WATER: A TOOL FOR COOPERATION

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article published on L'Acqua, n.1, 2006

The available amount of water resources – *per se* – would be sufficient to meet the requirements of the Planet[1], but - because of their uneven distribution - many areas are affected by severe shortage whose causes can be ascribed – first of all – to climate and environment conditions, often burdened by demographic concentration.[2]

The shortage of water can be alleviated through infrastructures, planning of use and saving techniques. The managing system, technical practices (withdrawal, distribution and treatment) and planning of use of the resource are summarized in the definition of "water management". Such management can be more or less efficient depending upon the ability of each administrative system, including the development policies of a given geographic area and planning criteria which privilege the social and economic development in a perspective of environment safeguard: the environment perceived as a dynamic resource where human activities are deployed and whose potential for renewal is therefore to be ensured. These are some of the principles which lead – in the western countries – the laborious pathway of sustainable development. Our society is called to the complex challenge of assessing the not necessarily negative changes generated in the environment. In other words, evaluating the response of the system to every pressure it undergoes. The question – in its widest perspective – is unanswered by the current status of knowledge. Environment is an extremely complex evolutionary system which nowadays cannot be represented in terms of known physical laws, nor the new conditions of equilibrium which would be generated by different pressures can be accurately determined. Realizing this limit, we will have to keep our analysis within the boundaries of experience and time scale of human life. We know, for instance, that the ideal capability of self-purification from polluting agents in a water system varies from a few hours to million years depending upon both the agent and the body of water (river, lake, water table or sea); also, the timing of renewal of a water system ranges from a few weeks for rivers up to thousands and ten thousands years for glaciers, seas, oceans and groundwater. These are obviously indicative estimates whose value may fluctuate significantly depending upon the conformation of the water system itself. The fact remains that – as regards those water reserves which are crucial for human needs – the timing required for formation and self-purification are far greater than the expected life of several generations. Hence the senselessness of giving up vital resources and – subsequently – the scientific and technological challenge of resorting to procedures, methods, practices and techniques which will enable us not to forfeit the welfare, the industrial progress or the economic and social development.

Unfortunately, we are still far from being able to state that the mitigation actions adopted in the Western countries have led to an effective reduction of the quality and volume alteration of our water resources. We can nevertheless be positive that the environment policies the world over are

[1] Water covers 70% of the planet surface, but 97% of it has a too high salinity level for any industrial, agricultural and food processing use and consumption. 70% of freshwater, which then represents 3% of the total water – is stored in the ice caps of the Poles, glaciers and groundwater. The surface water in water streams and hydraulic basins thus represents less than 1% (precisely 0.01%) of the total.

[2] It occurs the areas of severest shortage very often correspond to the ones of greatest urbanization (e.g. the Coast of Northern Africa, central Asia, etc.)

oriented to an eco-efficient economic growth. Not by accident was "environment as an opportunity" one of the leading themes of the semester of Italian Presidency of the European Union in 2003, in compliance with the pathway traced in Johannesburg, Lisbon, Goteborg and Barcelona.

It is worth pointing out that water is not only a "physical and chemical element" which constitutes a primary resource for any source of life and for the eco-system in general, but that it has been taking scientific, cultural, religious and political values throughout the different eras of human history.

There is a strong link between culture – collective imagination – philosophic/religious symbolism and the bodies of water: only at the end of the 18th century did Alexis-Claude Clairaut's[3] atmospheric theory of evaporation and precipitations (we remind here that 60% of rainwater evaporates and forms the clouds, 25% of it penetrates the soil and 15% supplies rivers and lakes) replace the assumption of the subterranean cycle of Plato's system (freshwater would originate from the contact of the sea with the heated center of Earth and originate springs and surface streams by evaporation and capillarity). Since then, water has become a subject of scientific investigation and an essential element for industrial development. For instance, the first principles of hydrometrics and hydraulic constructions go back to little before and are enunciated in treatise *"Della Natura dei Fiumi"* written in 1697 by Bologna's mathematician Domenico Guglielmini.

