “ecological economics”.

Forcing intangible assets (whether environmental or social) to be valued in monetary terms, in order to try and manage everything from a market perspective, usually leads to serious errors. Not all assets are, nor should they be, commercialised, and this is particularly relevant in the case of environmental assets. As Daly argues, some people think that man-made and natural capital are such good substitutes that the very idea of a limiting factor, which requires that the factors be complementary, is irrelevant. ... I think it is sufficiently clear to common sense that natural and man-made capital are fundamentally complements and only marginally substitutable.

Water is certainly a clearly defined element: H₂O. But what is more important in relation to water is not its composition, but rather its functions. Unlike wood or other natural resources, in the case of water we find a multiplicity of uses and functions that are linked to different ethical levels. It brings with it the need to prioritise certain uses of water over others, while at the same time, in each ethical category, functions emerge which in many cases cannot be exchanged for money. For this reason, water management, like environment management or life management, goes beyond the simplicity of market logic and demands

specific and adequate management criteria to deal with the diverse moral categories at stake¹⁶.

As proposed by the European Declaration for a New Water Culture (FNWC, 2004), we need to identify four different ethical categories. In each category, the nature of the objectives, and the rights and duties that are at stake, imply different priority levels and demand different approaches to management:

- Water-life category: this deals with its basic survival functions, both for human beings, as well as every living creature. This should hold the highest priority, in such a way that it guarantees the sustainability of ecosystems and access to a minimum quota of quality water as a human right.
- Water-citizenship category: relating to activities of general interest, such as drinking water supply and sanitation domestic services. This should be given the second highest priority level, falling into the area of citizens rights, linked to the respective citizens duties.
- Water-economy category: this relates to its productive uses, which go beyond what could be considered as the basic quota needed to provide a decent quality of life. This should be at a third level of priority, and is related to the right of each person to aim for a better quality of life. This is the area in which most water is used and where emerge the most significant problems of scarcity and contamination.

– Water-crime category: this deals with illegitimate practices (polluting effluents, over-exploitation), which harm the general interest. These should be avoided and rigorously prosecuted by law.

2.2. Water-life

Recently the General Assembly of UN recognised formally, at the initiative of the Bolivian Government, the access to basic services of water and sanitation as a human right. On the other hand, following an initiative by Spain and Germany, the Human Rights Council of the UN has begun a process to look at the possibility of coming up with a clearer and more forceful statement on the matter.

In any case, it seems clear that access to this basic quota of water-life should be effectively guaranteed and dealt with at the highest priority level. In this case, the criteria should not be to maximise efficiency, which is the fundamental guide of economic rationality, but should instead guarantee its effectiveness. We are faced with values then similar to the “true love” of the song, which “can neither be bought nor sold”, but simply should be guaranteed with top priority. The responsibility for it is borne by the community as a whole; that is, it falls upon national governments and international institutions.

We should not forget that 30-40 litres of drinking water per person per day, which has been suggested as a reference point for what could be considered as the necessary minimum for each person to live with dignity, is

only 1.2 % of the water that is used in society today. There is no justifiable reason why 1.2 billion people do not have guaranteed access to this amount of drinking water. The supposed lack of financial resources is unacceptable, even for governments in poor countries; and more so, for governments in richer countries, as well as international organisations like the World Bank. We should also remember that the “public fountain of free drinking water, on the square, close to home for everyone” was guaranteed in many countries in the past, like ours, when they were poor and when the World Bank didn’t even exist. The challenge back then was not properly financial, but political, but also a political one, in the Aristotelian and noble sense of the term. In short, there was a sense of public responsibility of guaranteeing a free source of drinking water as a priority, before even streets were lit or roads and motorways were built and before the days of extravagant expenditure or military budgets.

On the other hand, in the water-life category we should also include the water that is necessary for the survival of poorer and more vulnerable communities. In many cases, we are dealing with ancestral rights over territories and aquatic ecosystems on which fishing and agricultural activities, vital to the survival of these communities. Obviously these rights over water and rivers, linked to the basic right to food, should fall into the water-life category and be recognised as human rights.

