

Traditional paradigms meeting ecological modernisation: The contradictory double dividend of the Odelouca dam in the Algarve, Portugal

Paper for presentation at Berlin Conference - 22.02-23.02.2008

Panel B6

First Draft. Please don't quote!

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Abstract

In the overarching context of Southern European coastal development pressure the present paper reconstructs the implementation path of the Odelouca dam in the Algarve, Portugal. First designed in the beginning of the seventies, the dam is currently being built as last missing piece to a “region-wide” system of infrastructures to shift water supply from ground- to surface waters and make water of drinking water quality available abundantly and ubiquitously. Several factors seem to have re-enforced the necessity of the realisation of the dam, making it a self-fulfilling prophecy. The paper reconstructs how the justification of the dam and the measures accompanying the implementation of the dam have changed over time responding to changing European environmental politics and paradigms and how over time its realisation was made indispensable. The ISWSS and the Odelouca dam characterized Portuguese water policy making at the end of the dictatorship. Subsequently, institutional and technological innovations, many of which originated from the European level policy agenda on ecological modernisation were instrumentalised to implement the dam rather than to depart from the unsustainable path of development that the completion of the ISWSS seems to favour. Measures are implemented to artificially embed the dam into a win win situation between the environment and the economy and legitimize it in the context of European subscription to the paradigm of ecological modernisation. We argue that in this context we can almost speak of deceptive politics deliberately initiated by the national level. The Odelouca dam is a good example of a long term infrastructure project and the way it is moulded by economic, societal, political, institutional and technological innovations and development. The paper uses the Strategic Relational Approach as developed by Jessop and Hay for conceptualising the contingent relationship between agents, strategies, actors’ capacities and structures in which they are embedded. National administrations remain the dominant actors determining the outcome of European environmental politics on the ground. Specifically, independent expertise and data regarding very local developments needs to be made available to European policy makers to effectively cross-check national politics.

Introduction

For several decades already Southern European coastal zones are under increasing development pressure. Traditionally, they were peripheral areas dominated by agricultural activities, often for subsistence purposes. Starting almost forty years ago coastal mass tourism started to develop and restructured the corresponding areas. Often it became the dominant economic activity, which is still expanding today (Bramwell, 2004). Wherever morphological conditions and water availability allow, it is complemented by agricultural activities. Intense irrigation agriculture increasingly turns out to be a highly profitable activity that equally keeps expanding throughout the last decade, often with considerable direct or indirect subsidies from governments or European monies. Intensifying development pressure occupies large sections of coastal land, requires increasing amounts of freshwater and competes for them. Often they overuse locally available aquifers. Throughout these several decades of development environmental, regional development and infrastructure politics concerning European territories changed significantly impacting the way Southern European coastal zones are institutionally governed and reconfiguring the actor constellations involved (Börzel, ????, Baker et al., 1994).

In this overarching context of Southern European coastal development the present paper reconstructs the implementation path of the Odelouca dam in the Algarve, Portugal. First designed in the beginning of the seventies, the dam is currently being built as last missing piece to a “region-wide” system of dams, interconnecting pipes and infrastructures to shift water supply from ground- to surface waters and make water of drinking water quality available abundantly and ubiquitously. The paper reconstructs how the justification of the dam has changed. Furthermore, the measures accompanying the implementation of the dam have changed over time responding to changing European environmental politics and paradigms. We will pay specific attention to how the politics surrounding the construction of the dam subsequently incorporated some of the ideas proposed by ecological modernization, leading to deeply contradictory outcomes. We argue that in this context we can almost speak of deceptive politics deliberately initiated by the national level.

With more than thirty years passing between design and implementation, the Odelouca dam is a good example of a long term infrastructure project and the way it is moulded by societal, political, institutional and technological innovations. To understand the politics surrounding it, we have to understand its technical interaction with the larger regional Integrated Surface Water Supply System and the way this influenced the politics concerning its implementation.

Also, we have to understand its envisaged role for overall water management in the region. The ISWSS and the Odelouca dam were designed on the basis of the politics, institutions and perceptions which characterized Portuguese water policy making at the end of the dictatorship. Subsequently, institutional and technological innovations, many of which originated at the European level were instrumentalised to implement the dam rather than to depart from the unsustainable path of development that the completion of the ISWSS seems to favour.

The paper aims to analyse and, ultimately, explain the relation between the implementation of the Odelouca dam and broader water and environmental policies and evaluate their internal coherence referring to symbolic contradictory and unintended contradictory policies. For this purpose we borrow from the Strategic Relational Approach as developed by Jessop and Hay for conceptualising the relationship between agents, their strategies and their contingent articulation with actors' capacities and the physical, institutional and discursive structures in which they are embedded. We analyse the empirical case study using these analytical concepts, in order to understand the way the Odelouca dam is being implemented and how the various symbolic contradictory and unintended contradictory policies and their consequences emerged. The SRA emphasises that the selectivity of structures reinforces certain strategies and configurations. By implication developments are path dependent. As the case study will show, actors instrumentalised the shaping of structures at several moments in time in order to strategically shape the path of development of water supply in the Algarve favouring the completion of the ISWSS.

The argument of the paper develops as follows: in the next section we briefly describe the political agenda of ecological modernisation and its relation to European environmental politics. In this context we briefly detail our conception of contradictions and their relation to symbolic politics. Subsequently, we outline the strategic-relational approach for conceptualising the case study. The case study will be described in two sections: first we elaborate on the case study setting. We describe the physical setting and the broader social, economic and institutional development and the ISWSS of which the Odelouca dam is one part. Second, we describe the strategic interactions of actors that shaped water supply and the implementation of the Odelouca dam. We analyse the case study account and the role of specific agents and physical, institutional and discursive structures and the way actors shaped these structured to their ends. We conclude the paper drawing out the symbolic contradictory and un-intended contradictory policies that shaped the case study and the way they shape

water supply in the Algarve. Finally, we relate the observations that we made in the case study to the broader problematics of long term infrastructure development in the context of European environmental policy and the development of European peripheries and coastal zones.

The case study is based on extensive fieldwork that aimed at an in-depth understanding of water use development in the Algarve between the accession of Portugal to the European Union and today (Thiel, 2005). 51 interviews were carried out in this context, the national and regional newspapers were evaluated representing the principal political currents and grey literature was reviewed. The implementation of the Integrated Surface Water Supply System for the Algarve was the main issue in water politics for the Algarve in the period of time studied. Therefore, the fieldwork resulted in the vast data referred to in this article on the dynamics involved into the construction of the Odelouca dam as significant missing piece in ISWSS.

Ecological modernisation, European politics and contradictions in policy outcomes

For Hajer (1995: 30) ecological modernisation has become the most credible way of “talking green” in spheres of environmental policy making”. Since the beginning of the nineties ecological modernisation has been accepted as means to overcome the ecological crisis in the developed world. The theory suggests that ecological and economic goals can be integrated in win-win situations (Baker, 2007). For this purpose it principally advocates institutional and technological reform. It requires the integration of environmental objectives into other sectoral policies (Environmental Policy Integration – EPI), new environmental policy instruments (NEPIs – Jordan et al., 2003) and sector-specific activities, particularly in the industrial sector, where it involves the invention, innovation, and diffusion of new technologies and techniques (see also Gouldson and Murphy, 1996). According to Blühdorn (2007) “proponents of ecological modernisation reframed environmental problems primarily in technological, economic and managerial terms, ...softening the tension between (a) technology and ecology, (b) economic growth and ecology, and (c) the competitive market and ecology. ...[I]t ...made technological innovation, economic growth, capital accumulation and consumerism in principle acceptable” (Blühdorn and Welsh, 2007: 194).

