RIVER CONTRACTS IN ITALY. AN EXPERIENCE FOR RIVER MANAGEMENT

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***Abstract*—** The national and community framework for rivers management plans and experiences outlines the need to adopt a cross-sectoral approach. In this context, "river contracts" (RCs) emerge as a way to reconcile local interests and build integrated strategies in order to redevelop and manage the environmental and landscape quality of a river basin.

Although there is no Italian law on the method or contents of river contracts, the authors initially highlight the strengths and weaknesses that emerge from an analysis of major national experiences.

Given these considerations the article goes on to propose a methodology to elaborate an action plan and strategic territorial scenario based on participation. Using traditional methods and new social networks, the participatory construction of the RCs exploits multiple suggestions by the population to define multi-sector strategies for the Tinella river territory..

***Keywords*—** participation, negotiation, rivers management, local development.

I. Introduction

THE lively international debate that began in the early 1990s has focused on the management and conservation of the world's natural resources, highlighting the importance of water resources and the need to protect them as crucial environmental elements of a territory. Water management activities have also come under increased scrutiny, not only because they refer to physical elements of natural systems, but because they are strategic for people's quality of life.

The International conference on water and the environment held in Dublin in 1992 was the first to emphasize the economic role of water resources, environmental disasters, and the importance of institutional and social training and awareness. That same year, the World Water Day (March 22) was established by the United Nations Conference on environment and development in Rio de Janeiro, held as part of the initiatives on sustainability (Rio Declaration on environment and development).

Furthermore, world forums on water were organized from 1997 onwards as international events to discuss the multiple issues involving water resources. There have been a total of five events (one every three years) dedicated to specific themes: in Marrakech (1997), water and sewerage systems, shared management of water resources, conservation of the ecosystem, and efficient use of water; at the Hague (2000), water and nature, water and people, water and sovereignty (Making water everybody's business, 2000); in Tokyo (2003) and in Mexico City (2006), the relationship between water resources and people's lives (Water for people, water for life, 2006), new policies, integrated resource management, efficient management, and stakeholder involvement; in Istanbul (2009) changes in water consumption policies (especially in the agricultural sector), the struggle against subterranean water pollution, and improvement in sewage treatment plants.

These international initiatives inspired the 2000/60/EC Directive (Water Framework Directive, WFD). The document is presented as "a framework for community action in relation to water resources"; its objective is to maintain and improve the quality of water resources throughout Europe using integrated measures regarding the qualitative and quantitative dimension of waters (Kaika, 2003). The logic behind the Directive is that water should be initially recognized as a crucial resource for the sustainable development of local communities (Kallis, Butler, 2001; Mostert, 2003). Indeed, as emphasized in the Directive, "water does not only […] satisfy the primary needs of the population […] but is vital for all ecosystems" and represents a driving force for development, capable of producing and sustaining collective wellbeing.

Based on these premises, sustainability is achieved - according to the Directive – by focusing on its ecological, economic and social features (Moss, 2004). The Directive emphasizes the need for maximum integration of the disciplines involved in the knowledge process and enhancement of responsibilities, legislation and measures as well as through the involvement of institutions and citizens (Carter, 2007). Furthermore, it also emphasizes the importance of operating according to the principles of effectiveness and transparency (e.g. The HarmoniCOP Handbook -Harmonizing Collaborative Planning and developing guidance for the implementation of the Water Framework Directive; Tippetta et al., 2005). It specifies that all forms of information, consultation and participation of public opinion should be enacted in order to achieve, by 2016, the common objective of "good status" for the quality of waters in a hydrographic district. The role of the Regions is also considered extremely important: fundamental objectives and action priorities are established for basin areas, while more specific projects are established and implemented regionally in order to create a closer relationship with local communities and their needs. The Directive sanctions the transition of water management from

This work is defined in collaboration to the Provincia di Asti and of Valerio Avidano.

government to the territory (Governa, Toldo et al., 2009) thereby overcoming the logic of administrative fragmentation (and consequent restrictions). It also promotes integration between the management of water resources and land use planning (Carter and Howe, 2006; Kidd and Show, 2007).

The entire framework defined by the Directive was assimilated by Italian national legislation with a certain slowness. With the Legislative Decree 152/2006, Italy formally implemented the contents of the WFD: however, formal implementation alone did not provide the technical instruments necessary for the effective realization and implementation of the provisions .

In Italy the subject had previously been governed by Law 183/1989 which defined for the first time the hydrographic basin as the optimal area for soil defense actions. The Basin Authorities have cognitive, programming and planning competencies and are required to draw up the Basin Plan, a sectorial tool for hydrogeological risk assessment, water level management and improvement of its status in a river basin.

Despite the administrative or technical difficulties encountered in putting the new principles into practice, Law 183/1989 contributed to safeguarding local conditions and, at the same time, assigned different responsibilities on various territorial scales (Chicca et al., 2003). It also reinforces integration between various disciplines (environment, land use, urban planning, economy, etc.), with extensive dialogue between the stakeholders involved in the fluvial territory transformation processes.

After twenty years from the introduction of Law 183/1989 and with numerous basin plans undertaken (such as River Po, 2010), in the light of those principles that planning activity has made its own (subsidiarity, sustainability, cooperation), soil defence is interpreted as an integral part of a general environmental planning strategy, related to the requalification of waters, management of the fluvial heritage, protection of natural assets and control of soil uses, separating it definitively from a sectorial approach. Finally, on an institutional level, «the positive legacy is that of having structured a stable form of coordination between Basin Authorities and local institutions […], promoting both the regulatory connection between the Basin Plan and local plans, and the assumption of responsibilities by sharing objectives» (Peano, 2008).