Finally, it is necessary to include in this area of high priority the preservation of aquatic ecosystems, in relation

to the flow regime (quantitative conditions), the quality of the water and the health of the habitats (qualitative conditions), in such a way that their sustainability is guaranteed. In this case, we are again faced with an ethical challenge linked to the principle of intergenerational equity. We must understand that we are only users and not owners of nature. We have no more rights over it than our children, our grandchildren and the generations we will never even meet. Now we are not talking about the 1.2% of water used by society, but rather environmental flows that are of a much greater magnitude. We are talking about notable efforts to avoid spills, preserve water quality and preserve aquatic habitats. Viewing these environmental water flow systems in the same water-life category as basic human rights may raise some questions. Nevertheless, as we have explained, the main reason why 1.2 billion people do not have guaranteed access to drinking water lies precisely in the failure to support the sustainability of these ecosystems.

At the same time, the UN is debating on the so-called third generation of human rights: the collective rights of nations, as the right to peace, to land, and to a healthy environment... It is a matter of asking ourselves from an ethical perspective, whether it is right that as a condition of achieving the dream of the developed world, only rich people should enjoy clean rivers, while poor people should only have access to sewage-polluted rivers. The answer is clear.

In the EU, the Water Framework Directive (WFD) looks at the basic

environmental functions of water as a level of high priority. In fact, the flows necessary to preserve the health of rivers, lakes and wetlands are considered as a restriction to the different productive uses of water. This approach prevents the term “environmental demands”, in order to avoid possible competition with other “demands”. Only drinking water is given a higher priority, since this necessity rarely affects the sustainability of aquatic ecosystems.

2.3. Water-citizenship

Offering domestic water supply and sanitation services is a leap forward from guarantying basic quotas of drinking water: 30-40 litres/person/day, as a quantitative reference of the human right to drinking water. In an average home in any city, we use between 100 and 120 litres/person/day. Today, access to such services in our society is considered as a right that should be available to all, rich and poor. This view of universal access could lead us to include this in the domain of human rights. Nevertheless, I believe it would be more appropriate to place this in the category of citizens' rights. As with human rights, citizens' rights should be accessible to all, but while human rights are not linked to any sense of duty, (and only to the fact of being alive, and wanting to remain so), citizens' rights are linked to corresponding duties of citizenship. We find ourselves then faced with the challenge of articulating a set of rights and duties that are

undoubtedly complex, and in some cases, conflicting.

It essentially comes down to managing values, such as equity and social cohesion, that market has no regard for. These values, linked to the traditional notion of citizenship, must be placed in the “res publica” (in Latin terms) domain; in other words, “they affect everything and everybody”. This is the reason why they should be managed through community or public responsibility.

Public institutions, while they guarantee everybody’s rights as citizens, should establish corresponding duties of citizenship. In this sense, if quality water supply and sanitation services are to be guaranteed for everybody, it is vital to develop tariff models that ensure adequate funding, thereby strengthening citizens responsibility from a sense of social awareness.

In a society as complex as our own, guaranteeing universal access to quality services, and minimising the ecological impact on aquatic ecosystems, represents a major challenge. A tariff system with increasing prices for growing consumption segments, could guarantee the recovery of service costs, based on redistributive social criteria, while introducing incentives for efficiency and individual and collective responsibility. The first quantity of 30 or 40 litres/person/day could even be free of charge, or at least free to those who live below the poverty line. The next quantity of 100 litres should be paid at a price that is closer to the real service cost. On a third scale, the price for cubic metres should be increased in a very clear way;

in order to finally reach the highest tariff for the fourth scale, applicable to luxury uses (gardens, swimming pools...). It would essentially be a matter of discouraging high levels of consumption and introducing a cross-subsidy scheme, where those who consume most water contribute to the costs of those who would have difficulty in paying for the basic.

