

European Continental Hydrosystems under Changing Water Policy

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1 The river basin as a territorial water management unit – Towards post-political water management

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Le bassin-versant comme unité territoriale de gestion de l'eau. Vers une gestion de l'eau post-politique. Au cours des deux dernières décennies, le bassin-versant est devenu l'échelle de référence en matière de gestion intégrée des ressources en eau (GIRE). Cette gestion intégrée, ainsi que le concept de gouvernance de l'eau, représentent aujourd'hui une approche dominante. La première partie de l'article analyse l'origine et la notoriété de cette conception de la gestion de l'eau fondée sur le bassin-versant. La seconde partie la confronte aux pratiques gestionnaires actuelles en soulignant que dans de nombreux cas – aux Etats Unis, en Europe, en Afrique ou en Asie –, celles-ci intègrent le transfert d'eau d'autres bassins. S'appuyant sur le décalage entre la promotion du bassin-versant et la fréquence des transferts hydriques interbassins, la troisième partie soulève la question du choix de cette unité territoriale de gestion et de sa signification politique. Le choix de cette échelle territoriale, présentée comme « naturelle » et, par conséquent, comme une échelle rationnelle et la mieux adaptée aux contraintes et aux besoins écologiques, est analysé ici comme le symptôme d'une dépolitisation de la gestion de l'eau. Comme le soulignent d'autres analyses, ce choix est révélateur des tendances « post-politiques » de la gestion des ressources environnementales, c'est-à-dire d'une gestion consensuelle dénuée d'intérêts politiques, de leurs représentations et de débats réellement démocratiques.

1 Introduction: the question of scale for water management

In the last two decades, the river basin or river catchment area has become the scale of reference for integrated water resource management and water governance, the equally prominent approaches of water management today. This choice of the river basin as the advocated territorial management unit is an attempt to consider the growing problems of degraded surface water and ground water aquifers more seriously, as well as the overall depletion of water resources. The diagnosis of these problems is the sector centred approach of water use, supply oriented management, and the frequent ignorance of the impacts of the use patterns on the hydrological cycle. In order to tackle these problems, an approach integrating the various sectors and interests located at different scales as well as the promotion of a unifying scale at which all stakeholders

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would meet has been developed foremost by international public authorities. Government designated experts, representatives of inter- and non-governmental organisations adopted in 1992 in Dublin at the end of the International Conference on Water and the Environment, the Dublin Statement on Water and Sustainable Development promoting integrated water resource management. The first Dublin Principle states that “[...] *effective management links land and water uses across the whole of a catchment area or groundwater aquifer*” (Global Water Partnership, 2010). It defines thus the river basin as the fundamental geographical management unit. Formulated in preparation for the conference for the International Earth Summit in Rio de Janeiro in 1992, these Dublin principles were adopted in art. 18.5 of the Agenda 21. The principles call for the establishment of strong relationships between the integration of all stakeholders and the scale of a catchment area as the territorial management unit (Cohen & Davidson 2011). Subsequently, the Integrated Water Resource Management (IWRM) forms the centrepiece of water management approaches in international as well as national water policies. It is promoted by the Global Water Partnership founded in 1996 by the World Bank, the United Nations Development Programme, and the Swedish International Development Cooperation Agency, and has been methodically reiterated during the World Water Forums, especially during the second World Water Forum in the year 2000 in Den Haag and the International Freshwater Conference in Bonn in 2001. The concept of IWRM and the river basin as its geographical basis are now established as the dominant approach in order to reconcile the different interests of water users and to solve water related problems. Despite the will to achieve these laudable goals, the question arises whether the river basin is the relevant scale for the integration of all actors for the management of water resources. Further, one might ask, why is the river basin dominating as the territorial unit for water “management” approaches? What is the meaning of such domination in regard to our way of defining and handling environmental problems, and what can this domination of the river basin reveal especially in regard to nature-society relationships? This contribution is largely taken up by my argument published in O. Graefe (2011).

2 IWRM and the fetishizing of river basins

The concept of the river basin as the foundation of an administrative or political unit and the catchment as a natural boundary for delimiting these units is an old idea dating back to the 19th century (Ozouf-Marignier, 2002; Ghiotti, 2006; Molle, 2006, 2009). Especially in France, a debate on the definition of new regions revolved around river basins as a territorial principle as a means to correct the centralisation of power in Paris. In the USA, the most explicit advocate of this idea has been John Wesley Powell, who presented the benefits of such regionalisation for the American west:

“Thus it is that there is a body of interdependent and unified interests and values, all collected in one hydrographic basin, and all segregated by well-defined boundary lines from the rest of the world. The people in such a district have common interests, common rights, and common duties, and must necessarily work together for common purposes. [...] This, then, is the proposition I make: that the entire arid region be organised into natural hydrographic districts, each one to be a commonwealth within itself for the purpose of controlling and using the great values which have been pointed out. [...] The plan is to establish local self-government by hydrographic basins” (Powell, 1890, p. 114).

