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Cross-border organisations as an adaptive water management response to climate change: the case of the Guadiana river basin

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Abstract. In this paper we analyse the role played by cross-border organisations in the Guadiana river basin in Iberia, and the extent to which new emerging institutional arrangements carry on adaptive management practice as a response to mounting climate change risks in the river basin. Particular attention is paid to the new transboundary agencies, as promoted by the EU INTERREG programmes, and their potential for mainstreaming climate change considerations into Guadiana river basin development strategies. Results indicate that the penetration of climate change concerns into regional development policies requires a better integration of different policies and improved connectivity and coordination between multiple actors operating across sectors, and at different spatial scales. We argue that the emergence of new transboundary agencies capable of performing these bridging functions is a vital ingredient for building climate adaptive capacity in these cross-border regions.

1 Introduction

The hydrological systems of Europe are under increasing pressure to adopt new practices which are capable of coping with the dual pressures of: (1) biophysical stressors, such as climate-related hazards; and (2) meeting societal demands for sustainable development. In terms of water stress, climate change scenarios for Europe suggest a significant increase in the vulnerability of communities in Southern Europe and the Mediterranean region. Given the uncertainty inherent in these scenarios and the potential for extreme events and surprises (IPPC, 2007), a more decisive move towards greater flexibility in the form of adaptive governance systems has been advocated from various quarters (Folke et al, 2005; Pahl-Wostl, 2007).

Adaptive water management is rapidly becoming an emergent paradigm used to counter the limitations of traditional technical approaches to resource management (Pahl-Wostl et al, 2008). The approach builds on the principles of social learning, proposing a transformation in management practice based on the integration of a plurality of sources of knowledge and perspectives. It presupposes a capacity to cope and respond to challenges so that it "reflects learning, flexibility to experiment and adopt novel options" (Walker et al, 2004, page 6). Boorman et al (1994) defined "adaptive management as learning to manage by managing to learn" (page 1) whereas Gleick (2003) suggests that adaptive management seeks to improve the capacity of

the whole system to respond to change in a proactive way, replacing the paradigm of 'management as control' by 'management as learning'. However, most current resource management policies and processes continue to be largely subject to the still-dominant paradigm of technical determinism and administrative decision making, though new concepts and institutional changes are being introduced as evidenced by new transitional modes of engagement in the way that water regimes are now being restructured (Moberg and Galaz, 2005; Pahl-Wostl, 2002). That said, important obstacles such as cultural resistance still remain (Galaz, 2005).

A move towards more flexible and adaptive management practices which are capable of dealing with uncertainty, integrating multiple perspectives (eg social and natural sciences, expert and nonexpert), and taking account of actors and their activity at different levels (European, national, regional, and local) will require changes to the design of institutional frameworks (Kallis et al, 2006; Pahl-Wostl et al, 2008). In particular, the ways in which political institutions are designed, implement their policies, and interact with the public and private actors are critical in encouraging a move towards an integrated approach that is able to reduce the worst negative effects of climate change (Pahl-Wostl, 2002). Furthermore, it is argued that more effective institutional frameworks for river basin management will help to facilitate a reasoned response which has emerged from deliberation of an open range of options, with allocation of differentiated and clear responsibilities according to institutional and technical capacities among a multiple set of stakeholders. Ultimately, this entails the development of plural and open institutional structures (Kallis et al, 2006).

This said, it is also important to distinguish between institutions and organisations. As pointed out by Young (2008), the former relate to "clusters of rights rules, and decision-making procedures that give rise to social practices" (page 13) whereas the latter refer to "material entities that typically have personnel, offices, equipment, financial resources and often legal personality" (page 13). In the case of transboundary river basins, cross-border organisations can play a major coordinating role amongst complex national institutional structures—often involving various types of actors at different scales. These new arrangements would appear to be important mechanisms for not only improving coordination across spatial scales but also enhancing the local capacity of agents to respond to increasing climate change risks. Many of these new formal cross-border organisations, which have been attributed different nomenclatures (Euroregions, Euregios, or working communities), are supported by the EU through the 'INTERREG' funding initiative (a Community initiative which aims to stimulate interregional cooperation in the EU) and the subsequent 2007 – 13 Territorial Cooperation Objective (Perkmann, 2007). A core objective of these funding regimes is to foster regional integration and greater collaboration by overcoming the cultural, institutional, and administrative barriers that arise from territorial borders.

In this paper we set out to assess the capacity of these new cross-border organisations to promote adaptive water management practice in a transboundary river basin in the face of global environmental change. The analysis specifically focuses on the case of the 'Gabinete de Iniciativas Transfronterizas (GIT) Algarve – Alentejo – Andalucía' (Office of Cross-border Initiatives Algarve – Alentejo – Andalucía), the operational unit of the working communities Andalucía – Algarve and Andalucía – Alentejo, which is located in the Lower Guadiana river basin. The evaluation process was based on a framework of success 'criteria' as developed by Perkmann (2002a; 2007), with the concept of *policy entrepreneurship*[1] applied to a transboundary context. In addition

[1] The literature on policy innovation defines policy entrepreneurs as protagonists within specific policy areas who are searching for possible problems for which they can offer a solution (see, for example, Kingdon, 1984; Majone and Tame, 1996; Mintrom, 1997).

to Perkmann's original criteria (organisational skills, horizontal and vertical networking), two further variables have been added to fit the specific purposes of this analysis: the presence of a strategic approach and the explicit integration of adaptive water management and climate change considerations into the development goals of the cross-border organisation. In essence, this enables us to consider the extent to which the organisation fulfils the success criteria, thereby reflecting its institutional capacity to effectively influence adaptive management practice in the transboundary river basin.[2]

It is intended that the methodological approach and results from the analysis can be extended and/or adapted to other European transboundary contexts in which Euroregions, Euregios, or working communities have been created. These transboundary agencies, supported or not by the EU Territorial Cooperation Objective, share similar institutional features.