On this basis, Legislative Decree 152/2006 intervenes, updating national legislation in accordance with the principles and objectives of Directive 2000/60/EC. The hydrographic districts and the new District Authorities have been instituted, as a replacement for the Basin Authorities. This innovation reinforces the integration between the land use planning and the management of water resources, and incorporates the need to interrelate the Basin Plan with the territorial plans on the various scales, referring to the contents of Law 183/1989. The administrative reorganisation should experiment a logic of planning of the waters through the definition of more territorialized objectives that include not only hydro-geological risk assessment, but also environmental and landscape preservation and enhancement (Brunetta, 2008).

The implementation of the policies set out by the District Plan progresses through the definition of the Regional Water Protection Plans (WPP), which organise a series of actions, interventions, rules and behaviors aimed at the improvement of qualitative and quantitative water status, while interacting with regional and development policies . The WPP (Water Protection Plan) establishes strategic objectives for the safeguarding of water, starting with the evaluation of the overall status of the ecosystems (river-bed, banks and peri-fluvial areas), the compatibility of land uses and settlement pressures, and of the social and cultural behaviors associated with water, that can directly or indirectly influence water resources. The WPP in the Piedmont Region (2007) introduces the River Agreement as an innovative method of territorial governance, useful in identifying shared strategies, actions and rules for the environmental, landscape and socio-economic enhancement of a river basin.

II- River Contracts. A Tool for Fluvial Management

Inspired by international experiences (i.e. Belgium , France), unlike most territorial planning tools, in Italy the River Agreement is not based on an institutional law. It is more of an experience implemented and developed in the last ten years and constantly consolidated both methodologically and operationally . However, its role in water management and territorial planning is gradually gaining widespread recognition, and as a result the River Agreement is increasingly being inserted in a variety of planning tools (basin or hydrographic district plans, water protection plans, landscape plans, rural development programs). To date there is no unequivocal definition of the River Agreement. The proposal to create a National Charter of River Agreements, discussed during 5th National Round Table on October 21, 2010 in Milan, acknowledges the trends in practices implemented in various Italian regions. The Charter also states that the River Agreement must promote vertical and horizontal subsidiarity as well as participative local development and sustainability. The River Agreement must involve a decision-making process that includes all the actors involved and all pertinent topics (Carter, 2007); this will lead to a change in traditional water management, based on a hierarchical top-down relationship, and overcome its strictly technical and sectoral nature (Eckerberg and Joas, 2004).

In fact, inclusive governance, transparent assessment, and socially robust knowledge are the three pillars of a successful river basin governance processes (Guimarães Pereira, Corral Quintanab, 2009). In this view the River Agreement, a form of negotiated planning, begins with a voluntary agreement mobilizing participation by all major institutional and social actors in a fluvial region in order to define and implement a common strategic framework (Affeltranger, Lasserre, 2003; Antunesa, et al., 2009). The decision-making process should involve several heterogeneous socio-economic actors and

different decision-making forums. The objective of this inclusive process is to relate different visions and aggregate them into multi-sectorial policies (soil and water protection, environmental improvement, landscape enhancement, regional development), financing specific projects, as well as influence planning and programming (Kidd, Shaw, 2007).

In this regard it also contributes to rebuilding knowledge and the self-defining skills associated with hydrogeological safeguard, the ecological development of the river and its landscape, and the development of multifunctional agricultural practices; this is achieved by reactivating multi-level management of "basin communities" (Magnaghi, 2011) and enabling people to recover rivers; furthermore, it can help generate new urban and rural territoriality, set up a network of local initiatives, and create integrated territorial enhancement policies.

Studies of some of the more advanced and different projects in Lombardy, Piedmont, Emilia-Romagna and Sicily, discovered certain common characteristics involving administration (of the process), and technical contents.

The public-private concertation process involves heterogeneous groups of stakeholders. Although the organizational structure of each project varies considerably, they all have a small decision-making body (Control Room) with members from the most important stakeholder groups; the Control Room coordinates activities and outlines the strategy of the agreement. A second body (Basin Assembly, Contract Forum) comprises all parties which in one way or another become part of the process. Although generally defined as an “enlarged participative body”, the facts show that there is a widespread tendency to include (through workshops, focus groups, assemblies, etc.) only the most important stakeholders from the economic world, institutions, or representative associations. As regards participation, certain projects do not involve any form of public consultation; others involve only certain age groups (chiefly through projects with schools), and still others involve only specific groups of individuals.

The Italian case studies demonstrate a predominance of technical topics connected with water and soil pollution and a constant attention to the hydrogeological safety of the land. All the experiments have the same objective: the enhancement of the landscape primarily considered, however, as being closely linked to fruition following the construction and/or interconnection of slow mobility routes (cycle-tracks, panoramic routes), and to an attempt to build parts of a local ecological network. Although often not locally perceived or considered as a threat to safety, the river emerges as a driving force behind community development, and the proposed strategies very often are purely technical (especially as regards waters and soil) and relate to ordinary planning measures.

Furthermore, the implementation of planned measures is subject to the presence or otherwise of public funds already earmarked by existing planning instruments (local plans, operational plans, rural development plans, etc.).