In the debate of ecological modernisation analysts distinguish between ecological modernisation as concept to analyse the relation between institutional developments in

different domains of modernity and environment and ecological modernisation as political programme (Spaargaren and Mol, 1992). The latter will be relevant for evaluation of the case study we present in this paper. In relation to ecological modernisation as political programme Pepper (1999) summarised the following aspects:

- policy making principles: from react and cure to anticipate and prevent; integrated pollution abatement, integrating environmental concerns into all ministries, techniques allowing firms to integrate environment into cost-risk calculations, such as polluter pays, cost benefit analysis, risk analysis, precautionary principle, tradeable pollution rights, pollution charges and taxes.
- A new role of science in policy making, especially ecological systems science, Experts take a central role
- Environment protection seen as a source of growth where low and non-wasteful anticipatory technologies generate profits
- Nature reconceptualised as a public good where external costs need to be internalised
- Burden of proof is reassigned to the suspected polluter not the damaged party and policy making is opened up to new participation and partnerships, e.g. between business and NGOs. Voluntary agreements rather than command and control regulation are encouraged

In various treaties and specifically in Environmental Action Programmes (EAPs) the European Union committed itself to the principle of sustainable development. However, Spaargardan and Mol (1992) write that this is only due to its vagueness and its attempt to integrate ecological quality and economic growth via industrialisation. At the end of the nineties it increasingly equates its commitment to sustainable development with ecological modernisation, through which it tries to marry environmental protection policies with economic growth (Baker, 2007: 297). Throughout the Cardiff process Environmental Policy Integration obtains a central role. Several White Papers¹ and reports² throughout the nineties and at the turn of the century, and later on the Lisbon strategy re-enforced the belief that environmental protection can enhance competitiveness of the European Union leading to a double dividend in terms of jobs and environmental protection. However, Baker continues to write that much of this did not surpass the stage of declaratory or even empty (as exclusively symbolic) politics (Baker, 2007). At the latest by the middle of the current decade and with the re-launch of the Lisbon Agenda the European Union had prioritised the economic and commercial dimensions of sustainability at the expense of ecological and social dimensions (Baker, 2007 quoting Jacqueline MacGlade of the EEA).

¹ Growth, Competitiveness and Employment of 1993 (CEC, 1993)

² Economic Growth and the Environment: Some implications for policy making (CEC, 1994); Environmental Technology for Sustainable Development (CEC, 1994).

In fact, Baker (2007) argues that ecological modernisation and sustainable development as proposed by the Brundtland report in 1992 are fundamentally different³, making the EU's subscription to sustainable development merely symbolic rhetoric, empty of effort to actually bring about genuine change through engaging for example into serious efforts on EPI.

Ecological modernisation, as misunderstood strategy for implementing sustainable development, allows the centrality of economic interests to be retained in the environmental debate as well as it provides reassurance about the future development of the integrated European economy (Baker, 2007: 310) in the face of uncertainty, and “in a context where the process of ever faster societal change seems to have become disoriented and irrational” it promises that “with minor amendments, everything can continue as before” (Blühdorn, 2001: 195). Adherence to ecological modernisation allows the European Union to subscribe to the broader agenda of sustainable development (Baker, 2007) as device to give the European Union an integrating and possibly mobilising, but principally symbolic policy.

The above interprets ecological modernisation as discourse connecting environmental policy to almost unrestrained growth and therefore legitimising a “business as usual” approach to development by the European Union policies. Blühdorn even goes one step further suggesting that the ecological modernisation discourse is necessary quasi as self-deception of societies in the post ecological age in order to maintain unsustainable practices amidst socially acceptable alternatives that are (Blühdorn, 2007: 198).

Below we argue that the ‘on the ground’ case study of the implementation path of the Odelouca dam in the Algarve, was significantly moulded by the increasing necessities of the European Commission to legitimize its policies through re-enforcing the adherence of member states to political programmes modelled on elements of ecological modernisation to reshape member states’ development policies. Blühdorn and Welsh (2007: 190) write that political responses to this agenda exhibit “a confounding complexity – because situated

³ The North South agenda is sidestepped by the ecological modernisation strategy. Ecological modernisation implies exportation of highly polluting economic activities. It may lead to protection of natural resources in the developed world at the expense of exploitation in the developing world. Ecological modernisation refers only to decoupling and does not consider changes in Western habits of consumption as sustainable development requests. Also, it limits measures to economic and technocratic actors as opposed to the deeper engagement with normative principles such as intra and intergenerational equity as opposed and participation of a wide set of actors (Baker, 2007).

publics respond to progressive measures in unanticipated and contradictory ways” (Blühorn and Welsh, 2007: 190).

Specifically, we argue that the European Commission’s approach to sustainable development is directly translated into the contradictory way development policy is implemented in Portugal. Reasons for this outstanding manifestation of European level necessities for legitimization are the institutionally relatively weak Portuguese environmental administration. Their actions are frequently questioned by environmental NGOs which demand for cross evaluation/legitimation of national policies by the European Commission. Furthermore, a large part of Portuguese development/infrastructure policies are co-financed by the European Commission. Specifically, throughout the nineties many of these projects have been criticised for infringing European environmental regulations (on Regional Pol. in: Lenschow, 2002). In order to overcome this publicized critique and as partial success of EPI on the European level (Lenschow, 2002) after the turn of the century, the European Commission applied specific care to insure co-financed projects could not be legally challenged.

For the case study we present below this meant that, as soon as the project’s legitimacy regarding European legislations was in doubt, questioning the legitimacy of the European Commission’s engagement and that of the Portuguese policies, a) disputes between promoters and opponents of the dam focussed on definitions, which were decisive for its legal interpretation on the European level. Many of these interpretations were based on a shaky and certainly biased knowledge base and judgemental scenarios. Therefore, in order to legitimize the official neglect of considerable remaining doubts regarding the project b) it had to be situated in an apparent win- win situation between development and environmental policy and c) institutional and technological innovation following the agenda of ecological modernisation had to accompany the project given that it had a developmental bias.

For European bureaucrats add-on measures inspired by the ecological modernisation tool kit of policies became the selling points of an otherwise clearly development biased project, whose legitimacy was at least doubtful. However, as we can observe below, this conglomerate of initiatives led to a highly contradictory policy outcome on the ground. The aim of the public sector was to secure the implementation of the dam and its co-financing by the European Commission or the European Investment Bank, which is subject to the same regulations.

Concretely, we could observe three types of contradictions within the conglomerate of measures which accompanied the implementation path of the Odelouca dam. These measures contradict or undermine the underlying purpose of the dam, which is guarantee current and future ubiquitous water consumption in order to secure uninhibited development of agriculture and tourism. To some extent these contradictory policy measures can be linked to different types of what Blühdorn (2007a) calls symbolic politics in the sense of placebo or substitute politics. Blühdorn (2007a) writes that “from the perspective of the declared purpose ...such political action may be described as *replacement action* or *action replacement*”.

Blühdorn’s categorization causes some problems of application as we are confronted with an interlinked set of measures that are to balance each others effect, effectively or in the way the policy is perceived by the public/ or interest groups. Interlinked sets of measures are often the outcome of negotiations between the European Commission and member states’ authorities that are in potential conflict with European regulations are inherently contradictory. They contain policy packages elements of which are contradictory as they present a compromise on several (contradictory) policy objectives which are introduced by the by various participants in the politics at stake. From the case study below we conclude that parts of these policy packages may be symbolic, relatively ineffective, “replacement actions” that serve the purpose to mask (or even deceive about) the actual agenda that underlies the policy package, (and whose effective delivery is paramount). The deliberate introduction of such contradictory policy measures into policy packages then becomes a strategy to soften or cover up unpopular or potentially illegitimate policy objectives. Such contradictory symbolic elements of policies open up scope to strategically use spatial or temporal displacement strategies, i.e. measures that contradict the principal objective of the policy package are applied at times or in locations, where they do not undermine the objective on which the policy is to be as effective as possible and that is to be masked or covered up by the symbolic policy. Such strategic temporal or spatial displacement uses the fact that only the best informed experts with local knowledge actually gain the view of interconnected policies and measures that may be contradictory from a systemic point of view.

We argue that at the national, regional and local level symbolic contradictory policies informed by the ecological modernisation tool box were used to mask or cover up the principal nature of the policy to construct the Odelouca dam. Nonetheless, we leave it open if ecological modernisation as strategy to implement sustainable development has an integrative symbolic or similarly a replacement action character for European policy makers.

For analysing the policy set of measures connected to the implementation of the Odelouca dam we distinguish displaced contradictory symbolic measures that have been implemented deliberately to mask the principal purpose of the project. Second, we single out those displaced contradictory measures that are the unintended consequences of the implementation path of the dam and which again could have questioned its necessity if temporally and spatially properly applied. Finally, a third type of (systemic) contradiction can be made out, concerning the function of the dam as facilitating expanding possibilities of economic activities in the Algarve and absolute limits on external/ or natural conditions of production that the ISWSS was to overcome. O'Connor (1996) refers to this underlying issue as the second contradiction of capitalism. In a different article we consider it as crucial contradiction underlying Southern European coastal development (Thiel, forthcoming).