In this instance, unlike the water-life category where economic logic has nothing to do, we are applying criteria relevant to economic and financial reasoning, even though such criteria don’t still correspond to market rationality. In fact, if the price of apples is €1.50/ kg, we will often receive the offer of buying them at less than €3.00 for 2kg. These financial strategies usually encourage consumption (based on the so-called economies of scale), and seek to increase business profitability. However, the proposed tariff model is based on criteria opposed to the usual business model. The key issue is that the aim is not to make a profit, but instead hope to offer a good public service with universal access, from the vision of the public interest.

2.4. Water-economy

Most of the water that is taken from rivers and aquifers is not used to guarantee such human rights, nor is it used to sustain services that are in the public interest. Instead, it is used in productivist activities that generate wealth, and that go way beyond the basic amount of water needed to live life with dignity. In fact, the surplus goods

they produce, which are then sold on the markets, usually only improve the living conditions of their producers.

The agricultural sector uses over 70% of the water resources that are taken from rivers and aquifers, while the industrial and services sector uses about 15%. In short, these activities are about everyone's legitimate right to try to improve their quality of life beyond the basic level of sufficiency mentioned before. In this category we could even include the right of richest to become richer. But, while this right is legitimate, within reasonable limits, it cannot be linked with the area of human rights or citizens' rights. Even less so, when those who are hoping to make the profits are already very wealthy.

From an ethical point of view, it becomes clear that such uses should be treated as the third priority level after water-life and water-citizenship. In this way, polluting rivers or risking the quality of the water's flow beneath, in the name of economic development, constitutes a serious moral crime.

These types of uses, which are guided by profitable aims, should be, at the very least, guided by principles of responsibility and economic rationality. Each consumer would be responsible for the costs involved in providing the water they use. Moreover, in cases where there is scarcity, the so-called opportunity cost would also have to be taken on. This is simply the cost of water scarcity. In the water-economy category, the need to apply the principle of recovering the integral costs goes without saying, and those include:

financial costs (depreciation of investments as well as maintenance and management costs), environmental costs and the intrinsic value of the resource itself, in other words, the opportunity cost, if availability does not meet demand. In this instance, there are no reasons to justify direct or cross subsidies; in the same way that the wood the carpenter buys is not subsidised, nor the petrol used by the taxi driver.

The increasing scarcity of water used to supply an unlimited rise in productive activities can no longer be viewed as a "tragedy to be avoided", leaving the responsibility with the public finances; instead it is an unavoidable reality to be managed using criteria of responsibility and economic rationality. Due to our insatiable ambition, we have made and are continuing to make scarce what was once abundant; we are making smaller our planet; and particularly, we are causing a shortage of fresh-water in rivers, lakes, wetlands and aquifers. In any event, we should not forget that scarcity is an inherent characteristic of all economic assets, which are by definition "useful and scarce". It is therefore a question of applying the criteria of economic logic (not necessarily market logic) to the use of water. A use which, let us not forget, hopes to generate benefits for the user, through its relationship with the market which governs productivist activities in the water-economy category.

Ultimately, as we mentioned earlier, water that is necessary for non-profitable uses which poorer communities depend on for survival, should fall into the water-life category.

Economic activities also exist which, though they are profitable, could be considered as being economic activities in the public interest, in that they generate social or environmental benefits that are not valued by the markets. However, in countries like Spain, the “public interest” argument has been twisted so much in relation to water that it is necessary to revise what we understand by the notion. Traditionally, the “public interest” label has been used to justify huge public investments into hydraulic works, using the traditional “supply side” strategies. Although such strategies are today becoming obsolete, the powerful economic groups that have been controlling water policies continue to manipulate this notion from a biased perspective that does not represent the public interest of modern society. For this reason it is necessary to redefine the concept of the public interest, using modern priorities. This redefinition of the term is particularly urgent in relation to irrigation, since the reality of how it is carried out in the modern rural environment has been severely distorted.

