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## Some Conceptual Issues Regarding the Study of Inter-state Relationships in River Basins

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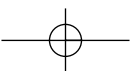
The issue that will define the future of the River Nile and thus the region as a whole remains: under what circumstances would sovereign states – some water rich and other water poor, some upstream powers and other downstream powers – voluntarily agree to manage their shared water resources for the greater good of all the states and all the inhabitants of the basin?

The problem of the Nile is also related to the general question of how to share common resources in an optimal way. This question of global relevance has given impetus to an extensive literature and a number of influential analytical models for understanding collective-action problems in river basins all over the world.<sup>1</sup> We will discuss some of these models from a Nile basin perspective, and show that they neglect a crucial issue; they overlook the ways in which the specific physical characteristics of river basins frame human action, and how important it is to understand the relationship between water systems, river control, and social and economic development and development patterns.

### DOGMAS OF WAR, PEACE AND INTERNATIONAL WATERS

Since the 1980s – when Egypt's foreign minister, Boutros Boutros-Ghali, predicted that the next war in the Middle East would be fought over water, and the vice-president of the World Bank, Ismail Serageldin, said that 'the wars of the next century' would 'be about water' – a number of scenarios have foreseen water wars as a feature of geopolitical power struggles. Water scarcity is bound to lead to war, it is said, because water is absolutely essential to human life.<sup>2</sup>

The general 'theory' of 'water war' can be criticized on two grounds. Firstly, it can be described as a mechanical misunderstanding of the relations between resource scarcity and conflict, and between climatic change (predictions) and the form of social and political adaptations. Secondly, very few examples can substantiate the hypothesis and quite a number of cases can falsify it. But although the





alarmist 'water war' dogma must be rejected, there have indeed been water wars in the past, including in the Nile basin, and armed conflict over how to control and share the Nile cannot be ruled out.

A competing theory has recently become popular: that instead of leading to war, water will fuel greater interdependence among states, and that 'water and river basins are [therefore] pathways to peace'.<sup>3</sup> Coming together to manage shared water resources will prevent conflict and build trust even in otherwise conflict-ridden areas. This reassuring argument refers to 'historical lessons': interstate war is unlikely, it is said, because for thousands of years there have in fact been no wars specifically over water resources, and the evidence shows that water interdependence does not lead to war. The real problem, according to this way of reasoning, is that the provocative rhetoric that politicians aim at their own constituencies can antagonize their neighbours.

There are at least three fundamental problems with such generalizations. They evoke 'historical lessons' that for historical-philosophical reasons cannot be drawn and that are therefore no guide for how states and others will act in the future. The past cannot in this way predict the future, especially at a time when unprecedented technological ability to control water has coincided with uncertainty about future climate and water landscapes, thus fuelling distrust and competition, and also underlining the need for cooperation. Problematically imprecise definitions of 'cooperation' and 'conflict' must be questioned when, if only owing to cost, initiatives to cooperate will always outnumber instances of war. But although water as a 'pathway to peace' is a simplistic slogan, the challenges of optimal water planning have brought some of the world's most implacable enemies to the negotiation table and led to agreements and institutions that survived strained relations.

For the Nile countries both options have been available and continue to be available, and the Nile issue will never be settled once and for all: the Nile waters might become a pathway to peace or a currency of war, or both, at different historical junctures.

### THE 'TRAGEDY OF THE COMMONS'

What guidance can general theories of optimal resource management give us for future developments? One very famous model invoked to explain behaviour and solve problems related to the management of shared resources is the one developed by Garret Hardin, often condensed as the 'tragedy of the commons'.<sup>4</sup> This theory is exemplified by a certain type of physical space: a pasture shared by herders, each of whom wishes to maximize his yield; each additional animal has both a positive and negative effect as the herder gets a higher return, but the pasture is degraded. By 'the remorseless working of things', the actions of self-interested individuals do not promote the public good. Hardin writes: 'Therein is the tragedy. Each man is locked into a system that [causes] him to

increase his herd without a limit – in a world that is limited ... Freedom in a commons brings ruin to all.<sup>5</sup> Based on this simple idea, grand models of human action and social development have been formulated. To this very influential paradigm two main objections may, however, be raised: Hardin's general argument of the 'remorseless working of things' is not working the same way in relation to rivers and their waters as in relation to pastures.<sup>6</sup>