While this citation shows the naïve conception of hydrographically determined common interests, the support for the definition of river basin authority was motivated in other places by ambitious colonial hydraulic projects. According to civil engineers like Sir William Willcocks, the control of the Nile basins under one and sole authority was seen as prerequisite for the implementation of river development (Molle, 2009). This view of a single river basin authority engineering and administrating hydraulic and subsequently all regional development projects became more prominent during the 20th century. The famous Tennessee Valley Authority created in the USA

in 1933 represented a model of such an engineering led approach. The river basin as territorial management reference has been used in Europe after institutional changes were implemented since the beginning of the 20th century to address problems and issues of pollution, drainage or hydropower generation like the German *Wasserverbände*, the British Drainage Boards, the Spanish *Confederaciones Sindicales Hidrográficas* and the French *Compagnie Nationale du Rhône* (Molle, 2009). Often linked to huge infrastructure projects like dams, canals and irrigation schemes the model of the river basin development has been exported widely, foremost in the colonies as it was seen as a foundation for overall economic development. Even if the concept of the river basin as a development tool has been replaced in the 1970s to the 1990s by a more protective approach of water resources management, the river basin remained nevertheless the reference unit. River basin commissions were established in the USA, Regional Water Authorities in the United Kingdom, and *Agences Financières de Bassin* renamed in *Agences de l'Eau* in France to address the increasing preoccupying problem of water pollution in the industrialised countries (ibid.). But these new authorities were rather more responsible for the control of water quality and the enforcement of water protection measures than for the management of the water resources. The river basin as a management unit gained momentum again with the promotion of the IWRM approach by various international institutions.

Especially the EU has been, and still is, very active in promoting the river basin as the appropriate scale for water management as the EU Water Framework Directive (WFD; 2000) and the EU Water Initiative show. The WFD stipulates the creation of river basin districts and river basin management plans until 2009. Subsequently, all member states of the EU established or finished establishing basin organisations for all their river basins. Formulated for developing countries and presented in Johannesburg in 2002 at the World Summit for Sustainable Development, the EU Water Initiative emphasised the relevance of the river basin, which has been reiterated since then in numerous reports and strategy papers. On an even more international level, the Global Water Partnership promotes the river basin in the same way: *“Water flows according to natural characteristics and does not respect administrative boundaries – therefore the question arises: should water be managed and management structures defined according to existing administrative boundaries or according to natural boundaries, usually taken to be river basins? From a pure water resource point of view there might be much logic in adopting a river basin approach, or at least considering the river basin as the logical planning unit”* (Global Water Partnership, 2000, p. 47). This rather rhetorical question attempts to impose the water divide as boundary because it is naturally given, disregarding that the choice itself of this delimitation in particular is neither natural nor self-evident (see Moss, 2003; Blomquist & Schlager, 2005). The reference to the water resource perspective implies the logic of natural sciences and is an attempt to avoid possible discussions or contestations of this choice. In other words, “nature” is called upon to legitimize a choice, which is inherently political.

This legitimization is nevertheless disregarding a hydraulic reality. The river basin is in many regions not the territorial unit, where the demand and the so much emphasised *natural* availability of water correspond. Many areas are in structural deficit of water resources because of their high consumption level or their geographical localisation. These local deficits are often countered by water transfers creating a high complexity of water management practices and demonstrating that river basins are not the relevant scale for water management in large parts of the world.

3 Water supply practices and the creation of plumbing systems

Astonishingly, the promotion of the river basin as the management and planning unit ignores observable water transfers in many regions. Techniques of water deviation exist since the development of irrigation agriculture in antiquity. The construction of dams enables the transfer of water in tremendous quantities since the beginning of the 20th century. The entire hydrological map of the western part of the USA has been modified in order to satisfy the urban and agricul-

tural water demand of the American West (Worster, 1985). It is Spain, which experienced the biggest intervention in the hydrological cycle in Europe. A technonatural waterscape has been built upon more than nine hundred dams since the end of the 19th century, especially under the regime of Franco (Swyngedouw, 1999, p. 450). But even less dry regions are dependent on a water supply coming from other river basins. For example, Stuttgart's and its agglomeration of 4 million inhabitants water provision is secured by water resources from Lake Constance (Zweckverband Bodensee-Wasserversorgung, 2010). Other examples of interbasin transfers at a large scale exist in emerging countries like the Lesotho Highlands Water Project in South Africa, the Indira Gandhi Canal in India and the South-North Water Transfer Project in China to name only the most paradigmatic – and contested – ones. The supply scheme of the Vaal-River basin in South Africa shows, for example, how the river basins and the water divide are no longer as natural as advocates of river basin management claim.

Such plumbing systems through the connection of rivers basins, the diversion and even pumping of water from one basin to another are common practice today and remain in contrast with the domination of the concept of the river basin as the management unit (Niemann, 2005). The question is how to understand this discrepancy between the claim and the actual management practices. Why institutions retain the “natural” boundary despite the managerial reality?

