Focus 52 – A European water partnership with South Asia

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28 April 2020 - ISSN NUMBER: 2406-5633

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Abstract

Water in South Asia has been a recurrent central topic in SADF activities nearly from its creation. Among various other initiatives, SADF organised in September 2013 and in partnership with the Konrad Adenauer Stiftung a conference in Brussels dedicated to the issue. A special session on water management in Goa was organised in May 2018 in partnership with the Regional Science Association International. Many works were produced – including a full book in its series 'South Asian Contemporary Studies' published by Springer.

European institutions have developed important initiatives on water management – for example the 'water framework directive' – and in 2016 a water partnership with India was promoted. Some attention has also been paid to some other critical situations of Himalayan-originated water basins, such as the Aral Sea crisis or the Mekong River.

Still, there is a prevailing lack of understanding and political relevance given to the issue of water management in South Asia and elsewhere. This surfaced in the European declaration on the recently celebrated water day (22 of March), which oddly opens with considerations on the present pandemics and continuously downgrades the importance of water management, as if water could be thought as a mere chapter of the 'climate urgency'.

Actually, water has ceased to be an issue solely dependent of climate many thousands of years ago and to tone it down as a mere consequence of 'climate change' is a disservice to an understanding of the challenges we are confronted with.

In the name of a new 'urgency', most basic historical facts that have conditioned human relations with water have been forgotten or downplayed. It is therefore necessary to have

them in mind when looking at the challenges posed to the World's most important water basins, those originating in the Himalaya Mountainous system.

The two main Himalayan water basins running towards South Asia are the Indus, home to around 300 million people, and the Ganges-Brahmaputra-Meghna rivers basin where an estimated 630 million people live. Although some of the regions covered by these basins are in China, the vast majority of the population residing within these basins belongs to South Asian countries – in fact we can say that over half the population of South Asia lives in these two basins. Only two members of South Asia Association for Regional Cooperation (SAARC), the islands of Sri Lanka and the Maldives, have no connection with them.

The comparison of Europe and South Asia on water issues enhances the potential for Euro-South-Asian cooperation in water governance as regards the immediate issues at stake in the water-land-food-energy-urbanisation system of connections. Other less direct issues include potential climate impacts of greenhouse gases resulting from water mismanagement.

This is the basis for our proposal on water cooperation in the following years.

I. Water challenges

1. Pre-modern history

Well-documented changes in our planet's climate have deeply moulded its life as well as water distribution. During the Upper Palaeolithic mankind had to cope with a massive sea level rise that exceeded a hundred meters in the course of a few thousands of years, accompanied by dramatic changes in flora and fauna and by even more unstable rain patterns. Still, even during these times of dramatic adjustments associated with climate change, humanity continued its vast impact on climate, namely through deforestation.

With the Neolithic agricultural revolution we witnessed the birth of mass irrigation, that is, human control on water making it possible to intensively farm lands and allowing for urban concentrations. The ancient civilisations of the Fertile Crescent, Indus or the Yellow River developed on the basis of irrigation that also worked as a flood control mechanism.

The main problem posed by such irrigation has been the salinization of soils. Salinization is a natural process ultimately caused by water erosion dissolving salts which are widespread in the planet's soils. The salinity of oceans proves how powerful the phenomenon is. The main variable that dictates salt concentration is water evaporation, which crucially depends on the amount of heat.

The warmest the climate and the scarcest the water pool, the more acute the salinization process will be. Erroneous techniques of irrigation such as flooding land under the full-height of the Sun can exacerbate the problem. The process is also intensified when subterranean water is used, since subterranean water is normally used several times through the irrigation process, accumulating salt in each cycle.

Salinization has been so important as to be considered as an environmental factor leading to the crumbling of such an Ancient civilization as Mesopotamia. Other than irrigation, flood and drought control, humanity's domestication of water was also important for providing water to domestic use – the Roman aqueducts are a testimony of this fact that survived to our day – for navigation purposes, for energy, as water mills, or as dikes for land protection.

2. Persistence of old challenges in modern times

All these ancient water domestication techniques were developed and enlarged in modern times. However, the lessons left by history on the drawbacks of this domestication were not always learned.

The concentration of salt on agricultural lands due to erroneous irrigation, storing and pumping practices – transforming even the most productive soils into deserts – which have been going on for thousands of years continued unabated to our day, as humanity seems oblivious of the disastrous impacts the practice.