The managing, consumption and transformation into energy of the water resources respond to a paradigm that – up to the middle of last century – was based upon the conviction that the freshwater resources – even though limited – could be "multiplied" by the progress of the engineering techniques. We nowadays realize that this paradigm is not altogether true; water consumption has increased more in the last 40 years than during the three previous centuries, with an annual rhythm ranging between 4% and 8% (subsequently, the use of water has tripled since the middle of last century). A significant contribution to this increase comes from the developing countries. Evidence of it lays in the lowering of the water table and drying up of several basins and rivers in more or less all the continents. Water procurement does not manage to keep up with the trend of the demand, since population grows at a dizzy rate and the towns are bursting[4]: as Sartori says, the Earth is breaking out[5]. Still, the main cause of the bewildering increase in both consumption and quality depauperation of the hydraulic resource is the indispensable fast intensification of the economic activities which accompanies the demographic growth.

Today, water consumption in the world is distributed as follows: the sole agriculture consumes more than 70% of the resources, the industry and energy sectors 22%, food processing and human hygiene only 8%. Furthermore, the water used for irrigation and agriculture which – as we have noted – represent the leading item in water consumption, is inversely proportional to the degree of development: in the developing countries, approximately 60% of the freshwater is dispersed because of the poor state of the distribution networks, inefficiency of the irrigation techniques and non-reuse of the waste water. Because of this, in spite of their using the double amount of water per hectare than in the industrialized world, the agricultural output in the developing countries is only one third. Nevertheless, the equation old systems = greater consumption of the water resource should not be given for granted. This holds certainly true in our own the development system, i.e. in market economy industrial countries. On the other hand, there are different models based – according to needs and culture – on "water sustainability", such as in desert or half-desert places (e.g. "oasis model" described by town planning architect Pietro Laureano). Unfortunately, these fascinating options concern just limited groups of people and are not applicable to ensure the essential conditions of life to the multiplicity of individuals submitted to all the positive and negative effects of globalization who concentrate in particular areas of the world. Nevertheless,

[3] A. C. Clairaut, 1743: Théorie de la Figure de La Terre

[4] Malthus-Falkenmark's law forecasts a doubling of the population every 20 years;
The population expected by l 2050 is 9 billion people (1950-2050 projection – United Nations 1998)

[5] G. Sartori, 2003: La Terra Scoppia. Sovrappopolazione e sviluppo. Ed Rizzoli

these models are useful to inspire development choices oriented to sustainability and environment compatibility.

Water or – better – water consumption is also a cause of social division: According to FAO, the 15,000 m^3 of water needed as an average to irrigate a hectare of rice of the modern high-yield varieties would be sufficient for 100 nomads and 450 heads of kettle for 3 years; for 100 rural families for 3 years, for 100 urban families for 2 years; and to supply 100 customers of a luxury hotel for only 55 days.

I may be objected that that this will certainly not solve the issue of water emergency at world level: already in 1995 did the World Bank sound the alarm stating that 80 countries, i.e. 40% of the world's population, are suffering water shortage, i.e. live with less than 1000 m^3 of water per inhabitant per year, and that 50% of the world population (i.e. approx. 3 billion people) do not avail to appropriate systems for water treatment and have no access to drinkable water. As a consequence, mortality connected to epidemics and contagions due to the pollution of water amounts – according to the World Health Organization – to some 30 million people per year. According to the World Bank, this is due to an often excessive concentration of the water management systems under the control of the State (and little left to the private sector) and to the fact that water is considered a free or low cost item. In other words, water should be treated as an "economic commodity" and "productivity" criteria should be defined as this occurs in the largest majority of the Western and/or industrialized countries.

Such economic criteria should nevertheless be thought over and proposed with great cautiousness: should we ignore that water is a right for the human beings and the cultural and religious factors which celebrate its sacredness, we will risk to increase the gap and the latent conflict between the developed countries and the developing ones and create virtual inflation cycles since the greatest cost should finally be covered under other forms by the governments of the developing countries (where – by the way – the revenue per head is less than 10 dollars per head per day). *Ad absurdum*, the use of water for industrial purposes should be privileged on the agricultural one, thus triggering conflictual processes about the use of the resource with serious consequences for both man and the environment: trivially enough, and as a mere title of example, on the economic point of view 1,000 tons of water used in the fields produces approximately one ton of wheat for a value of 200 USD, whilst they may add value to the industrial production for approx. 14,000 USD.

Besides being a subject for conflicts between uses, water may sometimes raise disputes between states, since it is one of the most unevenly distributed substances in the world and its availability remarkably varies from a country to another one: water thus becomes a geo-strategic objective and a cause of possible conflicts between the states!