Conceptualising structure - strategy - agency - capacity

For Brenner (2004: ??) the strategic relational approach developed by Jessop and Hay is principally coined towards the analysis of the role of "*political strategies* in forging the state's institutional structures and modes of socio-economic intervention". In this paper, we broaden the strategic relational approach to explicitly consider the physical dimension as a structural element that is strategically shaped by actors. Therefore, we centre the approach on the way agents forge institutional, physical and discursive/ conceptual structures. We considered Jessop and Hay's approach as most useful among conceptualisations of the dialectics of structure and agency (see for example Giddens, 1984 and Archer, 1995). We judged the relatively simple set of concepts that the strategic relational approach uses as most suitable for empirical analysis. Furthermore, the strategic relational approach explicitly conceptualises the role of time and space which were significant characteristics of capacities of agents to shape structures. Agents have differential capacities to access specific "time-space envelopes".

Characterising its principal elements Hay called the strategic-relational approach the "structure, strategy, agency approach" (Hay and Jessop, 1995, p15). It relates institutional, physical and discursive/ conceptual structures and agency to each other in a specific situation, by introducing strategy as intentional conduct oriented towards the environment and action motivated by the intention to realise certain outcomes and goals (Hay and Jessop, 1995, p129). Agency, in relational terms, becomes strategic action, and structure becomes strategically selective institutional, physical and discursive context, combining the 'doubled' dualism of structured context (or action setting) and situated agent (or contextualised actor) (Hay, 2002).

Structures have what Jessop and Hay call structurally and discursively inscribed strategic selectivity. Actors perceive this strategic selectivity of structure through mediating discursive paradigms, which shape and distort this very same structure but which create certain cognitive/ conceptual maps of structure. Actors are conceptualised as differentially capable of the reflexive orientation of their strategies. Strategies are assumed to be the result of a combination of (1) practical consciousness and (2) strategic reflexiveness (Hay and Jessop, 1995, p5). They are contingent on the situation of actors in relation to the resources available over different time horizons and spatial scales, the strategic selectivity that the pre-existing hierarchy of levels of physical and social structures, and on the discursively selected way the actor perceives that structure (see also Hay and Jessop, 1995, pp8-11). The contingent relation of the actor to his context and to the structural context determines the success of an actor's strategy. Otherwise, structural constraints are imposed on the actor by the more powerful. Actors transform the strategic selectivity of future strategies and are able to learn from their action experience (Jessop, 2001).

We want to emphasise several features of this approach: (1) through selectivity structures reinforce certain strategies and configurations and therefore lead to path-dependency and path-shaping. (2) When actors lack access to a specific "time-space envelope" by which a structure is bound, or are unconscious of it, relative structural stability can be the result, as they reflexively reconstitute the institutional matrix and uphold what Jessop calls "spatio-temporal fixes". Nevertheless this "structural coherence"⁴ can involve structural contradictions and strategic dilemmas (Jessop, 2001, p1228). (3) Jessop and Hay define power as "the ability of actors (whether individually or collectively) to have an effect upon contexts which define the range of possibilities of others" (Hay, 2002, p185).

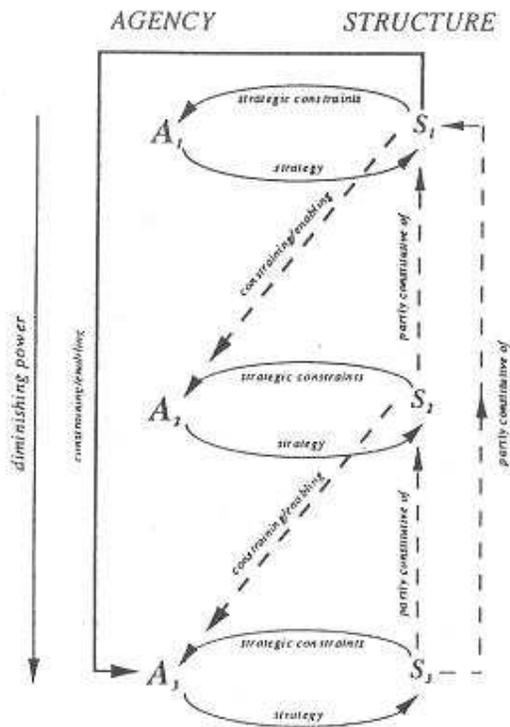
In order to sharpen the subsequent analysis we delineate forms of capacity through which actors exercise power over water service provision and the implementation path of the Odelouca dam. As *legitimizing capacity* we consider the power to appoint an actor for a specific position (including people's representatives in democratic polities or the appointment of ministers by the Prime Minister). *Authoritative capacity* implies authority to act. *Regulatory capacity* means the capacity to draft and adopt regulations that grant authoritative power, as well as legitimating, financial, physical and socially constructive powers. *Financial capacities* shape water service provision through the use of financial means. *Physical*

⁴ A term used by Jessop (2001) in recognition of Harvey (1982).

capacity implies control of the means to physically shape water use. In the case study reference is made to the combination of financial and physical capacities an actor exercises. *Socially constructive capacities* are associated with holding and producing societal knowledge and include shaping perceptions. It operates through a variety of channels such as the media, science, or direct face-to-face interaction. The various forms of power overlap and interrelate⁵. The strategic interaction account will reconstruct physically, institutionally or discursively selective moments in which agency was exercised in the light of actors' strategies and capacities to pursue them. The key relations of the strategic relational approach have been neatly summarised in two complementary figures by Hay and Jessop. Physical, institutional and discursive / conceptual structures are broad categories whose development is tightly intertwined. Not least for this reason problems of categorisation and delimiting cause and effect emerge. The time dimension facilitates distinguishing change, which often occurs on different scales.

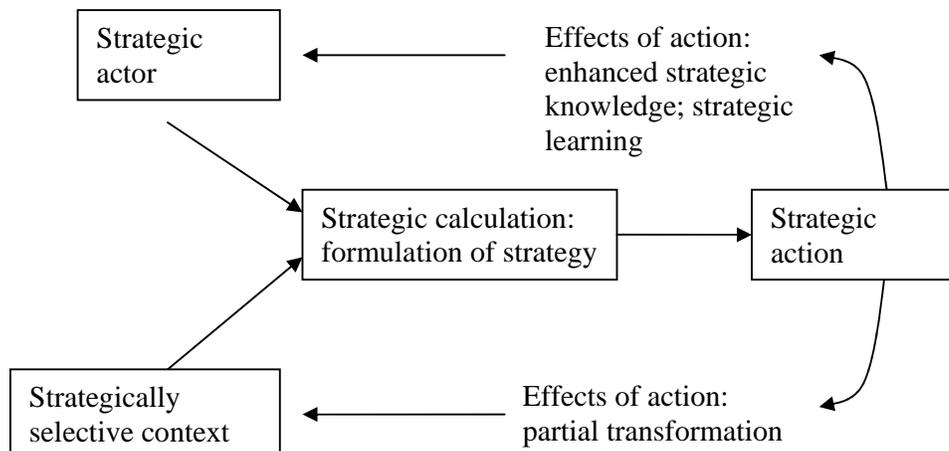
⁵ The physical, the authoritative as well as the socially constructive capacity decisively depend on the financial capacity of the actor. In modern capitalist democracies those actors that have legitimating or regulatory powers can also potentially hold authoritative as well as financial, physical, and socially constructive power. At the same time they can depend on other actors and powers for the realisation of water use. A varying hierarchy of capacities exists, as the range of capacities are interrelated as they enact and depend on each other. The effectiveness of the exercise of the regulatory and authoritative powers depends on the effectiveness with which an actor holding them introduces the legislated rules into the actually applied water use rules. Hence, the effectiveness of the actor that has been legitimated to regulate and exercise authority depends on the capacity to *implement* formal rules.