The process continuously affects an immense agricultural area around the World. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) 2018 assessment report on land degradation and restoration tells us that:

'The global areal extent of all salt-affected soils, most of which are naturally salty, is about 1 billion ha, occurring in about 100 countries (Table 4.7). Irrigated land damaged by salinization is estimated globally to be 60 million ha: in India (20 million ha), China (7 million ha), the USA (5.2 million ha) and Pakistan (3.2 million ha), also in Afghanistan, Egypt, Iraq, Kazakhstan, Turkmenistan, Mexico, Syria and Turkey.' (p.241).

Other than affecting food quality and food availability, and causing general environmental degradation – including a failure to absorb carbon dioxide – the salinization process also deprives large parts of humanity of access to proper drinking water. Whereas this contamination (normally acting together with other mineral substances as arsenic, fluorides, nitrates, etc.) sporadically reaches news heights in the developed World, it is endemic in several areas, as in the Ganges, Brahmaputra delta and the lower Indus valley - this also as a consequence of seawater infiltration which is itself caused to a large extent by erroneous pumping and irrigation techniques.

This situation constitutes a direct "health hazard" as well, as the salinization process forces the population to drink water contaminated by salts and other substances.

Even in areas that are by nature not particularly exposed to the salinization process, due to the water precipitation patterns and soil characteristics, salt became a major water pollutant through its widespread use as a defrosting substance.

Other than the use of salt as a widespread de-icing tool, the drainage of swamps, ponds and other wetland areas and the waterproofing of soil which eradicates vegetation also contribute to the concentration of salt and other pollutants in water resources.

3. Pollution and green-house gas emissions

The modern era added to salt pollution challenges a great variety of other pollutants, starting with inorganic fertilizers widely used in agriculture. The production of food, drink, energy or urban and industrial use of water are close competitors. Regarding the impact of

the 'old' and the 'new' age sort of pollutants, an Australian sustainable technologies company explains in simple terms the advantages of considering them together:

'Our reading of the current literature indicates a failure to understand the water dynamic. Salinity and pollution are connected by a fundamental truism that does not seem to emerge in the literature which is that the more water travels through ground - the more salt it picks up as it will dissolve anything that is soluble and salts are by definition soluble. The more it travels through built up areas the more soluble pollution it can gather. The faster it travels the more energy it has to carry mud, silt and macro pollution.'

This is a crucial reason why salinization should be seen in the wider context of water pollution. For example, desalination became a widespread method of reclaiming seawater for human use allowing human presence and urban concentrations, which would not be possible otherwise. This process has further implications in terms of energy. Desalinization is now also applied to water salinized by irrigation used in agriculture, in California (US) or in Mexico. This is a process that will have to be considered in Southern Asia and Southern Europe as well.

What I have been calling 'climate monomania' has induced a severe disregard for human impacts on the environment, namely through anthropomorphic water pollution. As I stressed before (Casaca, 2020) the essential logic of the pollution impact is inversed in the official doctrine by presenting pollution as 'exacerbating' the impacts of warming, instead of presenting warming as 'exacerbating' the impacts of pollution.

There is a chronic lack of attention paid to the impact that the introduction of inorganic fertilisers in the agricultural cycle has over the emission of greenhouse gases (Casaca, 2020). The desertification brought by salinization processes also decreases the use of carbon dioxide in the atmosphere by vegetation, a phenomenon which has not been properly taken into account.

The crucial impact of water management in greenhouse gas emissions and capture might actually be of primary order, as estimated by recent studies (Casaca, 2020). Its downplaying in the name of 'climate change urgency' may, paradoxically, result in major – and unattended - global warming.

II. Cooperation on water policies

1. Europe

A. Water framework directive

The European water framework directive (first edition) will soon celebrate its twentieth anniversary. It is a European landmark that combined a quarter of century of water legislative initiatives and superseded some other developments, namely the groundwater directive. It gives particular attention to nitrate pollution – dealt with by a specific directive within the framework. However, it has not been substantially modernised of late and, from its inception, it does not consider the issue of salinization in a proportional manner.

Even after its latest amendment in 2015, the European drinking water directive does not address maximum levels of salt in drinking water. Salt is hardly mentioned in European legislation or reports on its implementation, for instance either in the Common Agricultural Policy (CAP) or on legislation regarding groundwater[1] quality. The idea present in these documents that salt pollution in European waters is only a problem of seawater intrusion flies in the face of the most obvious evidence, and can only be understood in relation to another patently incorrect notion widespread in public opinion which sees water salinization as a consequence of rising sea levels, instead of as a consequence of erroneous fresh-water management.