The weaknesses related to an inadequate inclusive participation process, to excessively sectoral measures, and the absence of ad hoc financing, were compounded by limited territorialisation of the strategies which had little to do with the physical territory. As a result, the final product is a framework of general objectives for the enhancement of the river and its territory, divided into different technical and sectoral action plans. The experiments do not define the spatial scenario of the strategies in the form of a "large area project general masterplan", that would allow the "spatial" results of the project to be visualised, by directing the contract revision and implementation process, in addition to revealing the physical and functional interactions between the different planned interventions.

Finally, one last critical area was poor evaluation: the most recent experiments use an strategic environmental evaluation tool only after the concertation process (“ex-post” evaluation), but not a program for the qualitative and quantitative monitoring of the contract results. In fact, the quality of the evaluation tool could also play a crucially important role during all stages of the process; it must be considered as a continuous reference tool to verify congruence between current and future planning decisions and the environmental and strategic objectives established by regional planning and programming measures . As a result, it will be necessary for each River Contract to formulate a suitable program for the qualitative and quantitative monitoring of these measures; this program will continually evaluate the results and possibly redesign the method in order to improve final performance.

III- The proposed Method for the Tinella Torrent River Contract

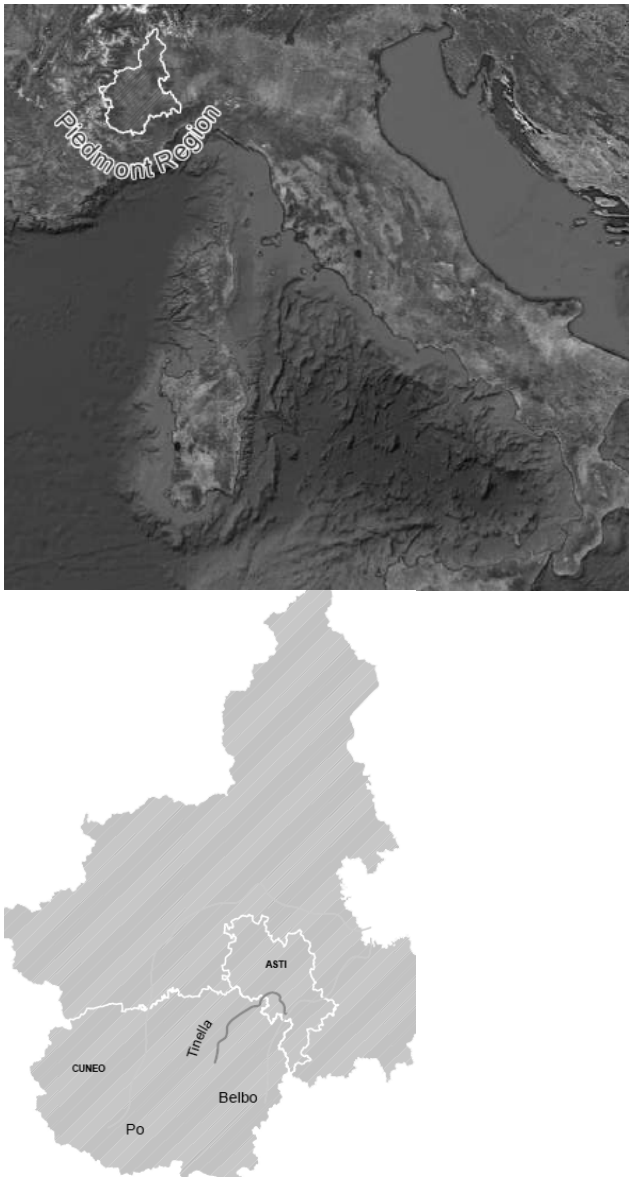

Figure 1. Tinella territory in Piedmont Region.

IIIa Tinella Context

Within the framework of ongoing experiences in Italy and the guidelines of river contracts in Piedmont (Governa and Toldo, 2011), the paper presents a methodological and procedural model to develop the clauses of the River Contract of the Tinella torrent sub-basin, including assessment of the process and monitoring of results; the Tinella torrent sub-basin is located in a region situated on the border between the provinces of Asti and Cuneo (see Figure 1). As part of the bigger basin of the Belbo torrent, the model proposed for the Tinella must satisfy the planning framework established for the Belbo torrent River Contract signed in 2010; as a result, the Tinella is emblematic, insofar as it is considered not just a tool specifying the strategic territorial policies policies, but rather a method for bottom-up construction thanks to widespread involvement of the local population in regional upgrading projects. The specific features of the Tinella region, chiefly characterised by vineyards and excellent agrarian landscape, make it suitable for gourmet and cultural tourism, as well as the drafting of policies to regenerate tangible and intangible relationships which over the years have been established between the agricultural world and the fluvial system. Furthermore, it creates synergies between the integrated upgrading of the fluvial area and economic regional growth based on the development of local resources which have become increasingly important nationally and internationally in relation to the Unesco nominated zones which cover most of the basin.

The work on the Tinella project is part and parcel of the methodological and procedural model of the River Contract, fully integrating the participative process and technical content. As regards the former, the consultation conducted in the region (involving primary and secondary schools, as well as on the web through the social network, Facebook) outlines the objectives of reaching good (impartial, wise, and efficient) decisions and knowledge which are prerequisites required for the start-up of the first activities regarding active participation of the local population (Medaglia, 2012). Technically speaking, the proposed model is a strategic, interdisciplinary and integrated vision expressed in its spatial and design dimension as a theoretical plan.