The growth of agri-business in the domain of irrigation is increasing rapidly today, in relation to large-scale mechanised farms and modern intensive farms, such as polytunnels. At the same time, the proportion of farms operated on a part-time basis has also increased, in cases where farms are taken on as a second income. For these reasons, the traditional family farm is now far from being representative of the whole agricultural sector.

By looking at just these three types of farming, we can identify social values that are of a very different nature. For example, it would be very difficult to justify describing the irrigation *agri-business* as an area that is in the public interest. In the same way, it would be difficult to justify the public interest factor in irrigation on farms that are managed by their owners as sources of secondary income, since many of these owners often do not even live in the rural environment at all.

Ultimately, it is the serious polluting effects of the dominant models of agriculture and livestock (nitrates, pesticides, slurry...) that calls into question the public interest argument for such models. If we add to these the serious social and environmental impacts of large dams and transfers on aquatic ecosystems and coastal communities (including the flooding of towns and inhabited valley areas in mountainous regions), we see a clear need to have another look at the supposed public interest label which has been indiscriminately awarded to projects such as large hydraulic works linked to new irrigation systems (or to hydroelectric production).

It is therefore necessary to establish new social and environmental criteria that allow us to identify which agricultural projects have the right to be considered as economic activities that genuinely are in the public interest. Strengthening the rural fabric, with its social, cultural and natural values, or supporting the pursuit of specific environmental objectives, would undoubtedly be in the public interest in our

society. In this sense, it is reasonable to argue that it is in the public interest to protect the family farm, particularly in relation to irrigation. It would be necessary to develop this social argument, but ensuring that good environmental farming practices be followed.

The EU has begun, albeit timidly, to promote environmental farming practices and criteria for eco-conditionality in order to obtain grants. This approach needs to re-emphasise the value of the traditional un-irrigated crops as an environmental farming practice, particularly in Mediterranean areas, where the limits of sustainability of rivers and aquifers have been exceeded. In this instance, due to the current conditions of climate change, it would also be

necessary to provide a National Plan for Traditional Un-irrigated Lands to establish concrete policies in this regard, as well as revising the current National Irrigation Plan in a realistic and prudent way.

While accepting the need to support certain agricultural practices of irrigation, it is also important to reflect on how such support could be offered, in such a way that it encourages good practice and responsible attitudes. More specifically, it would be preferable direct subsidies to these activities, instead of offering subsidised water, as was usually the case. In this way, and at the same cost to public finances, it would encourage a more efficient and responsible use of water.

3. THE CHALLENGE OF “PARTICIPATORY GOVERNANCE”

The neoliberal strategy of the World Bank and the WTO has gradually succeeded in reducing the sphere of influence of public authorities on all levels, so as to leave more space for private entities. Under this influence, the traditional role of the State as a promoter of the values of justice and social cohesion has been lessened and deactivated. We are therefore observing a process of gradual “weakening” of our public institutions, driven by the idea that the most money is to be found in the private purse. Every electoral campaign that hopes to obtain victory always promises a reduction in taxes. It promotes a lack of trust in public services, presenting them as inefficient, opaque and bureaucratic, all the while promoting the unregulated policies of privatisation as the new form of modernity, flexibility, efficiency and logic, thus glorifying the virtues of the free market.

1. PUBLIC *VERSUS* PRIVATE MANAGEMENT

1.1. Policies of deregulation and privatisation

From this perspective, guaranteeing universal access to basic services that are in the public interest, such as water, sanitation, health or education, traditionally understood as rights of citizen-

ship now becomes understood as interference from the State in the free market.

It is implied that the State should step back and allow such services to be managed as mere economic activities in a free market and competitive environ-

ment. Citizens therefore become customers; and the services in question are no longer services for universal access, but instead become accessible to those who can and wish to pay for them. This deregulatory influence, exercised by the World Bank in a systematic way over poor and developing countries, has succeeded in dismantling, or at least has weakened the already fragile public services and policies of social protection that existed in these countries. Yet even in the developed world, the so-called welfare state has been seriously affected. Under these conditions, public institutions whose financial capacities are weakened tend to “sell the furniture”, and this can lead to the privatisation of basic services that were formerly under public responsibility as a way of alleviating the financial situation.

