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# Some remarks about water resources

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Abstract : The growing concern about future satisfaction of water needs is legitimate. One can nevertheless wonder if the indicators used by water resources managers fit well their object, what is exactly the content of the "water resource" concept, first introduced by the end of the XIXth century, and if this concept is well adapted. We would like here to demonstrate that the water resources, or rather the water social usefulness, cannot be identified with water flows.

More often in fact "water resource" is considered as a volume or a discharge. Looking at the diverse phases of the water cycle as only water reservoirs containing a resource which could be used at will, seems to be a rather poor and even counter-productive view, as well from a scientific point of view than from a social point of view. One should recognize, for example, that a river, but also a lake of a groundwater sheet is not only a reservoir of available water, but has many others usefulness such as diluting, draining off and purificating some of our wastes. Rivers also play a prominent role for transportation and recreation. Water is also an important factor for all terrestrial, aquatic, estuarine and marine ecosystems, which offer many energy (hydropower, power plants cooling), mineral (gravels) and biological (fishing) resources, these ecosystems being both irrigated and drained by water flows. Downstream, on the contrary of what many politicians, an sometimes engineers, say, water flowing to the sea is not lost or wasted, draining the continents which would otherwise suffer from some kind of anuria, and feeds the very productive coastal ecosystems.

Very often the ecological and social value of hydrological regimes, which are the patterns of discharge variations along time, is neglected. If it is obviously necessary to take care of human lives and properties, one should recognize that low flows, but also floods and inundations play a prominent role in the life of river-dependant ecosystems. Floods and inundations also play, especially in arid zone, an important role to recharge groundwater bodies and so to regenerate potentially usable water reservoirs.

These few remarks are relative to fundamental problems that water management should not ignore, especially in the perspective of a global sustainable development, which cannot be built on the systematic drying up of rivers and groundwaters as it seems to become too often the rule. These problems should find their place in all prospective studies concerning the water future.