IIIb. Knowledge of the region

Considering the customary prevalence of ecological aspects, intrinsically linked to water quality and quantity, the Tinella torrent method seeks to achieve a more integrated and multidisciplinary regional vision. The decision stems from the knowledge that the river contract could contribute not only to the integration of individual sectoral tools related to the management of the hydrogeological system (basin or district plan, water protection plan), but also to the possibility of combining and linking different strategies found in regional planning and programming tools. It was therefore considered extremely useful to reflect on a more extensive analytical framework of the fluvial region capable of emphasising a variety of critical issues and values which could be brought into play in the overall project. The proposed interpretation framework is very broad and includes elements traditionally considered in the water management sector, and urban, regional and socio-economic planning.

In this case, a preliminary analytical exercise (status of the waters) initially considered the topics directly associated with water quality, using indicators and procedures established by the Legislative Decree 152/99 to implement Directive 200/60/EC and recently revised by Arpa (Italian Regional Environmental Protection Agency). At the same time, an analysis of hydrographic dynamics and criticalities in river morphology and water balance highlighted potential areas of overflow. Another part of the interpretive framework (regional and landscape system) considered: nature and vegetation, defining the characteristics of the ecological network of the fluvial system along the torrent and its tributaries; anthropic dynamics, starting with the choice of local urban plans;

landscape constraints and assets, including those formally recognised by current national laws (recently collected in Legislative Decree 42/2004 and subsequent modifications and integrations), the ones considered as such by the Regional Landscape Plan, or those still considered elements of cultural importance by Unesco during its studies to establish nominated areas which include a large portion of the Tinella region; perception and fruition system, not just of the fluvial area, but also the more extensive hilly region in the sub-basin. Finally, consideration was also given to the demographic and economic dynamics (socio-economics) of the Tinella region in the last decade, as well as demographic and economic trends (agriculture, industry, trade, services, and tourism).

III.c. Citizens' participation

In line with the most established Italian and European practices, different approaches can be used in participative experiments. Some authors define them as "models", others "levels", or also "degrees" of participation. In essence, they are different methods used to practically achieve participation. These may relate to four categories: communication, animation, consultation and empowerment (Ciaffi, Mela, 2006), each with its own specific objectives and methods, although they can also be applied separately.

As regards these participation methods, this particular experiment was undoubtedly part of the consultation category and, to a lesser degree, communication; it also paved the way for future participation projects which may develop during implementation of the Belbo torrent River Contract. Accordingly, the objective was to be as inclusive as possible and primarily involve ordinary citizens often unconnected with River Contract formulation mechanisms.

Citizens' participation was initiated using a "casual selection method"; this involved forming a reference sample representative of the whole community. Casual selection undoubtedly has several advantages: it excludes any a priori filter of admissible viewpoints and, above all, it allows citizens who still haven't formed an opinion to participate (Bobbio, 2004). In this case, the reference sample was not divided into categories with specific socio-demographic characteristics; however, the method endeavoured to obtain a final sample as representative as possible with respect to the socio-demographic composition of the local population. Consequently, the consultative process was based on three important activities, each aimed at a precise objective: the first targeted younger individuals (primary and secondary school students), the second targeted an intermediate age bracket, while the third targeted the elderly. Each of these activities used its own method chosen according to its (alleged) effectiveness in targeting the reference population. Traditional questionnaires were distributed directly to students and the elderly. Instead, a virtual questionnaire for the intermediate age bracket was circulated to web-based communities. The idea of circulating a virtual questionnaire on the web was initially inspired by considerations regarding sample representativity. Indeed, the idea to include young and old members of society was developed because this made it possible to conduct the experiment all over the territory; instead, given the substantial numbers of participants in the other age brackets this would have been more problematic. This decision to use this tool resulted, on one hand, in widespread regional distribution and, on the other, in the rapid circulation of information, and equally rapid elaboration of the answers. As regards the distribution method, a decision was taken to use one of the best known social networks: Facebook. The choice fell on Facebook because it is a widely used web channel, not only numerically (number of hits), but also temporally (frequency of hits), making it possible to distribute the questionnaire in a relatively short space of time. In addition, using Facebook to distribute information is not an entirely new procedure. In France and Belgium, for example, the social network has recently been used to "advertise" several participative activities associated with river contracts: a number of pages were created (Contrat de rivière Haine, Contrat de rivière Senne, Contrat di rivière transfrontalier du Segre en Cerdagne, etc.) and are used today as a means of interactive communication between administrators and citizens involved in contract management activities. The consultation activities for the Tinella lasted approximately seven weeks; the final sample registered 339 individuals, or 2.1% of the reference population (16,226 inhabitants), fully in line with average participation rates: 1-2% in Spain (Ganuza, 2006) and Italy (Bobbio, Pomatto, 2007).

Figure 2 shows that the most representative sample was the intermediate age category, with decidedly low margins which are of little importance (the highest was 5.4%). On the other hand, for the youngest (0-13) and the oldest individuals (over 60) there was a difference in the gap between the population and the sample. In this case, the younger were more numerous in the sample because, despite an effort to keep the number of questionnaires to students to a minimum, the six school sections (87 total students) actually represented a substantial part of the sample. The elderly represented a second distortion since they are hardly represented in the final sample; as mentioned earlier, this is due to the fact that the elderly find it more difficult to participate using the web; the experiment conducted across the region allowed the questionnaire, within the timeframe available, to be submitted to 33 individuals (while with a more "balanced" sample, this figure should have been more than double).