Figure 1: Structure, agency and power



Source: Hay and Jessop, 1995

Figure 2: Structure, strategy and agency in the strategic-relational approach

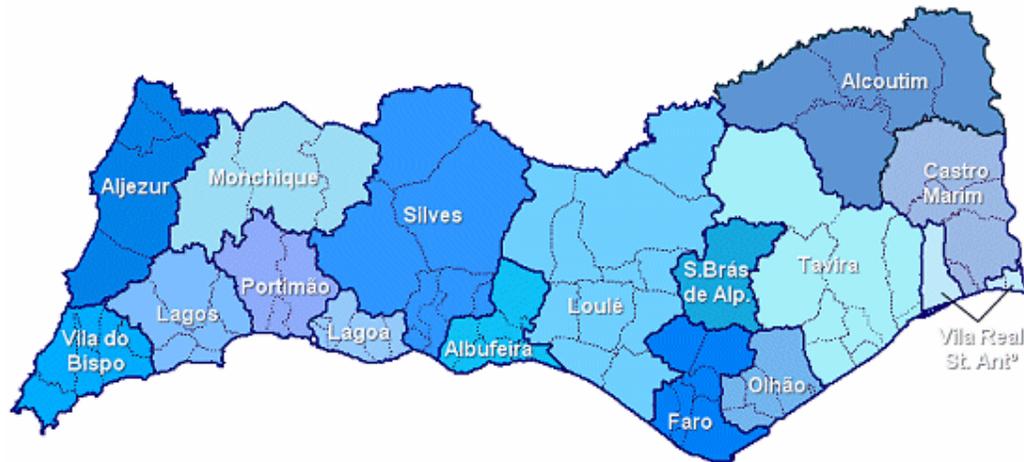


source: Hay, 2002, p131

The case study – the physical setting

The Algarve is the southern-most district of Portugal which consists of 16 councils (concelhos). At the district level (Algarve - distrito) the national administration has 'deconcentrated' branches.

Figure 3: The concelhos Albufeira and Silves



Source: Instituto do Ambiente, downloaded from CCDR, 2005

The area of the Algarve West of Faro, the district capital, is called Barlavento, East of Faro is the Sotavento. The interior of the Algarve is constituted by the northern, hilly and inaccessible 'stripe', the Serra and the lower Barrocal; which is delimited by a flat coastal strip, the Litoral, (CLAGRHAA, 1988).

Figure 4: Area of the river basin and morphological subregions



Source: MAOT, 2000a

traditional neglect of aquifers by the NWA they were hardly ever studied⁷. Licensing, planning, charging for water use did not exist at the time.

With the 1976 constitution local councils obtained competences to license and tax land use and to provide and charge for basic sanitation services (drinking water supply and sewage treatment).

In the beginning of the eighties agriculture started to lose significance. The National Agricultural Administration agreed to shift parts of the ISWSS to population/ tourism supply. However, the NWA could not convince local authorities to adhere to the scheme. Reasons were supposedly lack of technical understanding and local egotisms after decades of disempowerment before the revolution. Nonetheless, because of great water scarcity the central administration started building Beliche in the Sotavento, and, once European funds became available in 1986, Funcho in the Barlavento. The question how to finance and regulate the interconnection of the dams was not resolved.

The construction of Funcho reflected the aim to realise the overall ISWSS. The dam added little storage capacity, as it was located upstream from the Arade dam which provided water for irrigation. It was chosen in order to balance infrastructure and maintain its "regional" dimension and to justify water abstraction for populations/ tourism. For these purposes water could not directly be drawn from the Arade storage downstream, as it was destined at irrigation. However, the need for constructing the more significant Odelouca dam was maintained. With this strategy the NWA and consultancies deceived the minister aiming at the realisation of the largest possible extent of the ISWSS.

In the beginning of the nineties the quality of water supplies had deteriorated so that the European drinking water directive was not complied with. On the peak of a drought water supply was even cut several times in the coastal tourism hotspots. The perception of mismanaged mass tourism development penetrated policy making. As response to a slump in visitor numbers the "quality tourism" paradigm became the dominant strategy and discourse among policy makers to revive the tourism sector and to attract high spend visitors. For the water sector it translated into the need to improve the quality of water services (sanitation and

⁷ As one commentator described it, for several decades the water sector was characterised by great stability. It was dominated by an "aristocracy of water" constituted by the NWA, the National Agriculture Infrastructure Institute, consultancies, construction and agricultural sectors. The commonly held belief was that "any investment into infrastructure for water was viable" and that any drop of water reaching the sea was "lost".

drinking water supply) and to provide water for landscaping, golf courses and swimming pools.

Coastal tourism councils felt that their economic development and their strategy of quality tourism was under threat by lack of high quality water services. After a media campaign of the Portuguese environmental NGOs the European Commission put pressure on the Portuguese administration to comply with the European drinking water directive. However, the national administration had no control over councils. In the Algarve, interior councils had insufficient technical and financial capacities to increase water supply coverage, or monitor water quality. Water was hardly charged for but perceived as a social service/good. This constellation coincided with the planning period for the Cohesion fund period 1994- 1999. It could co-fund relatively large projects, which were ready for implementation such as the ISWSS.

The national administration used European funds as stick and carrot to push councils into the following physical and institutional set-up of water supply (see also Thiel, forthcoming): A regional water company was founded (64 directly or indirectly state owned, 36% locally owned) to implement and operate the "em alta" network, interconnecting dams, water treatment plants, pumping stations and submission points to local networks. This company received the concession for the "multi-municipal system" by an act of legislation of the national government. Member councils were obliged to consume certain minimum amounts of water and pay per m³ consumed, which was expected to be much higher than local provision prices. Aquifers would not be used anymore but become "strategic reserves" for extreme situations of drought. Their pollution from agriculture and golf courses would not anymore threaten drinking water supply.

For the Barlavento, the Odelouca dam would be the principal surface water source that effectively added capacities to the existing scheme. Located in the Ribeira de Odelouca it additionally integrates the basins of the Ribeiras de Odelouca and Monchique into the ISWSS.

Most councils adhered soon and in 1998 the ISWSS started functioning. By 2001 all councils were interconnected relying on the three dams, Funcho (Barlavento), Odeleite and Beliche (Sotavento). In 2007 construction of the Odelouca dam was only started. In the meantime, in order to compensate for its lack an additional well was used, which was originally destined at agriculture.

In parallel in the first half of the nineties water and land use management was re-configured. A regional land use plan was to guide local plans in order to better control and coordinate development. However, its implementation was not very effective not least as the national government granted exceptions, local authorities did often not respect it, and previously issued building licences still extensively legitimized construction. Local authorities promoted development to secure construction tax income. Licensing of any kind of water use and river basin plans became obligatory. The Environmental Impact Assessment (EIA) regime was adapted to European standards.

Strategic Interaction account

We briefly introduce the principal actors before we describe how actors developed their strategies and actions in interplay with the institutional, physical and discursive/conceptual structures, into which they were embedded.

Actors

With regard to their objectives in relation to the Odelouca dam we can distinguish the national, regional and local public and private sector supporting the construction of the dam and the national and regional environmental NGOs opposing it. At the supranational level the European Commission's Directorate General (DG) for Regional Policy seems to favour the dam, while DG Environment's unit working on the Habitat Directive seems to be more sceptical.

All national and regional public sector actors involved into the construction of the dam depend on the Ministry for the Environment, which appoints and therefore legitimates key staff of all national and regional administrations. The ministry also regulates laws and regulations, it has the authority to implement them and it has great influence on how European funds are allocated within Portugal.

The *National Water Authority (NWA)* is the principal executive agency administering water uses in Portugal. Its staff accumulates technical know how and data on Portuguese waters, licenses surface water use and plans and constructs infrastructures. It provides strategic guidance for the development of water services (MAOT, 2000)⁸. Traditionally, it adopted an engineering approach favouring water supply policies and surface water infrastructures,

⁸ Interview: Dr. Pedro Mendes and Eng.º João D'Avillez, INAG, Lisbon, 12.2.2003)

supported by the agricultural sector, consultancies and construction companies⁹ (Nunes Correia, 1998). Predisposition to surface waters is also associated with the dominance of engineers over geologists, which have greater understanding of aquifers.

The *Nature Conservation Institute* (ICN) has the authoritative capacity to designate and manage nature conservation reserves in Portugal (e. g. Natura 2000).

Aguas de Portugal (AdP), of which the regional filial, *Aguas do Algarve*¹⁰ is one part, was founded as holding of regional companies in public ownership, which run "multi-municipal" systems. It is principally controlled by the Ministry for the Environment. It is bound by the concession contract and orientated by the board of administrators and the Ministry. It principally disposes of financial and authoritative capacities.

As regional filial of various national level administrations the *Regional Directorate for the Environment and Natural Resources* (DRARN) and the Commission for the Coordination of the Region (CCRA) are in charge of licensing water abstraction from aquifers, carrying out Environmental Impact Assessments, controlling land use and providing technical guidance to councils. Since 1994 they are also supposed to charge for water use (pollution and abstraction) and to develop a water management plan (MAOT, 2000). Nevertheless, specifically the environmental branch is unable to cope with the multitude and complexity of duties^{11,12} because of limited financial and technical capacities and knowledge of the region.