2 Changing patterns of governance and transnational institutional arrangements

As argued by Huitema and Becker (2005), many European river basin management regimes are beginning to experience a shift from a technical management paradigm, primarily based on centralised planning and control and the building of hard physical infrastructure, towards more open, participatory, and polycentric-designed management practices where greater emphasis is placed on social learning, building social–ecological resilience capacity, and creating conditions for agents' collaboration (Huitema and Becker, 2005). A significant driver of this change has been the introduction of the Water Framework Directive (WFD) (EC, 2000) into national legislation, with European member states now having to consider ecological and economic requirements, as well as ensuring the integration of stakeholder participation within water management and planning activities (van Ast and Boot, 2003; Väntänen and Marttunen, 2005). This new model for decision makers seeks to bring previously fragmented policy interventions under a unifying governance structure (ie the river basin) and to achieve a more deliberative approach to water resource management (EC, 2000). As previously stated, adaptive water management (on the basis of the integration of multiple sources of knowledge and the concept of social learning) constitutes an alternative approach which can be used to address the limitations of the traditional paradigm of technical determinism and administrative decision making.

However, whilst greater attention has been paid to water regimes and the impacts associated with the application of the WFD, our understanding of the wider relationships between the development of capacities to deal effectively with water management and other resource and environmental policy issues—such as climate change, energy, and sustainable development objectives—remains limited. This constitutes an important knowledge gap as different policy objectives are often dealt with by discrete institutions, administrative processes, and actors. Ultimately, improved integration will involve identifying the factors which influence the key interdependencies between multiple policy domains and administrative agencies in terms of both synergies and conflicts. Furthermore, trade-offs between differing objectives are common and new modes of agent interaction, as well as new professional skills, will be needed in order to enhance integration, to enhance adaptive change, and to support learning processes. In this regard, Westley (2002) and Tompkins and Adger (2004) point out the need to design institutional settings that are capable of managing problems in different domains while linking multiscalar networks in order to enhance the resilience of

[2] The case-study analysis has been conducted in the Lower Guadiana region (Spain and Portugal) and developed within the framework of the EU project Adaptation and Mitigation Strategies for Europe (ADAM) (http://www.adamproject.eu).

socioecological systems to global environmental change. The linking of networks is considered to facilitate learning and more adaptive responses to change (Olsson et al, 2006), with innovative mechanisms that operate in the space between state and society helping to generate higher levels of social capital (Evans, 1996).

Building on the foundations established by INTERREG, transnational institutional arrangements now promoted under the EU Territorial Cooperation Objective (2007 – 13) are said to have considerable potential for promoting and enhancing such linkages (Blatter, 2003). These new institutional mechanisms can potentially act as innovative platforms for cross-border relationships between citizens, politicians, institutions, economic forces, knowledge holders, and other social and cultural agents (Gabbe et al, 2000). However, these new structures are often dependent on the resources and decisions of traditional government bodies in order to implement their policies and visions. As such, it has been recognised that the mobilisation of private and civil society actors through social networks may be critical for ensuring the effective governance of Euroregions and working communities (Perkmann, 2002b; 2007), and in many cases activities will need to be supported by the establishment of cooperative arrangements. This would suggest that the development of the necessary political and technical skills is very much dependent on leadership capacity and an exchange of cognitive resources to manage common public policies.

It is precisely through such interactive activity that policy entrepreneurs are said to develop and make 'windows of opportunity' to appear and prosper, being able to deploy their resources with the aim of getting other actors—both governmental or nongovernmental—to cooperate by providing them with common meanings and identities (see, for example, DiMaggio, 1988; Fligstein, 1997; Morata et al, 2008). The key characteristic of policy entrepreneurs is their ability to 'marry' projects for change with the activities and interests of other key actors (both government and nongovernment actors can act as policy entrepreneurs when deploying strategies aimed at promoting their own agenda). In this way their endeavours are thought to introduce new ideas, norms, and values into existing social structures (Rao and Friedman, 2000). We suggest that this is synergistic with the integration objectives of transnational institutional arrangements.

3 Analytical framework

We have adopted, and further built upon, the criteria developed by Perkmann (2002a; 2007) in which he establishes a methodology for qualitatively assessing successful governance of cross-border organisations. This framework was chosen due to not only its cross-border focus but also its consideration of the 'policy entrepreneur' concept. We argue that this concept is a key variable which affects the effectiveness and adaptability of transnational institutional arrangements. The three dimensions (after Perkmann, 2002a; 2007) are:

(a) the development by the secretariat or administrative unit of various organisational capacities that creates the conditions for a relative degree of autonomy;

(b) the establishment and maintenance of horizontal networking in the local sphere;

(c) the creation of vertical networking with higher level authorities, especially the EC, and the central and regional authorities.