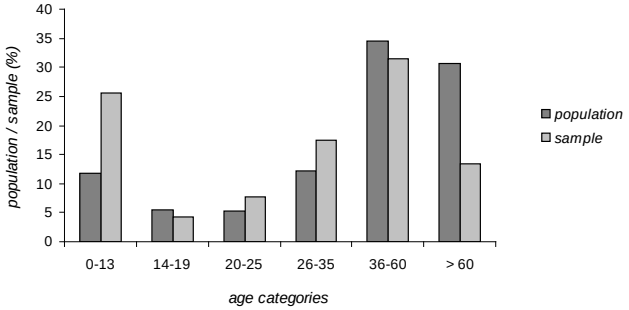

Figure 2 - Percentage distribution of population and sample by age categories.

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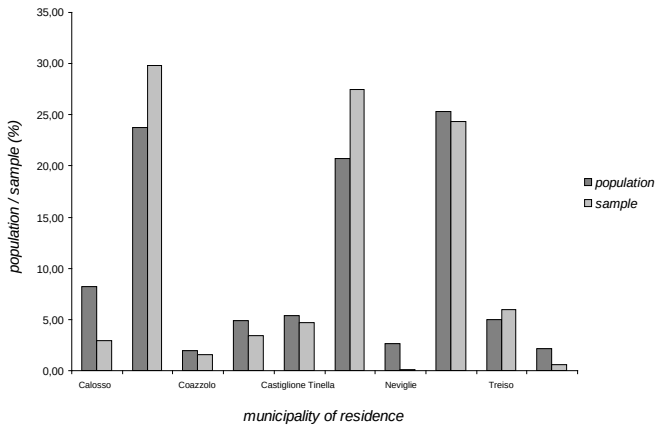


Figure 3 - Percentage distribution of population and sample by municipality of residence.

The final sample is representative of the population also with respect to the spatial distribution of responses (Figure 3). The ratio for the various municipalities of residence in question was definitely positive; the margin between one and the other was roughly 1%. On the other hand, the margin was higher, almost approximately 5%, just for several other municipalities.

A decision was taken to divide the survey content of each questionnaire into three sections; the aim of each section was to understand how citizens - and therefore the local community as a whole - tackle a particularly important topic in the construction of the project. The first part focused on the "perception of the fluvial environment" in order to understand what image the inhabitants associate with the river element in terms of water quality, the cleaning of coastal areas, the genuine nature of the landscape, and risk of overflow. The second section was called "fruition of the fluvial region"; it investigated not only the current levels of regular visits to the fluvial region, but also the possible upgrade pleasure projects which may be implemented by the River Contract. The key objective of the third and final section was to understand "whether" and "to what extent" citizens would be prepared to play an active part in activities to implement the river contract. On the whole, answers indicated the commitment which citizens would be prepared to undertake in the management of specific activities. The answers reflected the "level of commitment" of citizens, in other words, they were willing to participate in activities in the reference region whether or not the prerequisites are in place.

III.d. Planning proposal

The results of the consultation process were closely combined with the technical analyses developed during the expert's interpretation of the region and then inputted into the proposed strategic and planning proposals (see Table 1) with its five overall objectives: water quality improvement; restoration of water balance; management of hydro-morphological dynamics; regional and landscape upgrade; enjoyment, development and promotion of the region. As regards each planned action, the project implementation methods are indicated in the action plan, as are the individuals to be involved, the relationship between the various actions, and the strategies used to include the population in the process.

The action plan was regionalised in the hypothetical action plan (see Figure 4) allowing experts and citizens to understand the spatial dimension of these actions and how they relate to local planning skills. The same "large area project" could be used as a working hypothesis to complete the process in the next active participation and consultation stage. This may also help to establish the financial and management tools required to implement strategies.

IV- . Results and Considerations on Participative Experimentation and Possible Implementation

There are two ways to assess the advantages of including social actors in the decision-making process right from the preliminary stages: one is decision content, the other is the relationship with the actors. In actual fact, we refer here to the advantages associated, in a broad sense, with the participative process (Gastil & Levine, 2005; Forester, 2010; Healey, Hillier, 2008; Susskind, 2009; Fung, 2010); however, it is also extremely important to reaffirm them in a contextual framework such as the framework of river contracts.

Participative experiments have been important in urban areas for many years (especially in degraded districts), but the situation is different in rural and suburban regions. In these areas, normally considered by River Contracts, the topics associated with regional planning are discussed - with difficulty - by very diverse individuals. In addition, the strategies proposed by well-known planning tools and regulations are the result of the decisions taken by institutional actors and important social actors directly involved in the processes.

With regard to the relationships between actors, it is logical to think that this first step can bring advantages which are in some ways discernible in the short or medium term (Ciaffi, Mela, 2006). The first advantage is an improvement in the relationship between institutional actors and citizens. Indeed, the start-up of an inclusive process can undoubtedly lead to a rapprochement between all social parties by improving trust between institutional actors and citizens. This process provides two advantages. First of all, it boosts citizens' trust in institutional actors, while feeling explicitly called upon to express themselves on decisions affecting their territory. On the other hand, institutional actors become increasingly aware that a significant part of the population is attentive to issues relating to a river or, better still, is willing to participate in forms of open dialogue and share ideas about the future landscape of the fluvial region.

Regarding the quality of the decisions concerning large scale and local choices, consultation of citizens primarily means

identifying the problems and opportunities of a certain region. It also means making decisions which, in the words of Susskind and Cruikshank (1987), are more equitable by having strong collective visions, wiser by being aware of multiple viewpoints, more efficient due to the reduction in time and costs of the measures, more long-lasting and simpler to implement because they anticipate potential opposition to the measures.