Since changes to the constitution in 1976 *local councils* have the exclusive right and duty to provide water supply and sanitation services in the Algarve within the quality standards set at the national and European level. They determine and collect charges for water services (physical, financial, authoritative and regulatory capacities) (CLAGRHA, 1988; Bau, 1989). Financial resources for infrastructures depend on the overall income of councils from taxes, water charges and metering facilities. Until the beginning of the nineties water charges were low and metering patchy (Firmo, 1986; Poças Martins, 1998). The budget significantly depended on the share generated from construction taxes (CCRA, 1990a). In consequence,

⁹ Interview: Eng.º Pedro da Cunha Serra, INAG, Lisbon, 10.2.2003

¹⁰ *Aguas do Algarve* was founded in 2001 after *Aguas do Barlavento* and *Aguas do Sotavento* were merged as the corresponding networks were merged. However, the three companies have identical functions and their merger was only a bureaucratic matter.

¹¹ Interview: Eng.º Paulo Cruz, DRAOT Algarve, Faro, 30.1.2003

¹² Interview with President of INAG, Pedro Serra in Forum Ambiente, April 1999

principally more affluent, coastal tourism councils improved infrastructures, and technical capacities¹³.

In 1992 councils founded a *regional association* (AMAL) to coordinate and jointly lobby the government. Its objectives depend on the specific configuration of councils' interests¹⁴. The Algarvian tourism sector organised itself and founded an association to represent its interests and provide strategic coordination for the sector (AHETA) (AHETA, 2000). Both regional associations have principally socially constructive capacities.

Portuguese environmental NGOs are best organised at the national level. They have limited financial and technical capacities and human resources¹⁵ (Soromenho Marques, 1999a). Two regional NGOs (Almargem, In Loco) and the national NGOs (LPN and Quercus) are involved into the Odelouca case. Environmental NGOs have principally socially constructive capacities to influence media reporting or the conclusions of EIA to which they may have been invited. Furthermore, they have the right to submit complaints to the European Commission.

At the European level DG Environment has principally regulatory and authoritative capacities and socially constructive capacities to shape the answers of the Commission concerning complaints by citizens. DG Regional Policy principally has financial capacities. It has the authority to withhold co-funding for projects on which complaints are pending.

The implementation path of the Odelouca dam - strategic-relational interactions

In 1986 the NWA realized what was called a "foot on the door" policy by first promoting the relatively insignificant Funcho dam in the Barlavento before the Odelouca dam¹⁶. The same pattern of implementing infrastructures, which only became useful once the overall system is realised, was re-applied later on the regional scale. In 1989 the president of the NWA still envisages the realisation of the Odelouca dam for the turn of the century because of lack of funds¹⁷.

In 1994 the National Conservation Institute proposes the area where the dam is to be located for protection under the Habitat Directive. It could not avoid the classification because of the

¹³ Eng.º Enrique Brás, Câmara Municipal de Silves, Silves, 11.2.2003; Publico, 29.11.1999

¹⁴ Interview: Eng.º José Macário Correia, AMAL, Tavira, 20.5.2003

¹⁵ Interview: Professor Jorge Palmeirim, LPN, Lisbon, 6.2.2003;

¹⁶ Interview: Eng.º Pedro da Cunha Serra, INAG, Lisbon, 10.2.2003

¹⁷ Newspaper source, 1989

areas previous status as Corine Biotope which made the construction of infrastructures in the area significantly more difficult. The NWA could not influence this designation which shaped the battle over the purpose and necessity of the dam.

After setting up the multi-municipal system for the Algarve the NWA exercised its authoritative capacity in 1995 to launch the project. In its view the ISWSS presented an ideal way to solve the water supply issues in the Algarve and use the Commission's Cohesion fund. It responded to the lobbying efforts of several coastal tourism councils. Once again the NWA applied a "foot on the door" policy by realizing the network interconnecting the system before its principal origin, the Odelouca dam. It strategically steered the use of European funds towards its objective to implement the overall ISWSS.

Several technical characteristics of the ISWSS responded to the discursively mediated conceptual structures of actors at the time. Surface waters were better understood than Algarvian groundwaters. At several occasions the NWA demonstrated that alternative solutions would not achieve the same level of economies of scale. The ISWSS was seen as a step towards overcoming physical obstacles of the natural configuration of resources. It modified nature to obey to the laws of (welfare) economics where resources are used where they create the greatest wealth and spatial and morphological aspects are not considered. The full costs of the ISWSS were never compared with more localised systems. Furthermore, the ISWSS and dams were symbolically charged. Local actors that even opposed the connection to the ISWSS at different occasions demanded the construction of the dam to secure the resource basis of economic growth

The NWA used its authoritative capacity over the surface water domain to implement the dam. A group of environmental NGOs (Algarvian Almargem and LPN and Quercus at the national level) opposed arguing that it infringed European environmental regulations as a) the dam would promote an infringement of the nitrate directive. Aquifers would be taken out of drinking water supply and this would open doors for pollution of aquifers from agriculture and golf courses. b) The habitat of the priority species Iberian Lynx would be destroyed (WWF, 2007 Electronic resource: www.wwf.org.uk, accessed: 25.10.2007ref). They disputed the necessity of the dam stating that 1) current and future demands specifically from agriculture were exaggerated in corresponding studies, 2) water available in aquifers was understated, and 3) great efficiency gains could be realised. NGOs criticised the Algarvian development model as unsustainable, and increasingly water intensive expansion model, that required modification.

In fact, a relatively early, unpublished document the NWA confirms the view of the environmental NGOs regarding the role of aquifers (INAG, 1996, p7)¹⁸. In 1997 the first EIA was not accepted by the Minister for the Environment following the recommendations of the Evaluation Commission. It criticised the quality of the EIA, as irreversible negative impacts exceeded the area studied, alternative locations and the 0-alternative were not considered, and no overview was provided of water needs and availabilities in the region. The contribution of an invited expert, who was also a representative of the NGOs concerning the presence and behaviour of the Iberian Lynx had decisive impact on this evaluation. The rejection of the EIA led to an outcry of representatives at all levels.

The minister adopted the result of the second EIA in 1999. It suggested the construction of the dam further upstream following suggestions of the regional environmental NGO. That way the NWA weakened the opposition in the second EIA. The dam would be reduced to storing water from the Ribeira de Odelouca not integrating the basin of the Ribeira de Monchique, whose habitats would therefore be spared. Furthermore, it suggests extensive compensatory and mitigating measures.

Environmental NGOs are satisfied with the quality of the second EIA assessment. They criticize the selection of different members for the second evaluation commission and argue that it was influenced by the NWA and that experts on ecological issues were absent. The NWA as well as several regional, private and public sector representatives criticized the reduced project as they see long-term economic development compromised.

The Algarvian population largely supports the dam ridiculing the environmental NGO's opposition. Therefore, after withdrawal of the regional NGO, the national environmental

¹⁸ “[T]he use of [the large interior aquifer] Querença Silves for urban supply does not constitute a viable alternative for two reasons: the water from the aquifers is needed to irrigate the soils above, irrigation will inevitably contaminate the aquifers with pesticides and nutrients (even if correct agricultural practices were rapidly applied for minimizing the problems of contamination of the aquifers, the contamination problems already existing will take decade to be eliminated naturally). In view of this competition priority use of the aquifers should be given to the irrigation also for economic reasons...also population supply does not allow a homogenous exploration of the aquifer as agriculture does all along the zone covered by the aquifer.” The study continues: “...in Portugal ... a tendency can be observed to transfer the use of the aquifers to irrigation and the use of surface water for large urban consumptions and irrigation of the zones that do not have sufficient aquifers”. In this view Odelouca is justified by "maximising its capacity and minimizing the effects for the environment”.

NGO (LPN) submitted a complaint to the European Commission. It argued that irreversible damage to the habitat of a priority species was unacceptable.

The subsequent conflict between the NWA, LPN and the European Commission dragged on from 1999 until 2006. It was a conflict about the "social construction" of the dam, its purpose and the development strategy of the Algarve and the local resource configuration. Due to the complaint by LPN in the meantime, the dam could not be co-funded by the European Union. Local and regional actors ridiculed the NGOs for protecting a species that had hardly ever been spotted.