A pasture, as a physical space in nature and thus also as a resource, is fundamentally different from a river. The perceived model pasture is ecologically quite uniform, as are the economic activities, adaptation mechanisms and strategic choices of the actors sharing it. Most rivers, and even more so long rivers – in particular a river such as the Nile, which traverses three climatic zones from tropical Africa through the Sahara to the Mediterranean, one-tenth of the continent – are ecologically extremely varied, and lend themselves to differing strategic choices and economic adaptations at various points along their courses. Importantly, in such physical and social circumstances these need not conflict with those of other users, or the character of the conflict and the potential for cooperation and collective action might be different.<sup>7</sup>

The theoretical configuration associated with the pasture ecology will therefore not be reproduced in the context of a river basin, owing to its physiography, topography and the consequent unequal structural position of actors in relation to the resource. One riparian can use or even control the river to maximize yield without negatively impacting other users or the river itself. That Egypt, for example, exploited the river for thousands of years had no effect on the areas that make up present-day Kenya or Tanzania, and the country's extensive exploitation even since the 1970s has been of negligible importance for the lack of Nile development in many of these countries.<sup>8</sup> In river basins, moreover, pursuit of self-interest upstream can *benefit* downstream users. A hydroelectric dam, for example, might in certain hydrological settings protect downriver areas against flood and reduce silting, when that is considered a problem. The Roseires Dam in the Sudan would have had very negative effects in Egypt had it been built during those millennia when seasonal flood irrigation dominated Egyptian agriculture, but after 1971, when the Aswan Dam was put into operation, Roseires' benefits outweighed by far the disadvantages (it has trapped Blue Nile silt, thus protecting the Aswan reservoir against siltation) in Egypt. If Ethiopia decides to build more dams on one of the Blue Nile tributaries, the flow of the Nile might be reduced in Egypt, but it will also reduce the amount of silt in the river that is currently threatening the downstream reservoirs with destruction. These might be examples of how the natural domain and rights domain of resources alter with time, technological change, and the circumstances of stakeholders. Rivers thus fulfil different demands or needs at different places, and it is this natural character that can encourage cooperative action as rational individual behaviour.

Rivers, it should furthermore be recalled, unlike the pasture in Hardin's model, change (in some cases also dramatically) and will always do so, not only as a result



of human interference but also as a consequence of changes in rainfall patterns, atmospheric pressure and so forth. Permanent insecurity and endless fluctuation guarantee that an individual (or state), acting rationally to maximize yield, will try to cooperate to achieve common control of the river because these changes, the scale of the uncertainty and the magnitude of the task make it impossible to do so alone. This physical world thus introduces social science theory and management models to a set of variables that should not be overlooked.

The 'tragedy of the commons' model fails to take account of power relations reflecting and stemming from what always has to be different positions within a physical location such as a river basin. Problematic in the case of the hypothetical pasture, this omission of power is unrealistic when considering large river basins and the management of watercourses traversing several countries and climatic zones. In such enormous physical spaces, people have developed a wide variety of resource adaptations. Actors share the same resource – the river – but most often they tend to conceive of themselves as living in different 'water worlds'. The classic dilemma of a dominant individual incentive that creates a suboptimal social equilibrium will therefore not naturally emerge in river basins, where moreover (and paradoxically only in a literal sense) the resource both varies widely from place to place and is still always the same.