The issue, particularly alarming and urgent in Southern Europe, is also important elsewhere as a consequence of the use of salt for de-frosting or because of industrial pollution, as is the case for instance of the Werra river in Thuringia.

The importance of salt in water pollution in Europe is not properly taken in consideration. Furthermore, as we mentioned in the previous point, it does not make sense to consider the monitoring of salt pollution apart from other sorts of pollution, like that generated by nitrates.

As a former Member of the European Parliament that ended his mandate in 2009, I was well aware of the urgency of a comprehensive reshuffle of the water framework directive so as to give the appropriate importance to salt pollution in Europe. More than a decade afterward, I feel this to be even more so.

B. International cooperation on water

[1] For instance, the statement on this document of absence of risk of salt contamination in the Portuguese ground water basins (p. 24) was already blatantly false at this time.

One of the crucial aspects of the water framework directive is the clout it gives to the management based on water basins, which makes much sense from a hydrological perspective and is fully in line with the European integration transnational perspective.

European cooperation on water management based on river basins is not as famous as the cooperation on coal and steel which gave birth to the first European transnational integration process, but it is no less impressive and full of lessons that can be followed elsewhere in the World, South Asia included.

Transnational water cooperation on the basis of the management by river basins is undoubtedly a great European achievement, and one European institutions should use in the international arena.

In 2003, the European Commission published 'Water for Life, EU water initiative, International Cooperation from Knowledge to Action' (Luxembourg: Office for Official Publications of the European Communities, 2003 ISBN: 92-894-4901-2 © European Communities, 2003) whose implicit intention is exactly to build on the Rio spirit, the water framework directive and its own rich cooperation history as a major soft power tool.

The document gives more attention to the salinization process than is traditional in European documents. It mentions its historical importance, verses on some Central Asian countries as well as on the invasion of sea water due to irrigation; however, it otherwise fails to produce a comprehensive European water cooperation strategy.

The attention to salinization that surfaced in the 2003 Commission paper was short-lived and the European Union has lately insisted in the denial of the importance of salinization. According to the EEAS website, the European Union position on the Aral Sea disappearance held in the Green Central Asia Conference that took place in Berlin on 28 January 2020 is as follows:

'Climate change has already hit hard in Central Asia. Over the past three decades, average annual temperatures in the region rose by 0.5 degrees Celsius, causing droughts and water scarcity that have disrupted entire ecosystems. The most dramatic example is the Aral Sea, once the world's fourth largest lake, now vanished off the face of the Earth.'

The Aral Sea, as well as several other salt lakes of its kind such as Lake Poopó in Bolivia or Lake Urmia in Iran have died due to erroneous water management based on mass-irrigation, not because of 'global warming'.

The European Union is making a great disservice to the global environment and to itself by endorsing the unfounded claim that these catastrophes are not due to erroneous water management but to climate change.

2. South Asia

A. Himalaya's context

The Himalaya's water basins (p. 72) are estimated to be the home to 1.3 billion people and supply over 3 billion people with water, energy and food, which makes this easily the most important water basin system in the world. These water basins also present the most massive problems of water pollution around the World.

China controls most of the upper-systems of these basins. According to David J Devlaeminck of the University of Chonqing: 'In 1997 the UN General Assembly voted on the UN Convention on the Law of the Non-navigational Uses of International Watercourses, (UNWC) which, after ratification by Vietnam, came into force in 2014. China, citing a lack of consensus, the need for a focus on sovereignty, disapproval of various dispute settlement mechanisms and an imbalance in the rules of the Convention, was one of three countries that voted against it.'

According to this Chinese academic, one cannot say that there is a lack of commitment from China on shared management since China would support the principle of 'reciprocity' on water basins. As water does not follow this reciprocity, that is, it normally flows in a single direction, which in this case is from China to neighbouring countries, it is difficult to see how this reciprocity principle is supposed to work.

In the words used by Mr Devlaeminck, it is necessary to '[integrate] Climate & Water Diplomacy For Rivers', quoting Blumstein to defend '3 reasons for stronger integration of climate policy & water instruments'.