Because of the delay of the dam, the water company, in cooperation with the regional administration drilled boreholes, which were projected for irrigation. The agricultural administration agreed in the light of delayed agricultural expansion and slow uptake. Also, a water saving campaign and a water saving strategy were launched which pre-scribed re-use and recycling of water for golf courses and the introduction of water saving devices. Water pricing could still not be implemented as the national government never regulated concrete prices. Monitoring and implementation remained patchy given the lack of resources of the administration. While serving the purpose of overcoming potential water shortages which had become more likely after the delay of the Odelouca dam these half-hearted initiatives also had a symbolic role regarding the dispute with the environmental NGOs in front of the European Commission. The public administration wanted to show its efforts in regard to efficient and modern water management and illustrate that nonetheless, the Odelouca dam was necessary. Advice to re-enforce these measures came directly out of ongoing consultations with the European Commission on the question of the viability and justification of the dam¹⁹.

In 2001 the NWA started works on the Odelouca dam for the first time despite the pending complaint procedure, in order to create facts. LPN could not appeal in the European Court of Justice, as the Commission had not yet issued an opinion. However, soon construction stalled as the NWA lacked funds due to missing European co-funding. To resolve the issue, AMAL entered into direct negotiations with the government, the regional water company, and the European Commission itself. Meanwhile local authorities had little choice but to strive for the realization of the Odelouca dam. Once the national level did not provide the financing, the regional association of municipalities suggests that municipalities and consumers should step in to finance the Odelouca dam. Local authorities planned to use their regulatory capacity and

¹⁹ Interview: Luis Pessoa and Eduardo Barreto, DG Regio, Brussels, 10.7.2003

raise water charges in order to recover the additional contributions to the construction of the dam from water users. The implementation and operation of the dam would be transferred to the regional water company, ADA. All sides supported this solution. However, it could not be implemented because of an unstable government between 2003-2004.

The national, regional and local level administrations and the agricultural authorities always assumed the construction of the ISWSS and accordingly promoted development and water intensive economic activities. They are directly responsible for the "production of water needs". Their attitudes furthermore had a significant indirect effect on the justification of the dam. Coastal local authorities and the national government hardly constrained tourism expansion and promoted the water intensive quality tourism vision. On the other hand the regional environmental authority did not have sufficient financial and technical capacities to enforce tight control over abstraction. Penalties set by the government were insufficient and water charges were never regulated. The agricultural authorities claimed additional water for the expansion of subsidized agriculture despite the limited success of latest schemes. Through this constellation local, national and district level authorities contributed to overexploitation, insufficient infrastructure and increasing demands, all of which contributed to justify the Odelouca dam. As abundant ubiquitous water availability from the ISWSS was assumed, demands became a reality, produced a "self-fulfilling prophecy" and helped to produce "new data" justifying the ISWSS before the European Commission.

In 2005/2006 Portugal was subject to a drought. In the Algarve it made the "structural insufficiencies" of water supply in the face of unrestrained growth of demand from agriculture and specifically tourism more apparent. Newspapers and public and private actors including the environmental Minister and the new chairman of AdP dramatized the imminent threat of water cuts in the Algarve. Desalinisation, water re-use, rationing and water cuts were openly discussed and a water saving campaign was launched, that way re-enforcing the urgency to construct the Odelouca dam. Meanwhile, the environmental NGO LPN continued to oppose.

In consequence, in 2007 the European Commission issues a favourable opinion on the dam after new data had been provided by the Portuguese administration. Regional public and private sector actors applaud. LPN was given the opportunity to comment and argued that, alternatively, the ISWSS could draw water from a further dam (Santa Clara). However, the European Commission did not seriously consider this option as it did not want to 're-open the

case at this scale²⁰. The compromise was that the construction of the dam was accepted but not be co-funded from structural funds and that extensive mitigation and compensation measures were implemented, such as the re-introduction of the Iberian Lynx. In return the Commission asked for further improvement of the water management and saving performance and extensive mitigation and compensation measures. Nonetheless, Portugal asked for credit from the European Investment Bank, which in principle follows the same rules as the European Commission.

The Habitat Directive and the Odelouca dam

The area, in which the dam would be located, was proposed for the Natura 2000 network. Therefore, the social construction of the dam, meaning the legal interpretation of several aspects of it became crucial matter of dispute between the environmental NGOs, the NWA representing the public sector and the European Commission that had to issue a verdict on the respective aspects.

Therefore, for issuing an opinion on the dam the European Commission had to judge it in relation to Article 6 of the Habitat Directive. It had to clarify if a) alternative solutions existed for meeting the purpose of the dam, and, if this was not the case, b) if a priority species was considered to be present which required that "imperative reasons of overriding public interest" existed that justified its realisation such as "public health", "public safety", and "primary beneficial consequences for the environment". The hurdle to fulfil "imperative reasons for public interest" was connected to the question if a site currently hosted priority species (such as the Iberian Lynx). In contrast to claims of the environmental NGOs the national Conservation Institute classified the Monchique site not as hosting priority species (European Commission, 2007 website) and therefore eased the requirements for justification of the Odelouca dam.

The authorities tried to exclude alternative solutions as it considered that the same amount of water could not be provided from alternative sources. Also this judgement was challenged by the environmental NGOs.

In the following we briefly illustrate some of the vagueness and contradictions of projections regarding water needs and availability. In 1998, the NWA expected more than a duplication of demands for agriculture until 2025. The Evaluation Committee diminished this figure

²⁰ Comment by official of DG Environment in October 2007

(MARN, 1998). The National Water Plan expected even higher water needs already for 2020, despite significant gains in efficiency (MAOT, 2001). Environmental NGOs attacked these projections accusing of unquestioned, significant increases in water demand by golf courses²¹. Demands for populations are estimated including losses of up to 30% and estimating increases in tourism of up to 30% while water demands increase by 100%. The River Basin Plan considered overall water demands in the region of 169 hm³ in the overall region and 120 hm³ in the Barlavento (MAOT, 2000d).

The NWA estimates water available in the largest aquifer of about 150hm³, complemented by 50hm³ from coastal aquifers (INAG, 1996). Out of precaution it argues that only 50-70% of groundwater recharge should be used and it cannot be withdrawn at any location.

Furthermore, it argues that some of the water is polluted by agriculture, golf courses and saline intrusion and more water will be polluted in that fashion once agriculture expands further (MAOTDR, 2006). Environmental NGOs seem to follow these estimates stating that 80 hm³ can be withdrawn from aquifers in the region water available in surface waters is estimated at 159 hm³ (?????).

On the whole we can resume that in official studies after 1995 availability of water from aquifers decreased while projected needs increased and local supply conditions in the Barlavento were described as increasingly disadvantageous. Studies therefore re-enforced the need of the dam. Environmental NGOs cross-evaluated the data and questioned the projected needs and the way they were to be met.

Furthermore, despite expansion tendency projected water needs are rather high, and somewhat unrealistic in the light of, for example, the development of agriculture. Furthermore, with the completion of the ISWSS through the Odelouca dam the administration aims to reserve aquifers exclusively for agriculture respectively as 'strategic reserve'. Given that until recently water supply entirely relied on aquifers such a policy seems to be overcautious, or possibly instrumental to justifying the Odelouca dam. Furthermore, NGOs argue that taking aquifers out of the supply system lowers the dangers of irrigation of agriculture and golf courses in the region, enhancing development potential.

The European Commission as well as the environmental NGOs had to rely on data and projections provided by the national public authorities. The dispute therefore continued to

²¹ Figures of the 2006 regional development plan differ again stating that 17.000 ha of intense irrigation require 31.000 hm³.

focus on the ‘social construction’ and interpretation of data and scenarios extrapolating the dam's necessity and purpose. The interdependent Ministry of the Environment, the NWA the regional environmental authority and regional Coordination Committee were the exclusive producers of data on water availability and projected needs, as well as on the specific temporal and spatial features of aquifers.

Lacking alternative sources the Commission followed the arguments of the national administration. It did not take a systemic, strategic view of the situation in the Algarve, evaluating the overall water availability and needs and the way they were shaped. Similarly deeper scrutiny may have shed doubts on the overriding public interest character of expanding water supply in the region. The Commission considered water for agriculture not as public interest. On the other hand it did not consider the expansion of tourism and second home ownership (which is difficult to argue to be of public interest) as predominantly in the interest of private actors similar to agriculture, but as water supply to populations. Therefore, it tried to clarify / insure that water stored by the Odelouca dam was not used for agriculture. The technical design of the scheme allowed for doubts, as the Arade dam was located downstream the Funcho dam to which the Odelouca dam would deliver its water. Thus shifts of water from the Odelouca dam to the Arade dam could have been possible. The specific technical design of the scheme finally overcame these doubts so that the Commission officially considered Odelouca to be without alternative and of overriding public interest as providing water to populations from an areas where no priority species was present.