These are characteristics well suited to the objectives proposed by a River Contract. The scope of the contract is to give citizens the opportunity of debating a subject of obvious collective interest, in other words, the management of the water resource, while enabling them to understand the need for the common use of this asset. In this regard, Magnaghi (2006) points out that through participation "it is possible to overcome the dichotomy between "public use" and "private use" of assets, by reintroducing the third concept of "common use". Common use should relate to many components undergoing privatization and removal from collective fruition and management: water, energy, [...], agro-forestry landscapes, urban public spaces, open unbuilt spaces in the sprawling city, the historical road network [...] and so on: in one word, the region (territory?)".

With regard to the advantages brought about by the preliminary start-up of the process, in other words equity and knowledge, the River Contract therefore needs to create close relations between the vision of the experts (always necessary) and that of citizens. This can be achieved through the inclusive process laid down in river contracts, although in practice the process only involves the most influential social and/or economic actors. Starting with sectoral analyses, and the cognitive framework - the basis for dealing with fluvial enhancement with a good technical "conscience" - it is then necessary to evaluate other problems, different viewpoints and alternative approaches which can be identified only through full public consultation.

Furthermore, decisions concerning implementation should be more efficient: in this particular case, opposition to objectives and measures during implementation is less likely if decisions are based on a more inclusive process. It is true, however, that organizing a participative decision-making process requires additional resources compared to ordinary processes, both in terms of time and real costs (for communication or facilitation or accompaniment services). However, potential problems that might occur during implementation should also be considered: these problems might undoubtedly be more likely in the case of traditional processes, and would force decision-makers and experts to abandon some decisions in order to formulate new ones. If on the other hand, as in this particular case, decisions are based on a more inclusive process, these phenomena will be less likely to occur, enabling better management of conflicts. In other words, the time "lost" earlier, is gained later (Bobbio, 2004), and will help to define transformation scenarios that are more long-lasting and simpler to implement.

To increase efficiency and facilitate the implementation of planned measures, focusing citizens' attention on the process and expected results could definitely be an incentive for decision-makers when implementing upgrade measures, also, and above all, the measures which are technically less urgent (Mela, 2002). In this regard it should be said that the river contract is obviously intended as an interdisciplinary tool used to implement measures in an integrated manner. It is clear however that during the process to define specific projects and investments, the most influential decision-makers (the Control Room) will tend to establish a series of intervention priorities which will depend on the financial resources immediately available. It follows that we risk attributing too much importance to the most urgent actions which, needless to say, are those associated with the alleviation of hydrogeologic risk, the cleaning up of water, and management of withdrawals. This is because these aspects are the most pressing at the present time and will be the subject of the "heated" debate which, without a shadow of a doubt, will ensue.

First of all, several institutions (European Commission, Basin Authority, Region) tend to concentrate almost exclusively on these aspects by establishing obligatory standards which have to be implemented before December 2015. Furthermore, since existing organized groups (conservation groups) find it easy to concentrate on ecological issues, they can be moderately influential in the definition of policies when intervening during meetings of the Basin Assembly. Furthermore, ecological aspects should be debated by different categories of individuals (entrepreneurs, farmers, service providers). In other words, there is a risk that the decision-making bodies responsible for the contract focus more on these topics and "postpone" the implementation of certain more remote measures (for example, fruition networks and services upgrades) which in some cases are not included in the action plan schedule. Therefore, if decision- makers are aware that, right from the preliminary phase, a certain number of citizens expect tangible results in the region affected by these changes (cycle/pedestrian paths, leisure areas and equipment, services), then this is an added value for the implementation of the envisaged measures.

However, the small groups of citizens (schools, associations, etc.) involved in the participatory process of the Tinella provided interesting suggestions regarding the enhancement of public services and leisure facilities.

The feasibility of the projects and effectiveness of the measures are further reinforced by a draft plan or general masterplan. Generally speaking, most River Contracts choose not to draft this kind of plan illustrating the effects of the projects and measures on the territory and the outcome of the established objectives. On the other hand, a spatial plan or a masterplan integrating different projects is important during implementation; right from the first ratification of the action plan, it clearly illustrates the technical and economic feasibility of the choices made, and highlights the commitment and responsibility of the institutional actors. It's true that during the

