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FACING THE CHALLENGES

CASE STUDIES AND INDICATORS



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River contracts for sustainable development in the Italian context: The Serchio River case study

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Abstract

A river contract is a participatory management tool for the protection of rivers, restoration of the environment and better planning of land use. In Italy, river contracts are becoming more common, with the participation of basin, regional, provincial and municipal authorities as well as other stakeholders. The strength of river contracts lies in their prioritization of direct consultation with this broad stakeholder group. Projects under these contracts are carried out through public-private partnerships for better efficiency of implementation and to enable job creation. Collective governance is increasingly associated with successful efforts for sustainable development, and the Serchio River contract, which involved more than 270 stakeholders in its planning phase, is one such successful example from the Tuscany region. It has a number of notable achievements such as redefining rules for urban development in harmony with nature and the river and involving farmers in protection of the environment.

The European Union Water Framework Directive² (adopted in 2000) identifies the river basin as a natural geographical and hydrological unit for the implementation of integrated water resources management policies. The Directive also asserts consultation with and active participation by citizens at the relevant level in the choices to be made relating to issues such as agro-ecology balance, land use planning and water management. However, defining the hydrographical basin as the ideal spatial scale of management may not necessarily adapt well to the particularities of an area and above all may not be accepted by all the political and economic powers of the basin in question (Guerra, 2013). It has been suggested that rather than one formal agreement at the basin scale it may be more appropriate to identify the territories (e.g. sub-basin, or two or more basins together) most concerned by a specific problem and to create organizations or ad hoc agreements accordingly (Blomquist, 2008). This approach underlies the logic that enabled the creation of river contracts in search of effective solutions for the recovery of river basins.

In the Italian context, river contracts are progressively gaining more importance for the integrated management of water resources and for reversing the current planning model, which focuses on urban growth. In Italy over the past 40 years an area equal to the Lombardy, Liguria and Emilia-Romagna regions combined has been urbanized at a rate of 85 km² per year. Unless this trend is curbed, the land transformation rate is

estimated to reach as high as 0.75 km² per day (approximately 300 km² per year) by 2020. This will lead not only to systematic destruction of the natural environment but also to increased risk of floods because of the exploitation of floodplains and other vulnerable areas. From 2000 to 2012, floods in the European Union caused an average annual loss of about US\$5.7 billion*, an amount that could grow to US\$27.3 billion* by 2050. In Italy, emergency interventions related to flooding equate to approximately 0.7% of the gross domestic product (GDP) (Bastiani, 2011). Climate change and increasing climatic variability are likely to worsen the situation. To curb high urbanization rate, flooding and related problems, the projects implemented under river contracts encourage the establishment of a better balance between the use of land and water resources by promoting urban policies that focus on water quality, hydrogeological risk prevention, containment of land exploitation, and overcoming sectoral visions and interests.

River contracts respond to the need for introducing new forms of governance that are sought by European directives and guidelines for the public administration to implement integrated management of water, land and landscape³ in a shared and subsidiary manner. River contracts prioritize the participation of basin, regional, provincial and municipal authorities as well as other stakeholders. Collective governance

2 Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.

3 The European Landscape Convention defines 'landscape' as "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (COE, 2014). Landscape, therefore, has diverse characteristics ranging from areas of ecological importance to dryland and urban areas to farmland.
* European Central Bank exchange rate: EUR 1 = US\$1.16 – (January 2015).

such as this is increasingly associated with successful efforts for sustainable development. Local communities lie at the centre of such governance; they are the main actors in protecting rivers as collective resources, stopping the degradation and disappearance of natural landscapes, maintaining biodiversity and the environment, and achieving more efficient use and sustainable management of these valuable resources (Martini and Soccodato, 2012).

Lombardy and Piedmont were pioneering regions, implementing a number of river contracts for the protection of spring systems, environmental rehabilitation of flood detention basins, enhancement of secondary hydrographic networks (e.g. channels, creeks) and improvement of agricultural systems.