Policy entrepreneurs have the ability to take advantage of windows of opportunity and act as important catalysts of change, whilst at the same time increasing the influence of their own organisation in their respective policy context. Research on EU policy formation has previously applied the concept of policy entrepreneurship to the European Commission (Laffan, 1997; Moravcsik, 1999), with the Commission thought to act in an entrepreneurial mode by exploiting available resources and mobilising actors and ideas in order to generate new policies that are acceptable to various coalitions of actors.

The concept has also been extended to institutional structures for cross-border cooperation, such as Euroregions or working communities. Brouard (1996), for instance, analyses the construction of the Atlantic Arc working community, operating from the UK to Portugal, in the context of being a 'political enterprise'. As strategic spaces for cooperation and mobilisation of resources, these structures are often dependent on resources and decisions taken at other governmental scales in order to implement their policies and visions. Owing to this modus operandi, Euroregions and working communities can best develop their activities through active policy entrepreneurship, exploiting windows of opportunity, and fostering their influence through their own strategies and ideas (Perkman, 2007). Therefore, policy entrepreneurship is dependent on the organisational, technical, and communication skills of the transnational institutional arrangement and its ability to build coalitions of actors both vertically and horizontally. In particular, the technical capacity of its agents, its diligence in obtaining funds and fairness in sharing them out, and its representativeness and parity composition are basic qualities informing the way it operates. As such, the attributes of a policy entrepreneur can be characterised by a constructive, problem-solving approach which aims to create a climate of consensus between different networks and individual actors in policy-making processes.

On occasion a policy entrepreneur may seek to achieve multiple, often conflicting, objectives. This is often the case for adaptive management practice in transboundary river basins, with conflict likely to increase in the context of global environmental change. For example, mainstreaming climate change and adaptive water management considerations involves the integration of different measures into regional development planning and sectoral decision making. The effectiveness of such integration in the context of cross-border cooperation will depend on political will, as well as the activity of actors sensitive to those multiscalar considerations in the implementation of INTERREG and other transboundary projects. However, evidence suggests that, to date, the priorities of cross-border cooperation have been focused primarily on transport links and improving transport, industry, and energy infrastructure (Gabbe et al, 2000). While these strategies may have an indirect impact in reducing the vulnerability of local populations to increasing climate risks (and to some extent can be seen as an adaptive strategy), this has obvious negative implications for mitigation efforts. If priorities are not balanced with other goals and integrated in a sustainable development vision for the region, the outcome of these processes may create a contradiction between the need to enhance the adaptive capacity of the system and the regional–local and short–mid-term demands for climate change adaptation and sustainable development.

We suggest that a more strategic interregional collaborative approach may contribute to more balanced decision making, consensus building around different policy objectives, and joint consideration of wide-ranging sustainability issues. We argue that cross-border institutional arrangements can improve the opportunities for establishing beneficial links between actors on both sides of the border, can inform the prioritisation of local action, and can ultimately convert independent and isolated projects into mutual programmes where synergies and win–win situations are exploited.[3] Moreover, advantage can be taken of the opportunity to mobilise actors from both sides of the border and to put them in contract with each other, fostering links between them, and providing a solid and coherent basis for carrying out joint work and projects

[3] On the basis of local experience, the *Practical Guide on Cross Border Cooperation* (Gabbe et al, 2000) stresses the potential of joint preparation and production of strategies for reducing the border's typical barrier effect.

in the future (Gabbe et al, 2000). In support of this agenda, two additional elements were therefore added to our analytical framework:
(d) the adoption of a strategic approach;
(e) the integration of climate change and adaptive water management objectives into development goals, creating an overarching sustainability vision.

4 Cross-border cooperation in the Guadiana river basin

4.1 Description of the case study area

The Guadiana river basin lies between Spain and Portugal and constitutes one of the three main drainage units of the Iberian peninsula. It has a total drainage area of 66 800 km^2. Its climate is semiarid with low irregular precipitation (440 mm/year) and constitutes one of the Spanish river basins with the lowest fluvial input under natural conditions (CHG, 2000). Most of the river basin lies on the Spanish side (see figure 1).

Over the past four decades, considerable modification of the local hydrological regime—in the form of dams, illegal wells, and increasing urbanisation pressures—has caused mounting water scarcity problems along the Portuguese–Spanish border. According to the Portuguese Scenarios, Impacts and Adaptation Measures Project (Santos et al, 2002), Sado and Guadiana stand out as the most vulnerable of the river basins to climate change. Currently, the main problems within the Guadiana

Figure 1. Location of the Guadiana river basin (source: Encarta).

river basin are the overexploitation of aquifers, especially significant extraction for agricultural use, agricultural contamination, and fragmentation of the river system by dams (Cosme et al, 2003). Growing water shortages, summer droughts, and soil desertification will interact to make the management of all these problems more complex in the near future, reinforcing the need for comprehensive and holistic water management approaches.