Societies along the Nile are neither equally capable of harming their common resource nor equally likely to suffer the consequences of others' behaviour, not only because some live upstream and others downstream, but also because individual action need not negatively affect other actors (although this of course may happen, and very deliberately so). Differing technological capabilities and other social factors, as well as physical location along the river, affect ability to participate in collective action. In a river basin the distribution of both benefits and costs is decidedly biased, and it will continue to be so as long as people live where they live because these places will be influenced by the river's physiography, hydrology, topography and longitudinal profile. Trans-boundary watercourses do not constitute common pool resources that can be exploited jointly and simultaneously, and thus the 'tragedy of the commons' proposition is unsuitable.

Application of Hardin's model in river basins will tend to downplay the possibility and reality of sincere cooperative efforts and cooperative opportunities, opportunities made possible and continuously reproduced by the river due to its physical nature. It might also tend to downplay the extent to which river waters may be used to establish an enforced and willed 'tragedy of the commons'. Individual actors' power over river water may exert much more political power than individual actors' power over pastures, due to the enormous importance of river waters in many societies (not only where the resource is scarce) and because of their physical character. The model will also tend to support the conventional wisdom that water resources, such as the pasture, must be managed as one resource, or on a basin-wide scale, devaluing the importance of the fact that spatial discrepancy between benefits and costs of cooperation at the basin scale may



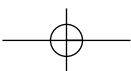
be so great that other scales should be advanced in order to offset this discrepancy.

### COLLECTIVE ACTION THEORIES

The theory of collective action holds that when rational individual behaviour and companies' profit-seeking fail to provide public goods, the common or shared interest of a group might enable collective action.<sup>9</sup> A number of formal theories and models treat collectivities rather than individuals as units of analysis.<sup>10</sup> Mancur Ohlson's famous model of the 'rational' individual questioned this willingness to cooperate. He argued that for all types of social activity, when people can benefit from cooperation without contributing to it, they will do so. Since, by Ohlson's definition, a 'collective good' is one that, if provided to one member of a group, cannot be withheld from any other,<sup>11</sup> it follows that collective action is 'irrational', and the bigger the group, the more irrational collective action becomes. Therefore, what needs explanation within this way of thinking is collective action, not collective inaction, which will be regarded as natural. This premise has been important in theorizing about why some 'public goods' need to be provided coercively through the political system. There is of course a very voluminous literature discussing Ohlson's theories. Our modest point here is only to situate this model of social action within the geographical and physical constraints and potentials of a river basin – far from the perfect market mechanisms.

When analysing collective action in river basins in general and in the Nile basin in particular these abstract and generalized models show their limitations. One reason is that because, throughout history, the Nile's physical character has continually created widely different possibilities for human adaptation and action along its course, the physical context cannot and should not be compared to the abstract context or idea of a market. If the ten riparian states are regarded as a group, the issue of the 'free rider' does not arise since benefits and costs are not allocated by market forces, but are partially affected by factors that individuals can neither create nor control, including the physical character of the river, the history of the river and river control works in each country, and the existence and relative importance of other water resources that can be exploited by the same actors. A lack of collective action among actors in such contexts is thus very natural, but cannot be explained by social facts alone or by this way of reasoning about the free-rider argument: that one or some of the riparian countries' are benefiting without contributing.<sup>12</sup> It is possible to analyse the problem of collective action in the Nile basin as if the physical and historical context and scale do not matter, but it is not analytically advisable to do so.

Theories about problems of collective action all share the idea that excluding non-contributors to a collective benefit is a major cost. They differ, however, over the cost or difficulty of devising physical or institutional means to exclude others.