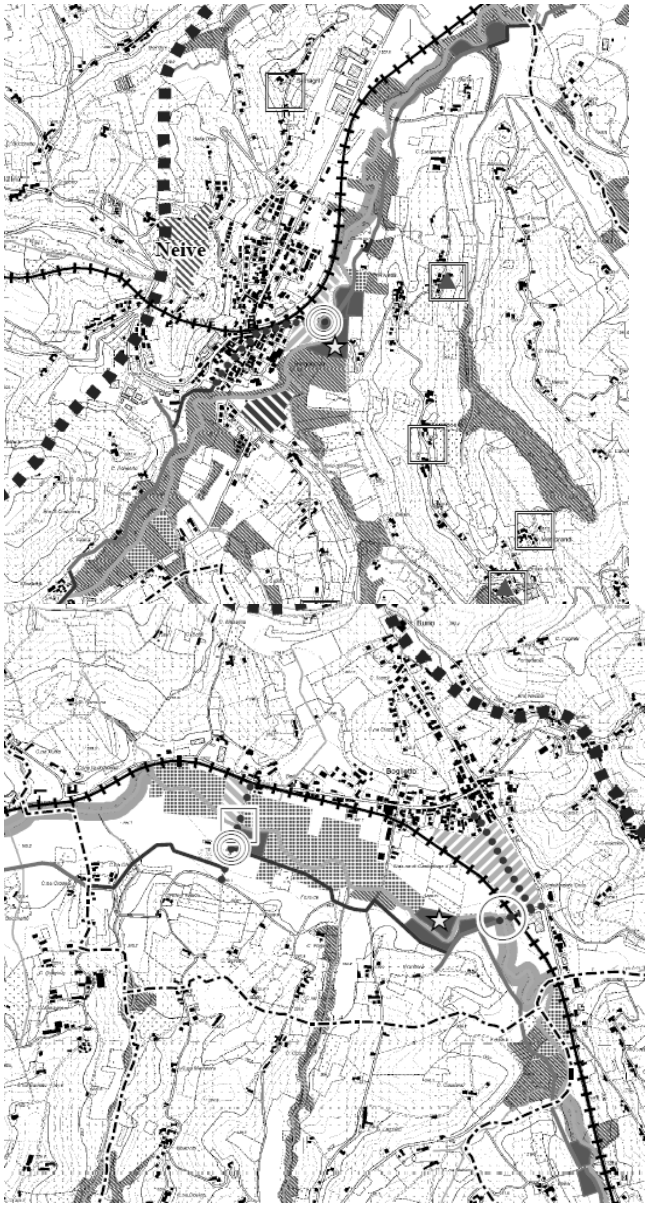
drafting phase of the River Contract the masterplan can delay the technical and decision-making process (schedules, agreements), but in the long term it guarantees greater transparency in the decision-making process and also underscores the planning skills and awareness of local administrations. This generates greater awareness of regional resources and also creates synergies between River Contracts and other development proposals such as large scale plans (Voghera, Avidano, 2012). The planning proposal - communicated through a masterplan and translated in several project ideas - also plays an important role in emphasizing the interdisciplinary relationship between objectives, measures and interventions which are not always so obvious in the action plan; this is achieved by facilitating the comprehension of synergies and conflict resolution.

The River Contract only concludes the first stage of the entire planning and spatial design decision-making process. Indeed, it is extremely important that the planned action structure, in addition to the evaluation and monitoring tools, proves to be flexible, in other words, it must adapt to any new requirements that emerge during the process. Certain elements of the cognitive framework may change between the drafting and implementation phase (also due to the updating and adaptation of the Arpa Piedmont analysis system to the European Directive); this includes local urban planning which is experiencing continuous (and rapid) development. The action plan and related project should be a starting point, an opportunity, which each social actor involved in the process can use during consultation in order to establish where and how to proceed. This may include "improving" or radically modifying implementation methods and responsibilities, beginning with the continuation of communication and consultation activities and the start of active participation. In this regard, it is crucial for the process to remain open, flexible, suited to the continuous implementation of strategies, open towards other different urban designs and to the ongoing redefinition of the interests and responsibilities involved. In fact, it is particularly important to define the role of possible territorial scenarios before the following stage of decision-making and shared responsibility with public and private actors (e.g., companies, owners, developers).

Vice versa, too rigid an approach might lead to the formulation of an additional and operationally ineffective planning tool for fluvial regions; this would fuel the skepticism of part of the political and professional milieu in relation to the "usefulness" of the agreements (Susskind, Cruikshank, 1987).

Therefore, the River Contract may produce better results if it is used as a way to create strategies, declare interests, define responsibilities and locate resources (also financial) by interlinking the policies and scenarios of various tools for the management of fluvial regions.

From this point of view, the quality of the evaluation tool also plays a key role – to be used during the entire process - by acting as a continuous reference to verify congruence between the planning decisions (current and future) and the environmental and strategic objectives recognised by the regional planning and programming tools. In view of possible future developments of the proposed model, a suitable programme will be drafted to monitor the quantity and quality of the work still required, to constantly assess the results, and possibly to redesign the way ahead in order to improve final performance.



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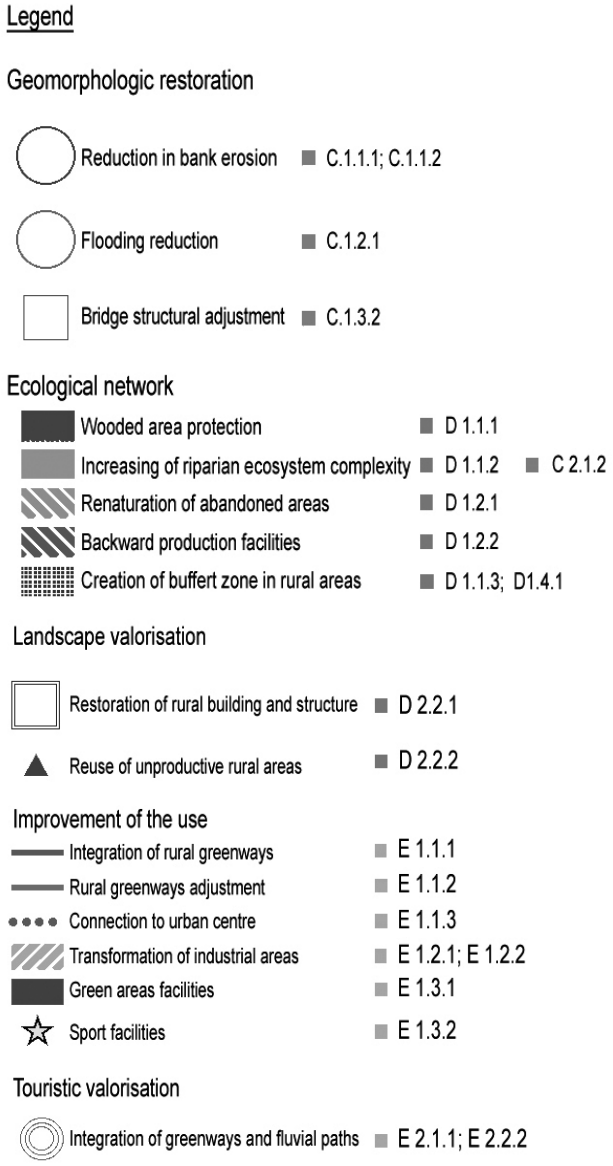