The Portuguese part of the river basin houses some of the poorest municipalities in the country, severely affected by both an ageing population and chronic unemployment. Indeed, the Portuguese authorities often associate the poor economic performance of the region with the lack of water availability (WWF, 2003). On the other side of the border, the economic structure and type of environmental problems faced differ slightly. For instance, in the Spanish Upper Guadiana basin, exploitation of groundwater for development is regarded to have substantially increased the livelihoods of the people depending on agriculture in this area, but with important ecological costs that many of the local population do not recognise (Maestu and Costejà, 2005). Also, on the Spanish side, fast development processes previously concentrated in coastal areas are now being extended inland with the construction of large-scale urbanisation and tourism complexes, which are highly intensive in the use of water resources (eg green grounds and golf courses).

4.2 The governance context

In Spain the management of water resources is mostly carried out by hydrological confederations (HCs) with additional jurisdiction falling on several autonomous communities (ACs). The Spanish part of the Guadiana river basin is covered by three ACs—Extremadura, Castilla-La Mancha, and Andalucía—and three provinces—Badajoz, Ciudad Real, and Huelva. In Portugal the Plano de Bacia Hidrográfica do Rio Guadiana is the sole administrative unit, though its responsibilities are divided between the Alentejo and Algarve regions.

HCs are responsible for river basin water plans (ACs having regional competence), the management and building of infrastructure, and the allocation of water among users. Traditionally, the main actors participating in the elaboration of river basin water plans consisted of a community formed by the corps of civil engineers, the main agricultural organisations, construction companies, electricity companies, and chief bodies of hydraulic administrations. However, new actors are beginning to challenge the status quo in an attempt to open and expand the borders of participation of this 'closed' decision-making community. In particular, academics, local groups, regional communities, and environmental organisations have become increasingly vocal and active in their challenge to business as usual by calling for a transition in existing water regimes (Saurí and del Moral, 2001; Tàbara and Ilhan, 2008).

The Guadiana Water Plan was approved by the Spanish government in 1998 (Spanish Kingdom, 1998). Whilst the plan introduced adaptation measures (for example, actions to combat the overexploitation of aquifers); continuing conflict between groundwater irrigation development and aquatic ecosystems conservation highlights that measures have had limited impact. Although neither the Spanish Water Law nor the Guadiana Water Plan makes any specific mention of climate change, the National Water Plan (Spanish Kingdom, 2001) does account for potential climate-induced reductions in water availability, with an analysis of the effect of these reductions on resource management and planning.

In Portugal water management is the responsibility of central government, particularly the investment and the construction of water infrastructure. As such, the role of the Ministry of Planning is critical. Despite early plans, there are still no river basin authorities in Portugal; rather it is the Institute for Water and the regional directorates

together with the Ministry of Environment which have the responsibilities for the drafting and implementation of the fifteen river basin plans for the Portuguese territory. The Portuguese Guadiana River Basin Plan (Portuguese Republic, 2001) explicitly acknowledges issues of water quantity and shortage. Critics argue that an integral approach is more efficient in the making of water resource management and regional development plans, especially in integrating climate change (Aquastress, 2005; WWF, 2003). In spite of this, actions to counter the problem have mainly been hard-engineering-type measures—that is, the construction of dams, such as Alqueva, or other irrigation infrastructures.

Transboundary cooperation between Spanish and Portuguese water management regimes is being promoted through several institutional mechanisms, with an intensification of such cooperation evident over recent times. The 'Convention on Cooperation for the Protection and Sustainable Use of the Portuguese–Spanish River Basins' (Spanish Kingdom and Portuguese Republic, 1999), which constitutes the Commission for the Convention Development and Application, is particularly worthy of mention. The convention defines the framework for cooperation in protecting inland waters (both surface water and groundwater) and their dependent ecosystems, and seeks to ensure the sustainable use of water from shared river basins. The WFD, in particular, has been an important driver in this regard, through important obstacles remain.

At the transboundary regional level, the following institutional agreements have been adopted in an attempt to promote cross-border cooperation in the Guadiana river basin: (1) The Regional Development and Coordinating Commission of Alentejo (RDCC-Alentejo) and the Extremadura government (1992); (2) RDCC-Algarve and the Andalucía government (1995); and (3) RDCC-Algarve and the Extremadura government (1995). These agreements have resulted in three working communities which are intended to facilitate cooperation between contiguous territorial authorities, providing a space for interaction and knowledge exchange between different actors, rather than forming an additional tier of government. Although activities are cross-border in nature, most of the actions taken by the competent authorities are in accordance with their respective national laws and ultimately do not affect the distribution of existing sovereign powers.

Of particular note is the new organisation operating in the Lower Guadiana within the working communities of Andalucía–Algarve and Andalucía–Alentejo, as articulated through the GIT Algarve–Alentejo–Andalucía. This is the operational unit for both working communities and was initiated by a project approved within INTERREG III-A Spain–Portugal in 2004. This initiative, despite being conceived as a single unit, is made up of three sections: General Secretariat of Foreign Action (*Secretaría General de Acción Exterior*) of the Junta de Andalucía, the Algarve Commission of Coordination and Regional Development, and the Alentejo Commission of Coordination and Regional Development. The purpose of the GIT is to provide support to regional authorities in their implementation of cooperation policies.