But what the river basin context makes clear is that some of these differences stem from the physical ‘water world’ itself. General models of collective action derived from abstract notions of the market cannot explain or accommodate the conceptual differences and conflicts that develop in a river basin, which are based not only on changeable social variables but also on fixed geographical positions, in addition to the fact that the ‘collective good’ is most often exploited sequentially. Behavioural economics has focused attention on the importance of perceptions and perceived risks as critical factors, but not in the context of large-scale river basins. These differences can be compared metaphorically to the philosophy of the Cubist school in art, which holds that observers see the same object differently because they occupy different positions relative to it – from the right, the left, from below or above, and so forth – each standpoint providing a different but perfectly valid view. But in the Nile basin they cannot choose to occupy new positions relative to the Nile, because people live where they live. The Nile, as other objects in nature, exists independently of any theories about it, and continues to influence people’s lives in different ways whether they are aware of it or not. The time sequence in which a problem of action is located must also be important: countries in a large river basin develop differently, and at different times their needs for water will vary considerably, as will their technological and economic capacities to control or use the water resource that is the object of collective action.

Empirical studies show how the competing conceptual constructions adopted by various ‘stakeholders’ reflect the distinct perspectives that different state elites and leading politicians occupy within physical – and socio-historical – locations along the Nile.<sup>13</sup> Such empirical descriptions of differences in approach and conceptualization help us to comprehend the obstacles to resource optimization in river basins. The Nile basin’s intrinsically complex structural attributes have impeded and will continue to impede the search for a cooperative water-use regime. Managerial blueprints or misplaced resentment of ‘free riders’ will confuse the real issues, obstacles and opportunities for both collective action and cooperation (which is not the same thing).

### THE ‘COMMON PROPERTY RESOURCE’ MODEL

‘Common property resource’ has become a very influential term in the international debate about managing resources, including river basins. The model is predicated on certain relations between the spatial domains of resources and their users. Like the ‘Rowland–Ostrom Framework’, this has been suggested as a model for effective, sustainable trans-boundary water management.<sup>14</sup>

The term ‘common property resource’ was popularized by Elinor Ostrom in 1990 to denote natural resources used by many individuals in common.<sup>15</sup> Her point of departure was that such common property resources have long been overexploited and misused by individuals acting in their own interests. The con-

ventional solution to such sustainability problems has been government regulation or privatization. Ostrom argued a third way: durable cooperative institutions organized and governed by resource users themselves. The central question that arises is therefore how a group of principals who are in an interdependent situation organize and govern themselves to obtain continuing joint benefits when all face temptations to free-ride, shirk, or otherwise act opportunistically.

The 'design principles' needed for a stable 'common property resource' arrangement and to foster contingent self-commitment of members,<sup>16</sup> according to this model, are clearly defined boundaries; congruence between appropriation and provision rules, and local conditions; arrangements for most appropriators to take part in the decision-making process; effective monitors accountable to the appropriators; graduated sanctions for appropriators who do not respect the rules; conflict-resolution mechanisms that are cheap and easily accessible; government recognition of rights to organize; and, in cases of larger common property resources, multiple layers of enterprises, with small, local organizations at their base.

There are problems with this concept's applicability to river basins in general and to the Nile basin in particular. The Nile, like other large basins, has unclear physical boundaries, and these are often thus areas of social and political contention. If, for example, upstream countries develop rain-based agriculture within the watershed instead of irrigated agriculture, to what extent should the amount of rainfall falling in this part of the watershed be considered part of the available sharable water in the Nile basin as a whole? A more controversial question is whether the waters of the Nile can and ought to be pumped outside the river basin itself. In upstream countries, Egypt has been accused of doing this by bringing Nile water to Sinai and the New Valley project, and Egypt has objected to Tanzania pumping water from Lake Victoria to Shinianga. And in Ethiopia, the authorities have for a long time discussed plans for sending water in tunnels to dry, drought-prone areas. Because of the physical character of water, and the fact that the boundaries of a river basin are always in flux, this whole issue of 'clearly defined boundaries' creates a divisive element. Furthermore, excluding users is extremely difficult, if not impossible, because of the special challenges related to water control, and in any case water transfer from one basin to another is already common.<sup>17</sup>