In Piedmont, the river contracts introduced in 2007 through the regional Water Protection Plan now concern not only rivers but also some major regional lakes. Furthermore, the Region has introduced specific measures in its Rural Development Plan for an integrated river and agriculture management policy. In Italy, the creation of the National Table of River Contracts the same year (2007) provided crucial support for the development of other river contracts, as it became possible to coordinate efforts and compare experiences to build a culture of collective governance. The Italian Ministry for the Environment, Land and Sea and the Italian Institute for Environmental Protection and Research (ISPRA) jointly promoted the recognition of river contracts as a management tool for the protection of rivers within the national legislative framework.



The initial river contracts have led to similar efforts in regions of central and northern Italy (Abruzzo, Emilia-Romagna, Umbria, Tuscany and Veneto) as well as in the south (Basilicata, Calabria, Campania, Puglia and Sicily). In the Veneto, contract projects are underway in the Marzenego, Piave and Meolo rivers, and an estuary contract has been initiated for the mouth of the Po, Brenta and Adige rivers focusing on the complex interaction of inner, transitional and marine-coastal waters. In the Abruzzo region, initial contracts cover the Tordino River and the gorges of the Sagittario River. The regional government has added river contracts to the mandate of the Regional Agriculture Councillor, thus confirming the Abruzzo authorities' intention to initiate other river contracts. Emilia-Romagna has a broader approach to river contracts. For example, the Panaro River is covered by a landscape contract,⁴ and the river contract for the Marecchia River, by being included in the Strategic Plan for the Province of Rimini, has aspects of a development plan. River contracts in Umbria are oriented towards landscape recovery (Bastiani, 2014). For example, the Paglia River contract proved to be the main tool for the revival of the areas at Orvieto that were affected by severe floods in 2012. In Tuscany, river contracts are promoted by the Regional Government and local authorities and are linked to river basin management plans (as in the case of the Serchio Valley, elaborated in the following paragraph), but spontaneous contracts are also derived from citizen actions (e.g. the park built around Valdarno Empolese river to protect the environment and to harmonize aspects of the landscape).

4 A landscape contract aims to establish a balance among natural, urban and peri-urban areas to protect the environment, to create recreational areas rich with activities, and to establish a scenic landscape.

Serchio is the third longest river in Tuscany, flowing over a distance of 126 km mainly in the Province of Lucca. The project area of the Serchio River contract (Figure 4.1) is a 37.5 km length that is located in the middle reaches of the river between Ponte di Campia (Municipality of Barga) and the Sant'Ansano bridge in the Ponte a Moriano area (Municipality of Lucca). The residential areas along this stretch of the river are historically positioned along the ridges or halfway up the hills, but since the 1950s they have expanded to the bottom of the valley, leading to the saturation of significant parts of the flat terraces, in some cases including floodplains. The tendency of the settlements to concentrate at the bottom of the valley instead of exploiting other possibilities offered by the topography of the area has created congestion and infrastructure problems. Industry (particularly paper mills) is also localized along the river and has a tendency to extend to the riverbed. Residential zones and industrial areas occupy approximately 13% and 7%, respectively, of the basin (a total of 20%).

The river contract for the Serchio River aims to curb landscape and ecosystem degradation and to rehabilitate land in various sub-basins. The first pilot project focused on the mid-section of the Serchio Valley. In order to ensure a comprehensive participatory process, a large number of potential stakeholders were initially identified. The Territorial Planning Office of the Province of Lucca concluded that approximately 270 of these (including 12 national public institutions, 40 regional public institutions, 64 local public institutions, 30 media agencies, 11 university departments and 13 higher education institutes) were capable of effectively contributing to the process. The Territorial Planning office held a consultation meeting in February 2012 in which it presented to stakeholders and invited

4.1

BOX

Empowering farmers as guardians of the river

'Farmers: The Guardians of the River' is a pilot project designed to determine and implement best practices applicable to the specificities of the Serchio River contract project area to revive habitats that are no longer present because of excessive transformation of the environment by human activities (anthropization). The objectives are to increase the effectiveness of environmental reclamation while minimizing costs; manage environmental damage prevention and early intervention, even in areas where accessibility is low, through the involvement of local people; and encourage farmers to stay in the area by empowering them as the 'Guardians of the River'.