4.3 Methodology

In order to evaluate the capacities of cross-border organisations to perform adaptive management practice in a river basin, two complementary methodological processes were utilised. The first was a static analysis of theoretical and empirical bibliographic sources. This initial phase also involved a document review, including an evaluation of INTERREG projects from January 2004 to December 2008 (annual reports, technical data and associated documents, and working communities' protocols were all examined). Grey material, such as press reports and local documents, were also reviewed in detail.

The secondary complementary social science approach involved different stakeholder engagement techniques: a workshop involving both experts and regional stakeholders, supported by a series of follow-up, in-depth interviews with key public and private actors. An initial workshop was held in Mertola in the Lower Guadiana region on 15 and 16 December 2006. This was hosted by the Associaçao Defensa Patrimonio Mertola, a nonprofit organisation active in the zone with involvement in several INTERREG projects. The meeting brought together representatives from the agricultural and tourism sectors, nature conservation, and actors on the regional governance stage with an interest in sectoral activity. Invited stakeholders were selected according to their field of activity, their organisation, as well as their geographical location in an attempt to ensure equal representation of stakeholders from both countries. The presence of representatives from Portuguese and Andalusian governments, nongovernmental organisations (NGOs), farmers' associations, and private tourism business managers ensured that issues such as power, legitimacy, and influence over adaptation processes were all considered. The methodological approach used for the selection of the stakeholders as the procedure was based on the general ideas of integrated assessment focus groups and sustainability science (Kasemir et al, 2003). According to this approach, stakeholders' meetings aimed—and to a large extent successfully did so—at a fair representativeness of the plurality of perspectives and the integration of plural sources of knowledge, both quantitative and qualitative.[4]

The participatory workshop was intended primarily as a scoping exercise to better understand some of the key sustainability issues facing local communities on both sides of the border. A secondary aim was to explore the role of governance structures in supporting activity—in particular, the role played by cross-border institutional arrangements, the interaction between local, regional, and national governmental levels, the role of informal institutions, the participation of civil society in the planning and management of water resources, spillover effects between sectors, regional strategies, and the extent to which climate change is accounted for, and associated influences such as the implementation of INTERREG projects.

Informed by this initial diagnosis (literature review and workshop), in-depth interviews were then carried out during a secondary phase of research. The process of identifying suitable stakeholders for interview was carried out in collaboration with a set of preliminary local contacts actively involved in a variety of cross-border cooperation programmes. These actors assisted in compiling a list of interviewees based on a wide representation of institutional and sectoral interests in the region, as well as ensuring representation from different geographical scales. A total of twenty stakeholders were selected from this first 'snowball' process, resulting in interviews that covered different economic sectors (tourism, agriculture, water resources), social groups (environmental, civic, and leisure associations), research institutions, administrative authorities (local, regional administrations), and transboundary institutions. Actors from both Spain and Portugal were represented, some of whom had also participated in the workshop (for a full list of stakeholders, see table 1).

The interviews were structured according to an open questionnaire format, and focused on transboundary cooperation programmes, organisational functioning, the role of GIT, and institutional barriers and opportunities to change. The open interview process was the chosen methodology to allow for exploratory insights not anticipated by the researchers. Personal perspectives obtained through both the workshops and the interviews were recorded and transcribed, and the content was analysed inductively.

[4] For further description of methods and composition of participants, see ADAM (2006).

Table 1. List of engaged stakeholders.

Type of stakeholder	Affiliation
Political	General Secretary of Sustainable Policies, Regional Environmental Department (Andalucía government, Spain) General Directorate of Plans and Programmes, Regional Environment Department (Andalucía government, Spain) Regional Tourism Department (Andalucía government, Spain) Regional Directorate of Agriculture (Algarbe government, Portugal) Punta Umbria municipality (Spain) Direcçao Regional Agricultura do Algarbe (Portugal) Regional Agriculture Department (Andalucía government, Spain) Natural Parc do Vale do Guadiana (Portugal) Confederación Hidrográfica Guadiana (Spain) Office of Foreign Affairs, Gabinete de Iniciativas Transfronterizas (GIT) (Andalucía government, Spain) Office of Foreign Affairs, GIT (Andalucía government, Spain)
Economic	La Empresa de Gestión Medioambiental SA (Spain) Tourism operator (Alentejo, Portugal) Tourism operator in Corte Gafo (Alentejo, Portugal) Federación Andaluza de Empresas Cooperativas Agrarias (Spain) Agricultor Mertola area (Portugal)
Environmental/social	Greenpeace (Spain) Asociación Defensa Patrimonio Mértola (Portugal) Ecologistas en Acción (Spain) Pura Vida Fundation (Spain) Associção Almargem (Portugal)
Experts	Expert in rural development from the Instituto de Estudios Sociales Avanzados de Andalucía, Consejo Superior de Investigaciones Científicas (Spain) Expert in water management and cross-border cooperation from the Universidade Técnica de Lisboa (Portugal) Expert in international environmental law and policy from the Instituto Internacional de Derecho y Medio Ambiente (Spain) Expert in water management from the Escola Superior de Tecnología, Universidad Algarbe, Fundação Nova Cultura da Água (Portugal) Expert in governance and cross-border cooperation, Universidad de Huelva (Spain)

4.4 Evaluation and reflections

In this section, which is based on the assessment framework described previously in the paper, we draw on findings from the literature review, workshop, and interviews to evaluate and comment on the capacity of cross-border organisations to improve and promote adaptive management practice in the Guadiana river basin. The discussion is structured according to the five assessment criteria discussed previously, highlighting some of the key findings arising from the engagement process (the quotations are from stakeholders).