Ostrom's design principles pose other problems. Although the congruence issue is at the very heart of the whole Nile problem, correspondence between appropriation and provision rules and local conditions is difficult to achieve. Local conditions cannot be reduced to social or economic issues alone, although such differences may be extreme in large river basins, but must take account also of physical differences in the watercourse itself and of its environment. The decision-making process must be complicated when ten countries share a resource, but have different interests in the process or its outcome. Effective monitoring is also problematic; hydrological data are regarded in some cases as state secrets, and

instead of forming a basis for cooperation are part of the problem that cooperation should solve. Cheap and effective systems of conflict resolution will be difficult to establish and maintain, owing to geographical distance, political atmosphere and cultural differences. In suggesting that the Rowland–Ostrom model be applied globally, the author states: ‘The most critical and difficult part of the first step is for people who share a common pool water resource to agree that a crisis situation exists’. But on a river such as the Nile, almost 7,000 km long, this is most unlikely, unless the crisis is defined upstream and has clear and immediate downstream consequences (for the waters take many months to flow from Lake Victoria to Egypt).

Such models disregard the spatial and physical dimension that any solution to water management problems, and their social consequences, must address. People will interpret them very differently, while such general concepts create the impression that there exists a kind of blueprint for solving complicated issues. Such models also make the recent history of the Nile basin unintelligible. An alternative framework is needed with a much greater emphasis on how to understand collective action theoretically and conceptually, and on what has been focused on in this book: how patterns of action will vary according to physical characteristics and the technical, social, economic, environmental and institutional history of this particular river basin.

This book has described some of these conditions prevailing in the Nile basin, highlighting some structural and historical contexts for current Nile diplomacy and policies. These contexts are also in a flux, like the river itself. It has been supposed, for example, that the costliness of separate storage facilities will encourage countries to cooperate.<sup>18</sup> This argument rests on assumptions about the power and almost monopoly of the World Bank in financing such projects. The World Bank’s requirement for funding has been that other stakeholders in the basin should not object to the project in question. Foreign investments for the development of the Nile waters have therefore been difficult to achieve, not least since the downstream riparian states have maintained the right to veto projects envisaged by upstream states. States in the basin have therefore tried to bypass the World Bank, and time and again they have succeeded. Separate storage facilities financed by institutions other than the World Bank have been quite common from the very ‘beginning’ of the post-colonial period. The High Dam at Aswan that the World Bank, under the leadership of Eugene Black, strongly wished to fund in the early 1950s was eventually financed by Moscow.<sup>19</sup> Building a dam, the highest in Africa, on the Tekezze (Atbara), with financial and technical support mainly from China, is making Ethiopia more independent from other basin states than it was before China entered the African theatre. Tanzania’s project to pump water from Lake Victoria has been financed from other sources than those coming from the World Bank, as has the biggest dam on the Nile, at Merowe in the Sudan. Since there is no international agreement yet to which potential donors or loan-institutions all subscribe, hopes that prohibitive costs might induce cooperation



seem naïve and overlook the new opportunities created by the new economic actors on the world scene.

It has also been argued that cooperation is bound to come about once the Nile basin experiences a crisis serious enough to force the issue.<sup>20</sup> The problem with this prophecy is imagining circumstances that would affect all the countries of the Nile basin in the same way or in a way that the main actors would regard as a crisis, and thus bring them together in joint action. Models based on assumptions that Egypt will or must benefit from future dams upstream (i.e. that in reality there are no conflicting interests when it comes to dam-building upstream) are wrong: whether it does or not depends on the type of dams that are built and their purposes. Dams are forms of structural power that reflect interests; here as elsewhere, control of nature implies power over other human beings.