Analysis of the case study

The role of actors and their capacities

The continuously dominant actor in the development of the implementation path of the Odelouca is the National Water Authority. Its role is based on the capacities it disposes of with regards to water development in the Algarve. Besides the authoritative, financial and physical capacities regarding the exploitation of surface waters the NWA has the monopoly to produce data/ knowledge on the configuration of water availability. It is the only actor with the capacity to undertake studies regarding the expected development of water needs. Therefore, it provides the “material base” basis for interpretation/ social construction of the water problematique in the Algarve, on which also the environmental NGOs and the European Commission has to rely. It is the only actor capable of technically detailing infrastructure proposals to support water delivery. Furthermore, given its outstanding role

representing expertise on water issues in Portugal, it has significant influence on the regulatory capacities of the government and on the people that the government appoints for various posts relevant for water development in the Algarve and Portugal. However, it does not determine actions of other administrations as the actions of the Nature Conservation Institute illustrate, which, deliberately or not, initially hindered the construction of the Odelouca dam through the “inevitable” designation of the area as Natura 2000 reserve. Finally, the National Water Authority has significant influence on the way the government spends European funds in the water sector. However, with regards to its operational means it constantly complains that the government does not provide the finances to the water administration in general to effectively exercise its authoritative capacities implementing specifically water licensing, pricing and water plans.

The European Commission adopts a significant role in the implementation path of the dam. Only through its financial contribution does the ISWSS and the Odelouca dam become possible. At first the role of the Commission is limited to co-financing. The implementation of the first elements of the ISWSS coincide with the availability of Structural funds in 1986. The Odelouca dam is postponed until ministers see scope for its co-financing by European structural funds. In fact the comprehensive institutional restructuring of water supply in the first half of the nineties is initiated by the availability of generous EU funds that seek spending opportunities. They enable physical restructuring of water supply in the Algarve at the supra-local level and disempowerment of local authorities through the ISWSS.

Since mid nineties citizens have the right to appeal on the grounds of European regulations against the actions of the member states to the European Commission. That way it obtained a legitimising role through the exercise of its authoritative capacity to enforce European legislations. In the case of the Odelouca dam not only the legitimacy of the actions of the Portuguese administration but also the legitimacy of involvement of the Commission itself are under scrutiny, as structural funds are to be spent on the dam. The financial soundness of the project depends on the contribution of the Commission, so that the National Water Authority goes great lengths to facilitate approval by the European Commission. That way it awards an indirect even more influential role regarding the implementation path of the dam to the European level. After lengthy exchanges delayed by political turmoil in Portugal and despite apparent doubts specifically within DG Environment, the Commission accepted the necessity of the dam and its purpose of overriding public interest. However, already throughout the lengthy exchanges its involvement led to a significantly more proactive water saving policy in

the Algarve. Furthermore, as part of the 'deal' to accept infrastructure in a Natural 2000 location it demanded extensive compensation measures and imposed significant measures on the phase of construction. We interpret these measures to be part of a strategy to divert the attention from developmental bias of European involvement in this case. A win win situation was to be created (artificially) justifying the discourse of ecological modernisation. However, due to spatial and temporal displacement they did not question the effectiveness of the predominant policy of which they were part, the expansion of surface water availability for development through the implementation of the Odelouca dam.

We argue that for the Commission these measures operated as symbolic policies to guard its legitimacy and integrity in the context of its commitment to sustainable development and its implementation through ecological modernisation. The national administration adheres in order to mask or even deceive about the actual purpose of the dam, which is to maintain further expansion of tourism and agriculture in the Algarve.

As a consequence and after more than six years of exchanges on the matter the European Commission turns down the complaint of the environmental NGOs. Meanwhile only half hearted improvements in water management were implemented. They were to show good will of the authorities to follow EU policy prescriptions regarding ecological modernisation. These measures aimed at more efficient water use were accompanied by accelerated tourism and agricultural development re-enforcing the long-term necessity of the dam. Nonetheless, the European Commission decided not to support itself the construction of the dam through structural funds, possibly fearing deeper scrutiny if the matter was brought in front of the European Court of Justice.

Throughout all this time the national water authority together with the regional and local authorities promoted development in confident expectation of the Odelouca dam and knowing that the case of the dam was strengthened that way. Regulatory, authoritative, financial and physical capacities were employed to this end. Tourism development continued to be licensed at large scale, increasingly implementing the water intensive "quality tourism" agenda. It was supported by continued investment into infrastructures such as improvement of roads, urban spaces and facilities. Also on the national level tourism has officially become one of the main exports of the country that enjoys priority attention of the government since the beginning of this decade.

Without the engagement of the environmental NGOs the Odelouca dam would probably have been constructed since the end of the nineties with substantial financial support from the European Commission. Until the second EIA NGOs used their socially constructive capacities effectively, they indirectly participated in the EIA and achieved the downsizing of the dam. The procedure thus far illustrated that the claims of the NGOs had some basis.

Once internal means to influence the construction of the dam were exhausted and in view of the support of the dam by the local population, the NGOs strategy once again proved relatively effective using their authoritative capacity to complain to the European Commission. It effectively put the overall credibility of the European Commission at stake with regards to the implementation of one of its relatively young flagship environmental policies, the Natura 2000 network. The lengthy decision making process by the European Commission, its withdrawal from co-funding and the extensive demands of the Commission to embed the developmentist project into a constellation of win-win for the environment and the economy illustrate that the NGOs had a point with their queries.

The role of agency

Above we established that actors shaped development towards the construction of the Odelouca dam in response to the time-space envelope and the structural context they had access to. In addition, agency, interpreted as the way actors deal with the range of actions they may choose from, played a significant role in the development path towards the construction of the dam. We argue that specific individuals were able to influence the development path of the dam at certain points of time.

The realization of the project seems to be bound to role of a top administrator, Pedro Serra. In the eighties he studied and advocated the ISWSS and the construction of the Odelouca and Funcho dams as consultant, later as president of the NWA, he co-authored the introduction of multi-municipal systems as further step towards the ISWSS and intervened against the designation of the Odelouca site as part of Natura 2000. Finally, he is president of the national water company supervising the takeover of the dam by the regional water company in order to open it for financing through water charges, when it seems that the dam will be finally constructed.

At the regional level we assume that it was not a coincidence that the first president of the regional water company for the Barlavento was a former head of water services of Albufeira, which was the council that pushed most vehemently for the project. Similar continuity could

be observed for other posts that were decisive for the realization of the dam. Within the European Commission Portuguese nationals were in charge of administering the regional funds for the Algarve in the nineties. Some of them were seconded Portuguese officials which strongly favoured the construction of the ISWSS. They collaborated closely with national authorities advising on mitigation and compensation measures and the improvement of water management in order to duly justify the dam and embed it into the European Union paradigm of ecological modernisation. For the environmental NGOs Luis Palma, an expert on the Iberian Lynx, was decisively influencing the first EIA, which led to the reduction of the dam. Above we argued that actors' interactions with specific institutional, physical and discursive/ conceptual structures and agency 'selected' the realization of the Odelouca dam. Furthermore, we want to argue that, given that surface waters were easily controllable and competence of the national level, the ISWSS and therefore also its crucial missing piece, the Odelouca dam, became what Brenner called a state spatial strategy (Brenner, 2004:??) . It was pursued by the NWA and the Ministry for the Environment to disempower local authorities, respectively, to extend the national level "reach" into the competencies of local authorities. The interconnection of water sources was necessary to make the overall resource base of the Algarve ubiquitously available to tourism development concentrated on the coast. In addition to its physical aim of improving water supply in the Algarve, it serves the constitution of the Algarve as a cohesive geographical state space (see also: Brenner, 2004: 91).

Contradictions of water supply development in the Algarve

In the light of concepts and instruments of European environmental policy we found that the implementation path of the Odelouca dam and the policies contributing to it were contradictory in a number of ways. For categorizing contradictions we follow the framework outlined above: we distinguish between deliberate contradictions which are either accepted for symbolic reasons or which are instrumentalised to mask/ deceive about aspects of the overall policy package. Furthermore, we distinguish consequences of the pathway of the implementation of the dam which were unintended and contradict the core of the policy package.