4.4.1 *The development of organisational capacities by the secretariat*

GIT, the operational unit of the respective working communities Andalucía – Algarve and Andalucía – Alentejo, is in charge of coordinating INTERREG programmes, as well as providing the necessary administrative support. Although seen as having considerable potential to facilitate cross-border interactions, several important constraints affecting the development of organisational capacity have been recognised.

In the first instance, GIT is itself financed by INTERREG and is therefore not a fully autonomous body, and ultimately "its continuity depends on the approval of the European Commission as any other INTERREG project". There are also concerns that funds under the 2007 – 13 scheme destined for the zone are likely to be dramatically reduced, thus discouraging the generation of ideas and the mobilisation of actors and resources to achieve common objectives in the longer term. Furthermore, although embedded in the Office of Foreign Affairs of the Andalucían Government (Spain) and constituted by three sections (Andalucía, Alentejo, and Algarve), operative staff work exclusively for the Andalucían Office of Foreign Affairs as "the Portuguese regions do not have staff contracted in their sections". Furthermore, the lack of capacity is reinforced by the

> "staff in the office sharing their work time between this project, other projects, and the other usual day to day activities of the Office of Foreign Affairs."

In other words, the unit lacks the resources—in terms of capacity, time, and dedication—needed to tackle the multiple difficulties associated with cross-border integration. Similar limitations which directly impact on effective transboundary cooperation are also reported in the conclusions of a workshop on Spanish – Portuguese cross-border cooperation 2007 – 13 (GIT, 2008).

Other underlying issues also act to hinder capacity building. Crucially, partners on both sides of the border do not perceive the value of the GIT office in terms of either soliciting or implementing INTERREG projects. Central to this is a question of trust, evidenced by the fact that there is a lack of communication between INTERREG partners and the GIT organisation, an issue acknowledged by GIT staff:

> "we don't have a fluent relationship with NGOs and other associations, though the situation is different with local councils and regional administrations and departments, with whom we keep a more active cooperation",

a situation attributed to the "recent creation of the project and the lack of time needed to establish mutual trust relationships." Taking all these factors into account, it is clear that there are significant barriers to the development of organisational capacity as defined by: parity and a representative nature, the technical quality of its agents, diligence in obtaining funds and fairness in allocation, a technocratic, problem-solving approach, and an ability to mediate between, and reconcile, the different interests at stake (Perkmann, 2002a; 2007).

4.4.2 *The establishment, and maintenance, of horizontal networking in a local context*

In the context of the Guadiana river basin, horizontal partnership is given special expression through the relationship between multiple actors in both countries. To be effective, not only is parity required but obstacles relating to funding and the differences between administrations and their respective power relationships need to be addressed. Whilst it was acknowledged by those interviewed that communication and cooperation on both sides have improved significantly over recent years, mainly due to the influence of European funding, parity issues remain problematic. Indeed, deficiencies in joint implementation are noticeable even within INTERREG projects. For example, those projects analysed have a tendency towards differentiated execution on either side of the border, with each partner using the EU funds to pursue their own national or regional objectives, as exemplified by the comment that "this is how the INTERREG projects works; cooperation is in the words, not in the facts". This is further reinforced by the fact that data from the late 1990s highlighted that only 7.3% of the resources available for cross-border initiatives between Spain and Portugal actually went into 'genuine' cross-border activities under INTERREG I (Perkmann, 2002a). There are also concerns that there is a current overdependence on European funding,

with potential implications further down the line. This is reflected in the comments of one interviewee who suggested that

> "the implementation of INTERREG projects in the area has been a learning experience, but some structures will not continue once European funds are cut."

GIT (2008) also cites the low degree of cooperation among different actors as an influencing factor that may hamper the progress of joint projects.

There is other evidence that cross-border 'fertilisation' remains in an early stage, even when it comes to the formulation of objectives. In the case of the Adecuacióny Mejora de Entornos Urbanos (AMEU)[5] project, for instance, the Portuguese remit was dedicated to a harbour's rehabilitation whilst Spanish colleagues focused on reforestation tasks. In this sense, according to the interviewees, the GIT (being influenced by the political will and interests of regional governments) still lacks the desired level of independence, autonomy, and political vision to operate as a neutral, transboundary secretariat—one which encourages and ensures the application of 'genuine' cross-border activities, acting to mobilise the entire region, and making itself indispensable as a network facilitator or 'broker'.