### CRITICAL 'MASS THEORY' AND THE NILE BASIN INITIATIVE

Critical mass theory may be relevant in highlighting and understanding aspects of contemporary history of Nile cooperation, and especially the role and potentials of basin-wide institutions. According to this way of thinking, what matters is not that everyone benefits, but that there exists a 'critical mass' of highly interested and resourceful people who provide or decide to provide collective benefits for others. Collective action may rest on an initial event of 'joint commitment' to which each participant makes a contribution. The Nile Basin Initiative (NBI), formally launched in February 1999 by the Council of Ministers of Water Affairs of the Nile basin states, the subsequent establishment of the Nile Basin Secretariat at Entebbe in Uganda in 2002, and the Nile Basin Discourse (being a network of civil society organizations from the ten countries of the Nile Basin supported by international donors) may be interpreted in such a way. The NBI is defined as a 'partnership initiated and led by the riparian states of the Nile River through the Council of Ministers of Water Affairs of the Nile Basin states' (Nile Council of Ministers). Its aim is to develop the river 'in a cooperative manner, share substantial socioeconomic benefits, and promote regional peace and security'. The Nile Basin Initiative was based on what, when considered in the long term, can be seen as a 'revolutionary' idea: that the river was a shared treasure of all the basin states, and on NBI's operational design about 'sharing benefits' authorized piecemeal execution of selected water control projects that were jointly sanctioned by the collaborating states. The Subsidiary Action Programs (SAPs) of the NBI should implement joint investment programmes supported by donors with the aim of 'contributing to poverty eradication, promotion of economic development and to reverse environmental degradation in the basin'. In the Nile equatorial lakes sub-region – comprising Kenya, Uganda, Tanzania, DR Congo, Rwanda and Burundi – projects such as the Lakes Edward and Albert Fisheries Pilot Project, and the Mara, Sio–Malaba–Malakisi and Kagera Integrated River Basin Management,

have been developed. Eastern Nile Subsidiary Action Program (ENSAP) focuses on the Nile and its tributaries within the Eastern Nile countries of Egypt, Ethiopia and the Sudan, and encompasses the sub-basins of Baro/Akobo/Sobat, portions of the White Nile, Abay/Blue Nile, Tekezze/Settit/Atbara, and the Main Nile. The Eastern Nile Technical Regional Office, based in Addis Ababa, is the implementing arm of ENSAP. There can be no doubt that as a result of exchange of ideas and propositions in a context of institutionalized collaboration over time, actors involved in the NBI process have to a certain extent become jointly committed, for example, to discuss water-sharing agreements or common water projects, and are thereby obliged, so to speak, to act as if they were a single person. An account of collective action from this perspective has the merit of explaining the fact that those working to develop a river together understand that each can demand corrective action of another, acting in ways perceived detrimental to their stated common goal. This means that, at the core of collective action, a 'collective intentionality' may be required, because this prior commitment might reproduce contexts of action that benefits further cooperation.

The NBI has been criticized for a lack of results, and because the institution in itself gives the impression that there has been more cooperation than has actually been the case. This assessment is understandable, especially given the inflated expectations that were propagated by some actors when it was established. But the NBI has served as a catalyst for cooperation, and has some quite remarkable achievements to its credit. Despite many opportunities for disputes and despite its general inability so far to deliver projects that really make a difference, the NBI has managed to build more trust among the riparian countries. The Nile sharing issue has not been settled, but the NBI has reintroduced a framework for basin-wide planning under the control of the basin states themselves. There are now institutional frameworks for regional cooperation. Through the NBI, states in the Nile basin may obtain foreign aid otherwise unavailable to them, and an institutional arrangement has been created whereby third parties have been given an opportunity to mediate disputes and help riparian countries to sustain negotiating processes. A multinational group of water experts and communication experts, each coming from one of the Nile basin countries, has been established by the NBI to advocate cooperation and national restraint in exploiting the Nile. The NBI and the way it has operated may be seen as an institutional recognition that the 'status quo' is unsustainable for all the parties to the Nile, and a comprehensive new regime is needed to regulate and control the river in an optimal way.

There is no simple institutional solution to the collective action problem in the Nile basin, and no ready-made model that can be copied. This book has highlighted multiple modes of conflict and cooperation surrounding the use and management of the Nile, along with the temporal and spatial scales and the dialectic character of societal development and the physical character of the river system – all factors that are central to an understanding of the relationship between the actors within the basin and of the history of the whole region.