According to the "Plan Bleu[6]"data, less than 10 countries share 60% of the natural water resources in the world (first places: Brazil, Russia, China, Canada, Indonesia, United States). The countries of Europe and of the Mediterranean area have internal (natural and renewable) water resources which – as an average – can be evaluated into 985 Km^3/year per country, but they are extremely unevenly distributed between North (74%), East (21%) and South (5%). On a total of 25 countries in the Mediterranean area, 8 of them – with an overall population of 115 million inhabitants – are below the so-called critical threshold (1000 m^3 per inhabitant per year) and another 6 of them, i.e. Israel, Jordan, Libya, Malta, Palestinian Authority and Tunisia, with a population of 28 million inhabitants, have resources lower than the threshold which is considered of absolute poverty (500 m^3 per inhabitant per year). Furthermore, the yearly consumption per head ranges from 1,000 m^3 of Albania and Yugoslavian Federation to 100 m^3 only in the Gaza territory and in Malta.

Such discrepancies may further increase with the occurrence of drought cycles extended during years, which are witnessed several times within a century and have intensified in the last decades as a result of the climate changes in progress. Furthermore, in the driest countries of the Mediterranean area, the climate conditions call for irrigation on all the crops; agriculture thus

[6] http://www.planbleu.org

prevails on all the other uses and further increases the global demand of water. In the end, the impact of both the urban and industrial waste water in the Mediterranean area (an average of 15 billion c m^3/year) is severer in the South than in the North because of the absence of means and strategies to prevent pollution (waste water treatment plants, waste control, rational use of pesticides and fertilizers, incentives for lower pollution and so on). All this further affects the quality and resources of drinkable water which can actually be resorted to.

The projections show a disquieting scenario for the future: in ten years, the water supply per head will reduce by 15% in Israel, 30% in Egypt, 40% in Nigeria and 50% in Kenya. Furthermore, countries such as Saudi Arabia and Libya have already exceeded their availability of renewable water and are bound to resort to fossil aquifers, i.e. to non-renewable resources which – at the current rate of extraction – shall be exhausted within the next 15 to 60 years.

From now to 2025, i.e. in one generation, the quantity of water available for each inhabitant of Middle East and Northern Africa shall diminish 80%. Yet, if the conditions are particularly severe in these countries, China and India are not better off, since their water table is lowering by 1.5 to 3 m per year!

The shortage and extreme unevenness of the water resources has caused (and may cause again) conflicts in the area of the Middle East. Back to 1987, Mr. Boutros Ghali, then the Egyptian Minister of Foreign Affairs, believed that – with reference to the basin of river Nile - "water and not politics shall be the cause of the next war in the Region". Such view, i.e. water as potential cause of regional conflicts, is shared by hydrologist Thomas Naff [7], who – in 1985 – stated "…it will just be water to determine the future of the Occupied Territories (West Bank) and – beyond that – peace or war. Should the water crisis occur, or not be solved, a conflict between the downstream countries, the poorest ones in water in the whole basin of river Jordan[8], is likely to take place and certainly involve other Arabian countries". To this purpose, I would like to remind that the tension with Syria for the control of the sources of river Jordan was amongst the causes of the 6-day war in June 1967. This was then "solved" by Moshe Dayan in an unplanned blitz which led to the conquest of the Golan heights on June 9th 1967 and erased the threat impending on Israel's water procurement: the conquest of the Golan tableland (including its springs, which supply the Sea of Galilee) meant controlling the main water source for Israel, which contributes to one third of its freshwater consumption. Yet, the 6-day war was not the only one in last century whose stake was the control of water resources: also the Iran-Iraq war of 1980 was due – amongst other things – to the control of the Shatt-al-Arab Delta at the confluence of the Arabian Gulf.