A further, and important, institutional obstacle to achieving a greater level of cooperation is the relative difference in powers and competencies of regional government agencies in Spain and Portugal (GIT, 2008). Policy-making entities in Portugal tend to be more dependent on central decision making, which automatically reduces the degree of flexibility and capacity needed to implement projects locally (these, by definition, require significant horizontal cooperation). For instance, interviews suggested that a lack of instruments, resources, and decision-making powers affects Portuguese administrative units to a much greater degree than their Andalucían counterparts. This was considered one of the main obstacles for advancing cross-border integration as

> "Portuguese regions have strong difficulties to implement adopted decisions due to their minor powers and resources."

From a Portuguese perspective,

> "there is the perception that Spanish private partners are more supported by their public administrations than the Portuguese ones in the formulation and implementation of the projects."

This can be attributed, in part, to their greater regional competencies, powers, autonomy, and budget.

As a final point, it is important to acknowledge the role of informal networks in the Guadiana situation. Whilst the differences of the regional administrative structures may constitute a very real barrier to effective transboundary cooperation, in reality much of the "transboundary cooperation and links are more informal than institutionalised". However, difficulties can also arise in knowing

> "who the contacts are at the other side of the border to carry out common projects. Some other barriers are the lack of political continuity, the lack of a strategic approach, reciprocal mistrusts and lack of entrepreneurship."

4.4.3 *The creation of vertical networking with higher-level authorities, especially the EC*
According to Perkmann (2002a), the success of Euroregions can be judged within the overall context of cross-border strategies, and the strength of cooperation which has developed between different actors and their activities. This is reflected in the case of the Euregio, for instance, which has acted as a genuine policy entrepreneur, exploiting the advantages of its position, and establishing excellent vertical and horizontal relations with other actors operating at different levels. This has enabled it to position itself strategically, to mobilise actors and resources effectively, and to establish and maintain

[5] INTERREG III-A (2004 – 06).

a special relationship with the European Commission, one based on mutual interest and networking (Perkman, 2002a). In Perkmann's words

> "the EUREGIO actors not only opportunistically exploited windows of opportunities but actively shaped the institutional space in which it was acting. In particular, this concerns the long-term alignment of the EUREGIO to the parameters of EU Cohesion Policy, thereby positioning itself as perfect policy addressee for EU cross border cooperation measures" (page 13).

GIT (2008) acknowledged deficiencies in multilevel institutional cooperation in the area, calling for more involvement of local, regional, and national administrations and greater cross-border integration. Several issues contribute to this institutional deficit. Firstly, GIT has not had active involvement with the development of many INTERREG projects, and as such

> "the implementation of each project has been conducted mainly by the Steering and Monitoring Committees of the project itself, with no interference from GIT or other coordinative bodies", according to a public manager.

In response, GIT staff counter that "their role is not to assume such a leadership, but to carry on coordinative tasks and administrative support", arguing that, being an INTERREG project, and not an autonomous organisation, the relationship with other projects is one of equality or 'inter pares'. Though it can be argued that its recent creation in 2004 influences the limited extent of vertical integration, and a general lack of involvement with the implementation of transboundary projects, it is problematic that some partners of INTERREG projects were not even aware of the existence of the GIT office. Furthermore, there was general consensus amongst key actors that GIT has made only a limited contribution to vertical integration between the supranational, national, and local levels (though there was recognition that "there is fluent cooperation between GIT and other sectoral departments of the Government"). The lack of integration was also identified by research carried out which failed to detect cooperation with other national-level transboundary organisations.

4.4.4 *Adoption of a strategic approach*

The lack of a strategic approach to collaborative working between different actors has had important repercussions in the way projects have been executed and the way they have performed. Coherence is seen as one of the major problems, with

> "INTERREG projects being executed by partners without connection among them and by pursuing their own objectives", according to a Spanish expert in transboundary cooperation.

Synergy is also an issue, one highlighted by the majority of stakeholders, with some projects being

> "oriented to nature conservation and the recovery of water bodies, while others had an opposite effect, for example promoting models of intensive tourism based on golf courses", as stated by a Spanish NGO representative.

According to a Portuguese NGO representative's perspective,

> "cooperation mechanisms between partners at both sites of the border have been mainly informal, according to the will and personal relationships of technicians involved in the projects. Coordination with other INTERREG projects, or any strategic approach with an integrated view of the projects, does not exist."

Additional comments provided by the Portuguese public administration suggest that

> "it is also lacking an assessment of results from each project, even though there is a general perception of satisfaction among the partners."

GIT has recognised the need for improvements in institutional process and, according to the interviews in July 2007, there is an organisational will to set up

and lead a participative process that is conducive to the development of an integrated transboundary strategy (Spanish – Portugal Operational Programme on Cross Border Cooperation 2007 – 13[6]). The workshop organised by GIT on Spanish – Portuguese cross-border cooperation 2007 – 13 and held in Seville in July 2008 and the elaboration of a preparatory study on transboundary cooperation issues in the area constituted two important steps towards the definition of such a strategy. It is intended that this will encompass several domains (including regional development, energy, environment, transport, and rural development), providing a more comprehensive and integrated overview, and ultimately improved coherence and direction to all the transboundary projects operating in the zone. At the time of writing, however, GIT has made limited progress with the formulation of this integrated transboundary strategy.