The processes of privatisation in the big cities of poor and developing countries (big corporations are never interested in small towns or rural areas), under the influence of the World Bank, have led to the rebellion of the poorest people. In this context, the multinational companies in question have had to change their strategy. For nearly two decades, these large corporations (of mainly European origin) favoured the so-called “unregulated markets”, where the lack of guidelines and public control allowed greater room for business to profit. However, these corporations are today arguing that the lack of regulation, as well as the social and political instability, has led to even greater risks... For this reason, the strategy over the last few years has turned its focus instead to so-called “reliable markets”,

such as the emerging markets of Eastern Europe, including Russia.

International financial institutions and large private corporations have used three main arguments, in order to justify policies of deregulation and privatisation:

- With the financial crisis facing governments, it is assumed that the private sector can make the necessary investments so as to allow their service to be made available to the poorest people.
- Faced with problems of inefficiency and corruption in governments, free competition encourages efficiency and gives greater control to the consumers through their consumers’ rights.
- Faced with the increasing technical complexity of water and sanitation services in large cities, privatisation offers the necessary technology and organisational capacity.

However, it is clear that large private companies have invested very little of their own resources in building up networks or basic infrastructure in developing countries, as was demonstrated in an empirical way by the PRINWASS¹⁷ project, funded by the EU. This research project studied a wide selection of cases and the conclusions reached in the case of Argentina were particularly clear, since this was the first country in Latin America to introduce the privatisation of water services. While these contracts were given to large European companies, most investments made were usually from the

public, while only a small proportion of investments were made by these private operators. These companies always considered it risky and unprofitable to make major investments in basic infrastructures. In the majority of cases, the privatisation process only succeeded in unlocking loans from the World Bank, which were then managed by the operating company, even though these loans were subsequently added to the public debt of the country.

Today, in the middle of the global economic crisis, this argument has been silenced, in that it is the large companies that now require public capital in order to survive. What is scandalous in this context is that billions of euro have miraculously appeared to save these large financial institutions, which had previously promoted and encouraged deregulatory policies and privatisation.

1.2. The myth of “free competition”

The second argument, relating to the advantages of free competition, which could be valid in other services, is not applicable to water. Above all, it is important to underline that these supply water services necessarily are what is called a “natural monopoly”. The privatisation process, in this instance, may provide the opportunity to compete “for the market” but not competition “in the market”. In other words, the most we can hope for is short-lived competition in order to achieve the contract that is in the public domain, if the contract is not awarded directly to a company. In any

event, once the contract has been awarded, the service becomes managed as a private monopoly for many decades, with conditions that are difficult to revise and clauses that are hard to reverse.

Although it may seem paradoxical, what usually happens in practice is that the level of real competition in the markets is reduced. In cases when management is municipal, or is given from a local or regional public company, the acquisition of new technology, maintenance work and modernisation, as well as many other specific works, are usually contracted out through the market, where many small and medium highly specialised enterprises compete for the work. This is known as the market of “secondary inputs”, which use to generate a greater volume of business than the actual management of the service itself. Nevertheless, when the service is contracted out to some of the larger multinational operators, the “secondary *inputs*” are usually blocked and closed to competition, because these companies avail of their own resources to cover such needs. The final result then, paradoxically, is that there is less competition in the market.

As we have explained then, we are dealing with a “natural monopoly”. In that context, the control of citizens over the private company, through individual consumers' rights, does not work. This is because these rights are usually only valid when consumers have the option to change service providers, an option which in this case, is not possible.

As publicly stated by the director of the World Bank in Brazil, Vinod

Thomas: «When there is a risk of a private monopoly being created, it is better

to leave the services in the hands of the State» (*Folha de Sao Paulo*, 21-9-2003).