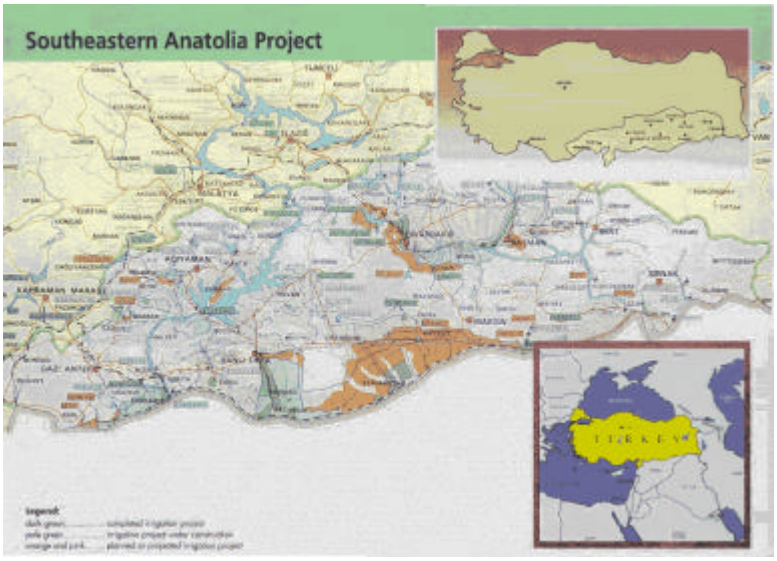
Map of the Shatt al Arab river: a river of Western Asia formed by the confluence of Tigris and Euphrates, which unite 150 km before flowing into the Arabian Gulf. The Shatt al Arab, on which the Iraqi town of Bassora is facing, is navigable for a long section and this makes it precious for the traffic of the tankers within the region. This is why the area gravitating around this water stream was at the

[7] Thomas Naff. 1985. "Water: An Emerging Issue in the Middle East?" Annals of the American Academy of Political and Social Science 482: 65-84

[8] Natural availability: Israel 370 m3/per head per year; Jordan 220 m3/per head per year; Palestine 100 m3/per head per year; Lebanon 1780 m3 per head per year; Syria 2830 m3 per head per year, UNDP 1994

center of the war which saw Iraq against Iran between 1980 and 1988

In more general terms, the control of water may provide a country with the opportunity of solving political and territory issues in opposition to its neighboring states which share the bodies of water (an example is shown by the utilization of Tigris and Euphrates, which involve Turkey, Syria and Iraq, where these two rivers join to form the Shatt-al-Arab, and the contentious lies in the large water project of Turkey called GAP, which would transform a tenth of its territory, today dry and underdeveloped, into a fertile, industrially developed region[9]).



Territory involved by the GAP project (source: http://www.adiyamanli.org/ataturk_dam.htm)

[9] The Iraqi territory is afferent to the hydrographic basin of river Euphrates, of which Tigris is the main tributary. The basin shows the typical features of an international hydrographic basin where the resource is shared amongst several countries and whose availability depends on the utilization and the management rules of the afferent countries, in particular the ones upstream. In this specific case, the sources of both the rivers are in the Turkish territory. Since the very definition of the objectives of the GAP project (Guneydogu Anadolu Projesi / Southeastern Anatolia Project) in 1977, which aimed at hydro-power development in the mountain basins of Tigris and Euphrates, the Pentagon and the World Bank have evaluated that the program of the new works in the Anatolian region (22 barrages, hydropower stations an basins for over 70,000 Km^3) could be grounds for conflicts between the Ankara government and its Southern neighbors, namely Syria and Iraq. Even though GAP is a regional plan involving only a small portion of Turkey, i.e. the South-East part of Anatolia (75,000 km^2, 9.5% of the territory, 5 million 500,000 inhabitants, 8.5 of the overall population) it would be an actual alteration of the natural water availability of the downstream users. Even though GAP involved a multiple use of water and a coordination – limited to ministry organisms - it did not keep into account the impact on the semi-arid and bordering environment, the rural multi-ethnic society of the region, the international aspect of the water of the two mythical rivers, or the water table located close to the Syrian border, which was already extensively utilized for irrigation.
Besides the aforementioned GAP project, other programs, more oriented to irrigation, started in Syria in the 1970's with the dam of Tishreen, upstream the great works of Tabqa/Thawra at the Turkish border, with the irrigation of arid land in the plain of Aleppo, Ressafe, of the terraces in Raqqa, Deir-er-Zor and Meyadin, of the valleys Balikh and Khabour, two tributaries of river Euphrates, and with the construction of the water pumping station from Tigris in the region of the so-called duck-beak.
The international agreement signed in 1987 and in force to date establishes that Turkey should guarantee to Syria an average rate of 500m3/sec and Syria, on its turn, is to transfer 58% of it to Iraq (i.e. approx 290 m3/s). These values correspond to approx 40% and 60% of the natural outflows for Syria and Iraq respectively.