4.4.5 *Integration of climate change and adaptive water management considerations with regional development goals*

To date, evidence for the integration of climate change and adaptive water management considerations into cross-border activities in Lower Guadiana remains elusive. According to the interview carried out, there were three main INTERREG III-A projects in the last period (2003 – 08) which were tasked with environmental conservation: FAJA (environment restoration and sustainable development of the Faja Pirítica Ibérica), AMEU (Improvement and Recovery of urban environments), and SUSTER21 (development of Agenda 21 in municipalities of Lower Guadiana). None of these projects explicitly addresses the issues of water management and climate change. It is also worth pointing out that the "Environment, heritage and risk prevention" section of the GIT (2008) documentation also makes no mention of climate change or water management.

The lack of integration, and apparent insensitivity of regional actors to these issues, was also highlighted by the participants at the Mertola workshop in 2006. We suggest that this lack of integration can be attributed, at least in part, to two key institutional barriers. The first of these is the absence of strategic political direction in the form of an overarching sustainable development strategy for the river basin. The second, and of critical importance, is the perception (and reality in terms of implementation) that regional development is of paramount concern at the current time. This is reflected by the stakeholder comments:

> "climate change is not seen at all as a priority for the main stakeholders in the area, who perceive they have to attend other immediate problems such as unemployment or infrastructure development",

and, more frivolously, "climate change is for penguins".

5 Conclusions

Consensus is building amongst both research and policy communities that more flexible, and inclusive, adaptive responses will be needed to effectively address the complex and uncertain threats associated with future global environmental change. This is especially important in circumstances where socioecological interactions take place in a transboundary context (as is the case with many European river basins). Having unique institutional frameworks which are capable of bringing together multiple actors, introducing and discussing new ideas, and reshaping political processes according to territorial needs, the evolution of new cross-border organisations (Euroregions, Euregios, Working Communities, etc) is considered to be a valuable contribution to building adaptive capacity at the regional scale. By definition, their area of influence

[6] http://ww.dgfc.sgpg.meh.es/aplweb/pdf/DescargasFondosComunitarios/

is shared by at least two countries, they enjoy a flexible structure based on networks of both public and private actors, and their capacity to intervene in several spheres of activity and regulatory areas is relatively high. From this perspective, these new institutional arrangements can also be considered particularly suitable for mainstreaming climate change and adaptive water management considerations into regional development strategies, and seeking to steer progress towards a more sustainable pathway in the longer term.

In this paper we seek to shed light and contribute to provide research criteria for assessing the capacities that European cross-border organisations have when facing the challenge of performing adaptive management practice in the face of global change in transboundary river basins. To assess this 'enabling' capacity in reality, we have commented on research which has analysed the adaptive management role of working communities Andalucía – Algarve and Andalucía – Alentejo as experienced by its operational unit, the GIT. In order to do that we have applied to GIT a framework of success 'criteria' as developed by Perkmann (2002a; 2007), which is based on the concept of policy entrepreneurship. Ultimately, we argue that the promotion of adaptive water management practice in cross-border organisations depends on the implementation of policy entrepreneurship criteria (organisational skills, horizontal and vertical networking), combined with two further variables: the presence of a strategic approach and the explicit integration of adaptive water management and climate change considerations into the development goals of the cross-border organisation.

The results of this operation have highlighted several deficiencies affecting the performance of the GIT and its weak interaction with multiple actors on both sides of the border. As a consequence, we argue that cross-border organisations such as these require additional resources and dedicated effort in order to improve the design of current institutional arrangements and the organisational capacities which are ultimately needed for effective, and collaborative, adaptive management. Limitations of GIT activity can be attributed to associated inequalities of power distribution on the two sides of the border, differences in administrative rules, a lack of vertical and horizontal institutional cooperation, a lack of NGO and private actor involvement, as well as its current organisational structure. Importantly, the GIT has not yet been constituted as a stable and autonomous organisation, but rather as an INTERREG-funded project outcome which is subject to periodic reformulations, uncertainties about its future continuity, and a remaining dependence on the political will of regional administrations. This situation (combined with its relatively recent creation and a lack of time to establish mutual trust relationships) restricts its capacity for assuming leadership among regional networks of public and private actors, and appropriating cross-border activities in the area. These factors indicate a low level of entrepreneurship, translating into limited potential for influencing adaptive management practice. We also contend that the absence of an overarching and long-term integrative strategy with a clear sustainability vision has resulted in a proliferation of EU-funded projects in the region with little coherence or connection, even to the extent that projects may actually pursue contradictory objectives.

However, on a final note, there are promising signs indicating that some of these institutional issues have been identified and there is at least an expressed political desire to attempt to address and overcome obstacles. This has been noted as an important development by regional actors particularly in light of the next INTERREG funding period (2007 – 13). Responding to this agenda, GIT is now planning to elaborate on, and implement, a transboundary and participatory strategy for the period 2007 – 13. If successful, it is likely that the GIT will play an increasingly more central and entrepreneurial role in developing institutional and social capacity in the river basin, consolidating

its position as an organisation capable of leading a more transition-focused process that both mobilises civil society actors and coordinates activity across governmental jurisdictions. By linking different domains and networks, whilst taking into account cross-sectoral issues and new opportunities derived from climate change discourse and practice, this is a progressive step towards more sustainable development in the Guadiana region.

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