2. PROMOTING PARTICIPATORY GOVERNANCE

Furthermore, the supposed transparency of the market compared to the opacity of the public sector is more of a myth than a reality. The fact that in many cases public services are bureaucratic and opaque does not mean that they have to be like this. In fact, public services require transparency, because the public institutions owe it to their citizens; while private ownership, which is legally protected by the right to private information, actually leads to a lack of transparency, which use to be restricted to the major share-holders of the company.

In any event, the problems of opacity, bureaucracy and even corruption, are not resolved by privatising the public sector, but rather by democratising it. Nobody would ever think of proposing privatisation as a solution in the case of police corruption for example. In fact, in countries where these issues negatively affect public life, the advent of private companies has only aggravated these problems instead of resolving them, by feeding into the logic of the system that adopted them.

Today, even in advanced economies, the challenge of bringing about reform in the public sector is ongoing, with the ultimate ideal aim of introducing a

participatory system of management that would guarantee transparency. Since “competition in the market” is not possible for this kind of services under “natural monopoly”, efficiency must be enhanced promoting the “competition through information” by means of publicly comparing similar services, a practice known as “*benchmarking*”, which is currently driving new models of participatory governance.

Lastly, arguing that the complexity of some modern water and sanitation services is too much for the capacity of the public sector is a little inaccurate. In fact, the most efficient water and sanitation services are to be found in countries like Holland, Switzerland, Sweden or Germany. These services are managed by the public through smaller local or regional operators, which in recent times have begun to cluster together on a regional level in order to improve their efficiency, operating as broader economies of scale. The key of good management is not so much demonstrated through technology, which can always be obtained on the market, but rather in good governance on a local and regional level, which allows these services to be offered to citizens and to the local businesses that depend on them in an effective way.

In any event, in this fiery debate, it is necessary to clearly define concepts and terms. Often deregulation and privatisation are confused. Even accepting public responsibility for these types of services, it is still often more appropriate, alongside other options, to hand over their management to a private operator, with sufficient contract clauses and regulation to ensure ultimate control of the licensee by the government. However, controlling the management of these large companies in an effective way is not only difficult, but in practice, is almost impossible. On the one hand, in the majority of cases, the same public sector, once it has handed over a service, literally ceases to worry about it entirely. But even in cases where there is a sincere desire to manage the contract company, the disproportion of means and influence between the local authorities (in charge of services) and the multinational corporations (operating the services), makes effective regulation unviable. In fact, it usually leads sooner or later, to a phenomenon known as the “regulator capture”. Moreover, the World Bank and its policies of supporting privatisation, has not been known for promoting conditions of strict public regulation that would ensure transparency, citizens participation and guarantee human and social rights of the most vulnerable.

The deregulatory influences that are at work on a global scale as well as on a European scale, deserve a much broader public debate. In the case of the countries that signed the Aarhus Convention, among them Spain and the

EU, such a debate is unavoidable in the application of the principle of pro-active participation, which the Convention set up. The decision to privatise these types of services should not be looked upon as being simply an administrative matter, limited to the local authority offices or the offices of the President of the regional or state government. Even debates in local governments or parliaments are not enough. Since these are decisions that affect citizens’ rights and human rights over several decades, it is instead necessary to introduce a broad public debate that would, in this case, culminate in a referendum, as recommended by the European Declaration for a New Water Culture (FNWC, 2005).

2.1. Conclusion

Together with the formal recognition of the public control over water and water ecosystems, we are now faced with a need to reflect upon the challenge imposed by the new model of sustainability and the obligation to guarantee access to drinking water and sanitation services as a basic human right.

In relation to water management, accepting the principles of inter and intra-generational equity reinforces the need to rethink the ownership and public/community management of water ecosystems and aquifers from a new approach, which would give priority to ensuring it functions in a sustainable way, as well as ensuring the human rights of present and future generations. Going beyond this, we need to confront the challenge of identifying and man-

aging citizens' rights from a global perspective. Access to quality domestic water and sanitation services must be tackled from this global perspective, and treated as a right which should become an issue of universal access, following models of governance which encourage social responsibility through participation and transparency. Ultimately the whole area requires us to design and develop new models of public participatory management.