Keeping into account the strategic importance of Turkey's richness in water in the whole Middle East region which – thanks also to the American mediation (see the *"water pipe for peace"* plan) - might guarantee the hydraulic integration to the requirements of economic and social development in the basin of river Jordan as a synergic action to the "Road Map" plan, the valorization of the water resources in Iraq is of increasing importance since this would avoid questioning again the agreements which have already been made with Syria and Turkey.

On a technical point of view, this translates into an exact evaluation of water availability in Iraq and – together with the plans for the economic and social development which have already been established for the region – into the identification of the optimum criteria for the multiple use of the resource, in a view of magnification of the resource and environment protection.

However, in spite of this topic being repeatedly proposed by our media, thinking about water as a mere reason of conflict would be rather inadequate. If we thoroughly look at the historic data, we will find out that - versus some seventy war events whose causes included the control of the water resources (no country has ever declared a war because of water since – in 2500 B.C – the state-towns of Lagash and Umma fought for the control of the Tigris and Euphrates Basin), there are more than 420 agreements for the management of the trans-border resource between states which were historically belligerent[10] (as a whole, including the treaties on navigation, FAO counted – between 805 A.D. and 1984 – some 3600 inter-state agreements relevant to water[11]). Of significance is also the peace agreement signed between Jordan and Israel in 1994, where the parties establish criteria for the withdrawal of water from river Jordan and its tributaries (amongst which Yarmuk). Again as an example, even between the two *Intifada* did water remain the only topic of dialogue between Palestinians and Israelis, and the Joint Water Commission has never stopped meeting for the planning of the use of resources. Finally, since the Madrid conference of 1991, at the very the dawning of the process of peace in Middle East, multilateral work units were set up to support the bilateral ones. In the case of Israel and Palestine, a work group dedicated to the water resources (MWGWR)[12] is still operational and can be credited important results.

Desalination plant in the desert of Negev – Israel

Last not least, the political and economic planning Israel is setting up, aimed at peace and at reducing the tensions due to water demand, with the awareness of the vital importance of water for a final agreement with the Palestinians and of the water demand in an independent state. Israel has planned to compensate its current deficit[13] by purchasing consistent quantities of water from Turkey and transferring them to their shores by sea transport. This solution is not economically or strategically simple. Water would become very expensive, thus affecting the users and –

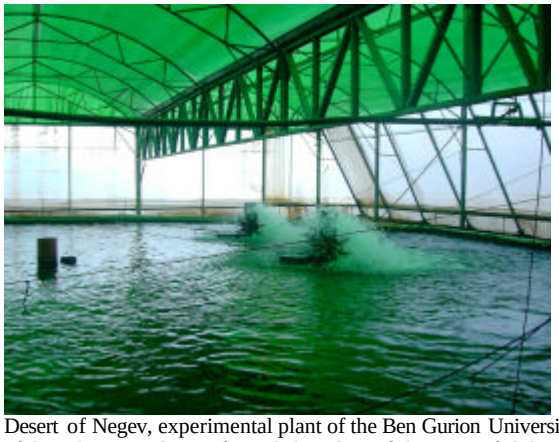
[10] database on the agreements relevant to the international water streams:
International Freshwater Treaties Database at Oregon State University,
http://www.transboundarywaters.orst.edu/projects/internationalDB.html (last access December 1st 2005);
FAO's FAOLEX database, http://faolex.fao.org/faolex/index.htm (last access December 1st 2005).

[11] Worldwatch Institute, 2005. State of the World 2005, Sicurezza Globale, ed. Ambiente.

[12] http://www.exact-me.org (last access December 1st 2005)
J. Keidar, F. Kawash, 2004. Regional water data bank project multilateral working group on water resources, proc. Food Security under water scarcity in the Middle East: problems and solutions, Como 2004, published by CIHEAM/MAIB, Options Mediterraneenes, series A: Mediterranean Seminars, n. 65, ed. Hamdy A., Monti R.