Figure 4 - Planning hypothesis (extracts)

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Table 1 - Objectives and actions of the action plan (part 1 and 2)

GENERAL STRATEGIES		SPECIFIC STRATEGIES		ACTIONS		SUB-ACTIONS	
A	IMPROVEMENT OF WATER QUALITY	A1	*Curb on polluting substances*	A1.1	Defionition of specific programs to improve firm works	A1.1.1	Adaptation of the under-sized plants
						A1.1.2	Use of natural depuration techniques
				A1.2	Definition of criteria for the wastewater disposal in case of environmental criticality	A1.2.1	Adaptation of inadequate plants
						A1.2.2	Assessment/mapping of alternative plants in which confer wastewater excess
				A1.3	Definition of criteria for the reduction of vineyard pollutants	A1.3.1	Implementation of regional disposals to reuse wineries effluents in the agricultural
						A1.3.2	Certification of companies operating in the wine trade
B	RESTORATION OF THE WATER BALANCE	B1	*Decrease of water taking*	B1.1	Management of concessions in relation to water needs	B1.1.1	Revision of issued concessions and assessment of the actual needs
						B1.1.2	Definition of criteria for the issue of new concessions
		B2	*Diffused water recovery*	B2.1	Stimulation of actions for water recovery throughout the area	B2.1.1	Recovery of natural water storage
						B2.1.2	Collection of rainwater
C	GOVERNMENT OF THE HYDRO-MORPHOLOGICAL DYNAMICS	C1	*Geomorphological adjustment*	C1.1	Reduction of banks erosion	C1.1.1	Re-immission of sediment in river bed
						C1.1.2	Re-routing of the current
				C1.2	Reduction of the rise of the river bed	C1.2.1	Localized slope adjustment (increase) / sediment removal and transfer of excess sediment
						C1.2.2	Forestation upstream to reduce the supply of sediment downstream
				C1.3	Localized reduction of flood risks	C1.3.1	Strong limit for new buildings within the flooding areas
						C1.3.2	Structural adjustment of the bridges with poor drainage
		C2	*Presidium and mainteinance of the region*	C2.1	Enhancement of agricultural activity and its role in the management of the river area	C2.1.1	Increase the access to funding channels for environmental good practices
						C2.1.2	Stimulation of riparian manteinance for ecological rehabilitation of the banks

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D	REGIONAL AND LANSCAPE UPGRADING	D1	*Restore of the greenway*	D1.1	Improvement of the vegetation system	D1.1.1 Protection and monitoring of natural woodland
						D1.1.2 Increase of the riparian ecosystems comlexity
						D1.1.3 Mitigation of the impact from intensive agriculture
				D1.2	Recovery of degraded areas	D1.2.1 Renaturation of non-used industrial areas within the river zone
						D1.2.2 Withdrawal of industrial buildings
				D1.3	Reduction of waste in riparian zones and river bed	D1.3.1 Management (programs) of waste in river bed
						D1.3.2 Removal of waste currently found in the riparian zones
				D1.4	Improvement and enhancement of the widespread naturality	D1.4.1 Creation of "green buffers" on the cultivated areas edges
		D2	*Landscape enhancement*	D2.1	Consolidation of the perceptive identity of the river	D2.1.1 Re-forestation of low-density vegetation parts of the river
						D2.1.2 Maintenance (or opening) of small apertures ("holes") for visual enjoyment of the river from rural tracks
						D2.1.3 Maintenance of free visuals between roadway/railway and river
				D2.2	Upgrade of rural villages	D2.2.1 Functional improvement of rural structures
						D2.2.2 Strengthening of the ecological role of farms unproductive surfaces
E	FRUITIVE DEVELOPMENT AND PROMOTION OF THE REGION	E1	*Fruition development*	E1.1	Improvement of the rural trails system for the conscious enjoyment of the landscape	E1.1.1 Adaptation of rural tracks for cycle and pedestrian mobility
						E1.1.2 Interconnection between urban cycle-pedestrian routes and rural trails
				E1.2	Development of town-river relations	E1.2.1 Openings of gates within compact industrial zones (for better accessing to the river area)
						E1.2.2 Adjustment of industrial areas interposed between town and river, according with lanscape compability criteria
				E1.3	Creation of spaces for the enjoyment of the river area	E1.3.1 Creation of small green areas (public or private for public use) in overlookin the river
						E1.3.2 Creation of a area for recreation and sport
		E2	*Tourist enhancement*	E2.1	Tourism development	E2.1.1 Phisical interconnection between the major tourist routes and river trails
						E2.1.2 Realization of a uniform signage system

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