The serious conflicts that have arisen against privatisation processes have set the ball rolling somewhat, but this does not mean that the problem of how to adequately manage these basic

services has been resolved. Even in the heart of the movement for public participatory management under social control, the debate rages on how to organise the necessary balance between social rights and duties, particularly in relation to the financial management of these services. The decision on which pricing policy to apply remains a subject of controversy. Understanding and taking on all these reforms cannot be done by decree, but instead requires new models of participatory governance from local, regional and national bodies within a global framework that safeguards human rights and develops a new framework for global citizenship.

BRIEF GLOSSARY

Cyanobacteria

Single-celled organism belonging to the kingdom Monera, which lacks a membrane-bound nucleus, carries out photosynthesis and contains chlorophyll and other pigments that give it a greenish-blue colour. It lives in an aquatic environment, isolated or grouped with others in colonies or filaments. It also has the name *cyanophyceae algae* or *blue algae*.

Clogging

Accumulation of sediment from riverbeds.

Dumping

The commercial practice of selling things below cost price, in order to seize the market, with serious consequences.

Effluent

Waste liquid from industrial plants.

Runoff

Rainwater that runs along the ground's surface.

Drought

Low or minimum water flow which at certain times of the year is found in rivers, streams, ponds, etc., due to drought.

Eutrophication

An increase of nutrients in freshwater lakes that produces an excess of *phytoplankton* (Sea or freshwater plankton, predominantly made up of plant organisms such as certain microscopic algae).

Leachate

Is the liquid produced when water is filtered through permeable matter. It may contain as much material in suspension as in dissolved form, and both are usually found together. The dangers of leachates are due to the high concentrations of organic pollutants and ammoniacal nitrogen.

Subsidence

Gradual subsidence due to the compaction of sediments.

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6. M.T. HILL, «Summary of fisheries resources and Projects in the Mekong River»; study presented at the seminar *Mekong: International Seminar on Sustainable Development through Cooperation*, Washington DC, Nov.-Dec. 1995.
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9. P. McCULLY, *Silenced Rivers: the Ecology and Politics of Large Dams*, Argentina, Proteger Ediciones, 2004, (Sp. translation). J. N. ABRAMOVITZ, *Imperilled waters, impoverished future: the decline of freshwater ecosystems*, Bilbao, Bakeaz (Ed.), Cuadernos Worldwatch, 1996 (Sp. translation).
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17. E. CASTRO, PRINWASS, 2004, Research project funded by the EU; <http://www.ox.ac.uk/~prinwass/es/argentina.shtml>.

QUESTIONS

This booklet, through information and case studies from around the world, outlines the global crisis that is affecting water. A crisis that is described thus:

«The current neoliberal model of globalisation, far from slowing down the effects of environmental damage, eliminating injustices and guaranteeing basic rights to the poorest people, has instead brought about the commercialisation of the water market, and turned it into a new opportunity for business, accelerating the pillaging of water resources and increasing the vulnerability of the weakest sectors of society».

As well as criticising the status quo, the author develops an argument in favour of promoting a “New Culture of Water” which returns to the wisdom of our ancestral cultures and is based on prudence and respect for Nature.

We could then focus our debate on the functions and rights related to water that are identified in the booklet:

- 1.** How do we feel about the fact that this water-life, which is a basic human right, is not available to millions of people around the world?
- 2.** What would cause us to consider water as a citizen’s right (water-citizenship)? What duties are associated with this right?
- 3.** What limits or conditions should be placed on water as a source of wealth (water-economy)?
- 4.** Do you believe a real social conscience exists which reacts against spills of pollutants or the illegal behaviour described in the water-crime category?
- 5.** Which argument(s) developed by the author in this booklet to move towards a New Culture of Water seem most decisive to you? Which points touch on your way of life or affect people you share a house, neighbourhood or city with?