The fundamental contradiction is the initially unintended implementation of elements of the political program of ecological modernization through the implementation of the ISWSS. Over time this advanced has been adopted as a strategic deceptive symbolic policy in order to embed the developmentist Odelouca dam, with allegedly severe consequences for the

environment, into a win-win situation for the environment. Furthermore, the national authorities wanted to demonstrate that despite adherence to European policy paradigm of ecological modernisation the dam was indispensable. Both aspects were to strengthen the justification of the dam and facilitate support by the European Union that saw its credibility with regards to one of its most powerful integrative symbolic politics at stake, sustainable development and ecological modernisation.

Water saving devices, a water saving strategy and increasing water charges are being implemented. Resultant more efficient water use as such was un-intended. For its temporal displacement, or, in other words the fact that it comes too late and in the context of ever accelerating growth of water demands, it does not threaten the core of the policy package, which is the realisation of the Odelouca dam to cope with expanding water demands. Nevertheless, in the constellation, in which it is implemented, the dam leads to what we want to call its "second dividend" as additionally water management is technically and institutionally improved, increasing the availability of water for development even further. Similarly, compensation measures such as the re-introduction of and research on the Iberian Lynx are temporally and spatially displaced, not threatening the implementation of the dam but simulating a win win situation for the environment.

A further striking unintended contradiction is the gradual implementation of the user pays principle for water service provision as one of the principal environmental policy instrument advocated by the political programme of ecological modernization. According to ecological modernisation theory it will lead to more efficient and innovative use of water. First, the reorganization of water supply in the region and second, the lack of co-funding from the European Commission for the dam, led to this unintended realization of the user pays principle, that, if applied much earlier could have made the dam redundant. In the Algarce, water pricing is introduced through the backdoor for lack of public finance, not as means to steer water use in an efficient way.

We would judge the interpretation of the dam as providing water for overriding public interest as contradictory and openly deceptive policy. The significant growth of the private tourism and temporary residents sector justified the need for the dam. Permanent residents in the Algarve, which we consider to establish the population that is in the public interest, does not require the expansion of water supply. Similarly, the argument about economies of scale of the ISWSS is deliberately misleading. When costs of distributing water and installing the

necessary infrastructures are considered, it is unlikely that the ISWSS is the most efficient way of providing water in the Algarve.

Conclusions, reflections and recommendations

In the context of Southern European coastal development and Europeanisation of environmental and infrastructure politics the present paper reconstructed the implementation path of the Odelouca dam in the Algarve, Portugal. First designed in the beginning of the seventies, the dam is currently being built as last missing piece to a “region-wide” system of dams, interconnecting pipes and infrastructures to shift water supply from ground- to surface waters and make water of drinking water quality available abundantly and ubiquitously. The dam is rooted in a water policy paradigm that is oriented to satisfy any given water needs through the means of extensive public surface water works that proclaim extensive economies of scale and economic viability. The paper reconstructs how rationale of the dam has principally remained constant while the politics surrounding responded to the needs for legitimisation by the European Commission. As a result temporally and spatially displaced water saving and management measures are implemented to artificially embed the dam into a win win situation between the environment and the economy and legitimize it in the context of European subscription to the paradigm of ecological modernisation. Such measures were initially unintended and therefore lack commitment and effectiveness. For the national administration they are simulative contradictory measures to mask the effective purpose of its policies. For the European Union they serve the significant purpose of legitimising/ masking the developmentist orientation of the dam which allows the European Commission to approve it. It provides the opportunity to uphold its integrative, symbolic policy project comprised of sustainable development. The application of economic principles to water management, strongly advocated by ecological modernisation agenda, are the unintended outcome of lack of public finance as opposed to a commitment of the national administration to European thinking on environmental policy making.

The National Water Administration is the dominant actor steering the implementation path of the Odelouca dam. However, at first only for financial reasons and later also for legal reasons the support of the European Commission becomes the necessary condition for the realisation of the dam. In this context the environmental act effectively questioning the credibility of the European Commission in a context in which one of its flagship integrative symbolic policies is at stake.

The expertise, commitment and partly continuous involvement of certain individuals at the national and supranational, but also at the regional and local levels seem to have a crucial role in shaping the implementation path of the dam.

Several factors re-enforced the necessity of the realisation of the dam, making it a self-fulfilling prophecy: the official promotion of accelerating expansion of tourism and agriculture in the region, the potential overstatement of water needs and understatement of available water in aquifers and the largely unchanged water supply approach. Contradictory measures with the potential to steer water demand and create/ safeguard ecological values were too half-hearted, had come too late, and were spatially displaced so they could not compromise the justification of the dam. Indeed, the timing of the implementation of specific infrastructures and institutional innovations is crucial for the implementation path of the Odelouca dam. The rule seems to be that the least important infrastructures were implemented first. Moreover, institutional innovations with the potential to make the dam redundant and withdraw its legitimization were only implemented when they helped to legitimize the activities of the overall public authorities. When implemented they already had no effect on the urgent physical necessity of the short term availability of the storage capacity of the dam for reasons of physical path dependencies and sustaining already presumed and realised water demands from economic development.

The justification focused on available water and envisaged water needs and their spatial distribution. The national water authority held the monopoly in knowledge production in regard to these issues, enabling it to steer the discussion to a large extent. The politics surrounding the construction of the dam subsequently incorporated some of the ideas proposed by ecological modernization, leading to deeply contradictory policy outcomes. Observed contradictions are the a) artificially, displaced production of the ecological values that the dam itself destroys; and b) the partially unintended implementation of measures that could have made the dam redundant as providing for water saving, if they were implemented earlier. In a cynical fashion, this way of legitimizing the implementation of the produces a “double dividend” enabling even further development through institutional innovation leading to more efficient water use.

With more than thirty years passing between design and implementation, the Odelouca dam is a good example of a long term infrastructure project and the way it is moulded by societal, political, institutional, technological and innovations and not least economic development. The initial purpose of the dam, to provide water for agriculture has been replaced by the

developmental purpose to provide water for tourism. The basic paradigm to overcome natural limits to spatial economic development due to absolute water scarcity and its unequal spatial distribution by means of heavy infrastructures has remained the same. The case study illustrates the contradictions that emerge when national and local politics need to respond to much more dynamic, disembedded European politics and its symbols. Nonetheless, national administrations remain the dominant actors determining the outcome of European environmental politics on the ground. Specifically, independent expertise and data regarding very local developments needs to be made available to European policy makers to effectively cross-check national politics. Otherwise, demands of the European Commission to consider the environment to a greater extent will do hardly more than mask traditional core orientations of national administrations that are at least questionable in the context of ecological modernisation and even more so before the background of sustainable long term development that overcomes the contradiction of economic growth and its physically given absolute limits. Besides the establishment of independent local expertise we can draw a further lesson from the complexity and extended period of implementation of the ISWSS and the Odelouca dam. Complex, sequenced project such as the ISWSS should be implemented in self-sufficient subsections, in order to avoid that earlier sections of the scheme necessitate subsequent larger works project to develop their full value. Such subsequent projects however, may become questionable in the context of changes in societal valuations, political context, technological and institutional innovations. However, the case of the Odelouca dam also teaches us that such conclusions may be counterproductive in the context of uncertainty about what the future will bring. Ironically, realising the “self-sufficient” Odelouca dam early on throughout the realisation of the ISWSS would have irreversibly destroyed a valuable habitat at a time when no political means existed to protect it or at least to compensate for its loss. From an environmentalists point of view the latter is the only benefit from the Europeanisation of Portuguese environmental politics and the European Commission’s insistence on the symbolic policy agenda described as ecological modernisation. As a question it remains open if recent European regulations on Strategic Environmental Assessment of Policies, Plans and Programmes has the potential to change the contradictory policy outcome we observed in the Algarve.

Nonetheless, the way ecological modernisation is articulated in the implementation path of the Odelouca dam only artificially produces a win-win situation between the environment and the economy. The case therefore questions the underlying theory of ecological modernisation.

Even greater doubts can be applied to the effectiveness of the agenda of ecological modernisation where it serves to mask and legitimize policy packages with an otherwise developmentist core. In that case at best it serves to delay a situation where economic development in the Algarve undermined its own resource base. The latter alludes the underlying second contradiction of capitalism that O'Connor (1996) refers to.

At first sight, the highly contradictory role that ecological modernisation plays in European environmental politics seems to confirm itself in other Southern European coastal zones, which stand under similar intense development pressure as the Algarve (see for example: Viveiro, 2005).

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