[13] The water resources the territories on the West (left hand) Bank of river Jordan (namely Israel and Palestine) are essentially river Jordan and its main tributaries in the high portion of the basin (upstream the Sea of Galilee) and the two main aquifer systems, on the cost and on the West Bank. As a whole, the resources available on the left-hand bank (Israel and West Bank) are estimated in some 1850 Mm^3 per year versus an overall demand which is greater than 2000 Mm^3 per year (1998). Such demand is consistently increasing because of both the demographic pressure and the increased demand of welfare. This takes the overall deficit of subject region to some 150 Mm^3 per year.

subsequently – the development; on a on a strategic point of view, such economic agreements would make a country whose availability of the resource is already afferent to an international hydrographic basin dependent on one more state.
The other – merely technological - challenges are: cutting freshwater consumption in agriculture down to 33% approximately by 2010[14]; obtaining additional water through the desalinization of sea and brackish water, passing from the current 57Mm^3/year to 362Mm^3/year by 2008 and to 500Mm^3/year by 2010[15]; refilling the water table with treated water to contain the penetration of the salty water[16]; combined cycles of water use for fish breeding and agriculture.




Desert of Negev, experimental plant of the Ben Gurion University. In the photographs, two stages of the consecutive experimental use of the salty groundwater for: 1-la breeding of shrimps, 2-fish breeding, 3-vegetable irrigation, 4-olive tree irrigation.

Cooperation through water

As set forth, of all the environmental resources, water is strategic to sustain the quality and quantity standards of the social and economic conditions in a society and - in several areas – it represents a limiting factor to development. The water resource cannot be left out of consideration in a sound economic and territory planning, because of both the requirement of greater availability and the now incontrovertible need for preservation. Hence importance of the cooperation developed by Hydroaid, which provides a concrete help through both training activities aimed at the technical and management skills of the individuals and interventions in support of management, planning and administration structures of the local and government public institutions.

Managing the water resources is a complex operation which faces a plurality of variables, and these are self-standing though not independent to one another, often even in conflict. For instance, the procurement of drinking water, i.e. at the so-called integrated water service, includes the whole technological cycle of water in urban environment, namely: production of the resource; transport; distribution to the users; collection of the waste water through sewer systems; transport to treatment; treatment; water discharge to the final destination; sometimes also refinement of the

[14] Israeli Water Commission data, 2002: freshwater consumption in agriculture: 1970, 80%; 2000, 50% 2002, 41.4%; 2010, 33.7%.
[15] "The Parliamentary Committee of Inquiry on the Israeli Water Sector, Report headed by MK David Magen, Jerusalem, June 2002"

[16] STATE OF ISRAEL MINISTRY OF NATIONAL INFRASTRUCTURES, 2003: WATER COMMISSION HYDROLOGICAL SERVICE, HYDROLOGICAL YEARBOOK OF ISRAEL 1999/2000, ISSN 0073-4217 JERUSALEM 2003

waste water for use in agriculture, industry or other purposes. Subsequently, the proper operation of the integrated management is to ensure the following:

- Multiple use (irrigation, drinking, industrial), as well as the preservation of the natural eco-systems. Thee reasons, logics and values of such uses are different and must be harmonized and made compatible to the quantity and quality of the resources available;
- Sustainability in the use of the resource. Since limits and vulnerability are now acknowledged, the modalities and criteria of its utilization must ensure renewal.
- Financial and economic effectiveness achieved through a rational programming of all the operations (procurement, withdrawal, distribution, treatment) which allows for the application of tariff systems compatible with the uses;
- Compensation between the areas where water "is" and where it "is consumed" through technical and economic criteria which account for a refund of the environmental costs which affected the former areas;
- Structural and functional efficiency of the Providers in a perspective of safeguarding the general interest of the system and of the different sectors.

In many developing countries, this service is either absent or far from efficient. In these areas – besides its inefficiency – the service is also insufficient to ensure modern development standard: urban centers – even important ones – receive water at a weekly frequency and for a few hours a day, through tank trucks or even in bottles (in Gaza, for example). The cause of such underdevelopment is to be sought both in the natural environment and in the anthropic factor. With particular reference to the Middle East – besides the concurrent causes due to political conditions and war events – the main "anthropic" causes are: the large number of providers which manage the waterworks service and the plurality of subjects providing separate management of the different phases in the technological cycle of water. The tightly sheathed size of such bodies - which are in constant economic crisis and then unable to ensure the system the appropriate management of the works, not to mention their technological and managerial refurbishment - together with the carelessness the *"res publica"* is managed with do not allow for an effective, efficient and economic management of the service as the rules of correct operation would recommend.
This status prevents from setting up programs to face the increasing demand for water, with the subsequent progressive fast exhaustion of the resources in terms of both quality and quantity.