In spite of limited investment and financial resources, the project has had a number of successes, including:

- Contributions from European Union rural development funds for projects to clean streams (located at an altitude of 600 m and above) from excessive vegetation;
- Monitoring and reporting environmental issues at different scales;
- Planification of appropriate, timely and cost-efficient interventions; and
- Incentivization of agroforestry.

The project has strengthened the concept of multi-functionality in agriculture by building collaboration between farmers and relevant institutions for a mutually beneficial partnership: the farmers are financially rewarded for benefits generated by environmental protection while their involvement in data collection and information sharing helps timely measures to be taken to protect rivers and land resources in a cost-effective manner.

elaboration on targets related to river restoration, protection of water quality, flood control and prevention, and boosting tourism and the local economy sustainably. Two subsequent meetings were directed towards building a long-term sustainable development vision, designing plausible scenarios and identifying projects required to achieve the overarching targets. An action plan and a memorandum of understanding with the local community and stakeholders was presented in a final meeting in April 2012, where 44 projects (to be implemented through public-private partnerships) were each assigned a degree of priority. Some projects were structural measures (such as construction of retention basins for flood control), while others were 'soft' measures (such as education and training and information collection and sharing). The major results of the contract so far have been an updated Territorial Plan of Provincial Coordination for controlled urban development in harmony with nature and the river, structural measures to reduce flood risk, biking and walking trails on an interprovincial scale to boost tourism, and the involvement of farmers in protection of the environment (Box 4.1).

Acknowledgements

Massimo Bastiani, Endro Martini, Giorgio Pineschi, Francesca Lazzari, Sandra Paterni, Massimo Rovai

References

Except where other sources are cited, information in this chapter is adapted from:

- Bastiani, M., Martini, E. and Pineschi, G. 2014. *The Italian Experience of 'River Contracts' and Case Study of the Serchio Valley*. (Unpublished) Prepared by Massimo Bastiani (National Table of River Contracts, Gubbio, Italy), Endro Martini (Alta Scuola Cultural and Scientific Association, Perugia, Italy) and Giorgio Pineschi (Ministry of Environment, Land and Sea (Rome, Italy).
- _____. 2011. *Contratti di Fiume: Pianificazione Strategica e Partecipata dei Bacini Idrografici [River Contracts: Strategic and Participatory Planning in Hydrographic Basins]*. Palermo, Italy, Flaccovio Editore. (In Italian)
- _____. 2014. Stop the growth of cities: the role of marginal agricultural areas between river and city as a territorial protection and in the reduction of hydro-geological risk. *Scienze del Territorio*, 2: 55-78. Italy, Firenze University Press. doi:10.13128/Scienze_Territorio-14323
- Blomquist, W. 2008. *Relating People to the Environment: Human Societies and River Basins*. Plenary address to the 60th Anniversary Celebration of the US-Italy Fulbright Program, Polytechnic Institute of Turin, Turin, Italy, 29 April 2008.
- COE (Council of Europe). 2014. *The Territorial Dimension of Human Rights and Democracy*. The European Landscape Convention. Strasbourg, France, COE. http://www.coe.int/t/dg4/cultureheritage/heritage/Landscape/Pes_en.pdf
- Guerra, S. 2013. *Disputed or Shared Territory? The Italian Experience of River Contract: New Relationship between River and its Region. Living Landscapes - Landscapes for Living*. Paesaggi Abitati. Conference Proceedings. Florence, Italy, February-June 2012. Planum. The Journal of Urbanism, no. 27, 2nd semester: 31-37. <http://www.planum.net/living-landscapes-section-8>
- Martini, E. and Soccodato, F.M. 2012. *The River Contract: A Tool for Management and Rehabilitation of River Landscapes and Hydrogeological Risk Area*. Presented at 6th edition of the Remediation Technologies and Requalification of Territory Exhibition and 3rd edition of Coast Protection Exhibition, Ferrara, Italy, 21 September 2012, CD "Atti dei Convegni Nazionali".