What Ms Blumstein calls 'integration of climate & water' shall better be understood as the rhetorical effort to reduce water scarcity to a consequence of climate change. This, as we have seen, was converted into official European doctrine.

It is necessary to understand that, before intruding in the European legal setup, this has been for a long time the Chinese doctrine on the issue. Whoever consults the immense array of publications issued on the last 15 years on the issue of 'Climate Change' versus 'Water Resources' in China, will see most of them highlighting the impact of climate change on

water resources and downplaying the real issue, which is the impact of water overuse by China on the global environment, and on the countries situated downstream.

China is acting on inland waters the same way it is acting on off-shore waters, that is, the South China Sea: by annexing them unilaterally.

This implies that any real effort of cooperation on the Himalayan's water basins must start by pressing China to fully cooperate in its management according to equitable, international rules, the only way for the same logic to apply downstream.

B. South Asian water cooperation

South Asian Contemporary Studies series book published in 2020 (p.12) summarises four basic ideas for Water Cooperation within South Asia:

'First, the assumption of riparian rights to water, sediments and life, detailed by agreement regarding quantity, quality, seasonality and flood control aiming at the sustainable development of each one and all the river basins.

Second, the need to avoid the free access to underground water, which abuse can lead to the decrease of the water table and to drastic water shortages.

Third, the researchers has to come-up with a package of crop-production practices and technologies that are less water intensive.

Finally, the sharing of data/information between governments, and between governments, civil society and researchers, might be helpful to think, design and implement measures for a more sustainable use of water for the peoples and places of South Asia.'

The ideal scenario, however, is to develop existent Indian-European cooperation into an initiative that may take hold on the whole of South Asia, organised within the South Asia Association for Regional Cooperation or indeed in one of the forms of sub-regional cooperation taking shape in the area such as the India-Bangladesh-Myanmar triangle.

3. Europe-India joint water initiative

On March 2016, the Republic of India and the European Union agreed on a joint declaration on an India-EU water partnership (IEWP). A joint publication from 2019 signed by the Delegation of the European Union to India and Bhutan and the Ministry of Water Resources, River Development and Ganga Rejuvenation with the support of the

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH makes the state of play of the partnership.

In 2017, nine priority areas were defined: (1) Sustainable River Basin Management; (2) Environmental Flows; (3) Ganga Rejuvenation; (4) Groundwater Use; (5) Water Use in Irrigation; (6) Solar Pumping for Irrigation; (7) Capacity Building; (8) Treated Water Reuse and (9) Research, Innovation, Technology.

In this context the document indicates that 'A Tapi River Basin Management Plan is being developed on a pilot basis by blending EU good practices with Indian approaches. The approach is fully aligned with the principles of the River Basin Management Cycle that guides the integrated management of rivers in the EU.'

Regarding salinization, the document only points out to the situation in relation to the use of groundwater in India: 'In terms of groundwater quality, salinization of groundwater is more common in the coastal tracts of the country. Inland salinity in groundwater is prevalent in the arid and semi-arid regions of Rajasthan, Haryana, Punjab, Gujarat, Uttar Pradesh, Delhi, Andhra Pradesh, Maharashtra, Karnataka and Tamil Nadu. Several places in Rajasthan and southern Haryana have salt concentrations in groundwater so high that the groundwater is non-potable. High concentrations of fluoride, arsenic, iron and heavy metals in groundwater samples are observed in isolated pockets of the country.'

The document shows a high-level effort of cooperation achieved in water management that certainly deserves to be deepened, strengthened, continued and taken as an example for other Southern Asian countries.

III. A common initiative on water

Europe needs to recover the original attention it provided to water and water cooperation. The water framework directive needs to be reshuffled and reorganised in three complementary directions: (1) to impart salinization with the attention corresponding to its utmost importance; (2) to rationalise its architecture and foresee more efficient ways of monitoring and (3) to further promote research on the recent findings pointing for water-related pollution through inorganic fertilisation, salinization and other forms of pollution, and to its role as the most crucial factor in greenhouse gas emissions.

Europe needs to understand the international and geopolitical significance of water and vehemently combat the un-scientific attempts to downplay the crucial importance of water

management for the protection of human livelihoods and the environment, including here atmospheric emissions.

The India European Union Water Partnership has been a great success and the European Union should think of ways to reinforce it in the next few years, possibly extending it in regional or sub-regional terms and to propose such partnerships elsewhere in the world.

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