The method of the cooperation offered by Hydroaid is based upon discussing with the local authorities appointed to the management of water and agreeing with them on the steps required to harmonize the different perspectives of development, thus preventing the raising of any future tensions between states and/or activities because of water shortage. In other terms, establishing principles of solidarity at regional level and sharing common criteria to move to a basin scale management which shall enable to detect – through planning and environment impact assessments – the guidelines for the management and safeguard of the water resource; identify the most appropriate activities for a social and economic development compatible to the resources of the territory; coordinate the plurality of conflictual uses of water while respecting the cultural and social differences; achieve a highly efficient integrated water cycle to allow for the recovery of the waste water which would refill the water table; share new technologies and practices for the creation of "new water".
Through its activities, Hydroaid encourages the setting up of distension where there are conflicts connected to the control of the water resource, thus fostering a "fair and reasonable use" of water through methods of integrated approach to the issues of the trans-border waters.

The first element to be considered when approaching the water resource issue is the uniqueness of its system, which – in general terms – goes beyond the administrative and national borders. Because of such uniqueness, unique management policies are to be adopted too, as well as criteria, practices and methods on the whole territory. This would ensure criteria of compensation,

redistribution, planning of the use of resources and harmonization of the conflicts relevant to the different uses. In other words, adopting criteria of integrated management of the resources at basin scale to make it efficient with the resources available. A first interesting step to be undertaken is certainly the monitoring of the resources and of the territory which – suitably combined with the development expectations of the region – enables to trace the guidelines for a correct planning of the use of the resources, which shall then be implemented and managed on the field by the local authorities. Generally, a technical intervention of planning is appreciated when the political framework is clear and consolidated. On the contrary, in case of conflict situations and different potential beneficiaries, the planning process becomes difficult and delicate. At this stage, the international cooperation is even more significant, since it ensures multilateral coordination, juridical objectivity and technical neutrality, as it is required for the management of the plurality of interests involved.

In this context, Italy may provide a significant contribution to the international community thanks to its geographic and climate variety and all the issues which ensue from it and because and of its raising environment awareness after the sudden industrial development at the end of World War II. Furthermore, Italy plays a fundamental role of cultural intermediation as related to the water issues since its national territory encompasses aspects which are typical of both the Northern and Southern countries, such as flooding, drought and desertification. On a technical point of view, the difficult water issues at worldwide level which are today debated were dealt with at national scale at the end of World War II in order to bridge the gap between the North and South of the country. The implementation of huge water facilities led to hydraulic emancipation in Southern Italy. Besides the activities and studies for the safeguard of human life and of the environment, the effort of Italy also aims at the implementation of a concrete set of planning actions for the hydraulic defense of the territory and management of the water resource. The planning activities are committed by law 183/89 to basin Authorities, whilst the Regional Councils are appointed to the management and scheduling of such actions. Amongst them, the drafting of a Water Safeguard Plan, to be integrated with the planning at hydrographic basin scale. Such plans and actions are bound to mark a first significant pulse towards a planning and management of the water resource which joins - for the first time - the quality and quantity aspects. Such model for water management awakes remarkable interest in all those countries which are about to approach the planning for the use of the resources and to establish the guidelines for an eco-efficient development of the social and economic context.

In countries affected by serious shortage (such as the Middle East, where some states have been characterized by a WSI lower than 500m^3/per head per year), saving policies are to be taken into consideration through targeted management plans and the implementation of an integrated method which would alleviate such shortage while enabling the development of the region. To date – with the sole exception of Israel – the consumption of water for agricultural activities is close to 90% and the leakages in the extraction and distribution processes are greater than 30%. In this case as well, Italy could take the interesting experience which is being developed after the approval of the Galli law (36/94), with the concrete implementation of a rationalization program of the integrated water services.

In the end, valorizing the technical and management capabilities of those individuals who are appointed to the management of the water system is an always winning strategy. This essentially translates into a transfer of a know-how whose primary objective is the optimization and reorganization of the local institutions for the efficiency and competitiveness of the service providers.