4 Water governance and the depoliticisation of the environment

“River basin management also overcomes political borders” according the German Federal Ministry for the Environment and indicates clearly the logic that the claims and narratives follow (Bundesministerium für Umwelt, 2007). As mentioned above, the reference to the river basin, justified scientifically based on a rationality of natural science, tries to naturalize inherently political choices. This is an attempt to carry water management away from existing political and administrative structures with their inherent power relationships and hierarchies in order to establish “water governance”, the new concept promoted by programmes and institutions such as the Global Water Partnership, UNDP and the EU. This shift from the existing water management approach towards river basin management and water governance can be put in a wider context of governance promotion. Following several authors, the concept of governance increasingly replaces government approaches by trying to reduce political aspects from decision-making processes.

“Governance entails an explicit reference to ‘mechanisms’ or ‘organised’ and ‘coordinated activities’ appropriate to the solution of some specific problems. Unlike government, governance refers to specific ‘policies’ rather than general ‘politics’ because it does not entail a binding decision-making structure. Its recipients are not ‘the people’ as a collective political subject, but ‘the populations’ that can be affected by global issues such as the environment, migration or the use of natural resources” (Urbinati, 2003, p. 80, cited in Swyngedouw, 2010).

This depoliticisation of management has been characterised as a postpolitical arrangement by reducing the political to the “policing” or “policymaking” and to a managerial and consensual governing (Swyngedouw, 2009, p. 605). The critique of consensus as the basis of decision-making is the impediment of collective action through the empowerment of each stakeholder with a power of veto. *“In practical settings, consensus decision making has led to either gridlock as individuals exercise their veto power, or a something-for-everyone form of distributive policy where vetoes are avoided by buying off each interest. An appearance of consensus might indicate that competing values or interests have gone unheard or been artificially suppressed”* (Blomquist & Schlager, 2005, p. 106). Examples in the past showed that even with participatory procedures, river basin management decisions were still authoritarian disregarding local interests (ibid.).

From this perspective, water governance with the concept of IWRM on the basis of river basins is to be understood as a progressive replacement of the polity by expert environmental administrators.

5 Conclusion: river basin districts and the postpolitical logic

The river basin as a self-evident choice of the water planning and management unit is highly questionable in the light of the increasing water transfers between catchment areas. While 120 million people today already depend on water transfers across the world, this number will increase dramatically in the next decades. In 20 years, it is estimated that 1000 km³ of water will be transferred between basins every year, especially after the completion of projects in India and China like the South-North Water Transfer Project diverting water from the Yangtze to the Yellow river basin (Blanchon, 2009). The on-going urbanization and migration towards metropolitan areas, especially along coasts, make increased water transfers necessary, as local water resources are not sufficient. To privilege and promote one particular scale for the management of water resources despite the increasing level of basin connectivity and management complexity seems not only naïve but erroneous. It is above all misleading for the identification of solutions to water related problems (see Kluge, 2005), which are neither hydraulic nor hydrological, but are of a political nature (Molinga, 2008). The river basin fetishism, the domination of the IWRM and governance concepts are symptoms of the depoliticisation of water management. They should be seen as being part of a process creating new instances of environmental management dominated by scientific and technocratic expertise void of political interests, political representations and politics overall.

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Hydrosystems strongly interact with society in terms of natural resource management, water quality/quantity management, or natural risks. During recent decades, population increase and economic growth, notably in flatter regions, have strengthened the tensions between hydrosystem functions and land planning. As a result, the importance of human impacts on hydrosystem functions and increases in hydrological risks are now widely recognised. The development of laws and policy tools to improve land and catchment planning in order to protect the natural functions and quality of hydrosystems has been one of the responses associated with solving these problems. In this context, the Water Framework Directive (WFD) of the European Union is heading and driving the national laws for European State Members. The aim of the WFD is to set a common standard in terms of quality and quantity objectives for physical, chemical and biological hydrosystem parameters. These objectives have to be implemented through an appropriate management plan and applied to every water body/water mass unit such as rivers, lakes and groundwater. These WFD objectives are challenging for a number of European countries that have highly inspired the WFD foundations from their own water management policies and tools.

European Continental Hydrosystems under Changing Water Policy proposes a synthesis of the geographical research and research findings in relation to continental hydrosystems, European territories and water laws, both at the conceptual and methodological level. Numerous case studies from France, Switzerland, Portugal, Romania, Spain, and United Kingdom show how research in geography can contribute to the implementation of water policies in Europe.

This book is organised in four sections:

Section 1: River basin management, achieving good status of hydrosystems and geographical sciences;

Section 2: Water laws, hydrological/sediment transfers and integrated approaches to risk management;

Section 3: Institutional management of water use and participation;

Section 4: Fundamental geographical research applied to hydrosystem management.

This book, written by a first class international team of 77 authors, is essential for researchers, students, professional geographers, geomorphologists, hydrologists, geologists, ecologists, engineers and planners, and professional organisations. It is a useful supplementary textbook for higher-level undergraduate and MSc courses in continental hydrosystems and catchment management taught within Departments of Geography, Environmental Science, Geology, Ecology, Environmental Planning, and Civil and Environmental Engineering.