



Index
and english translation
of the articles

	Paolo Avarello	The Paper Plan
Problems, policies and research	<p><i>edited by Attilia Peano, Grazia Brunetta Attilia Peano Francesco Puma, Tommaso Simonelli</i></p> <p><i>Patrizia Lombardi Angela Colucci Grazia Brunetta Patrizia Saroglia Attilia Peano</i></p>	<p>The planning of river basin towards integrated policies Environment, territory, and landscape A sustainable future for the Po river basin. The po river valley Strategic Project Assessment of Special Strategic Project by the Analytic Network Process The planning of river basin in Europe. Aims and central issue Sea, beyond the procedure for a Po river basin valorisation project Participation in Sea: a complicated question A territory and landscape project</p>
	<p><i>Dunia Mittner</i></p>	<p>Planning and large urban projects. Stockholm 1990-2025</p>
Projects and implementation	<p><i>edited by, Valeria Fedeli Alessandro Balducci Zheng Shiling Yongyi Lu</i></p> <p><i>Li Qin Gan Jing Valeria Fedeli Corinna Morandi, Luca Gaeta Remo Dorigati Andrea Rolando Antonio Longo</i></p>	<p>Shanghai, Expo 2010. Better city, better life: a new bet on the city Spatial planning and urban development The meaning of Expo 2010 Shanghai Between the glorious past and the splendid future at the opening of the world Expo 2010 China The Regional and Town Planning of Shanghai The design process for the Expo Shanghai site planning Notes of travel. Hybrids Notes of travel. Milano-Shanghai: round-back trip Notes of travel. The flowing river Notes of travel. The framework of open spaces for the Expo in Shanghai Notes of travel. 2010 Shanghai, a profile for a changing city</p>
	<p><i>Stefano Stanghellini</i></p> <p><i>Ezio Micelli</i></p> <p><i>Assunta Martone, Marichela Sepe</i></p> <p><i>Elisa Morri, Giovanna Pezzi, Riccardo Santolini</i></p>	<p>Equalisation, compensation and incentives as news tools</p> <p>Transfer of development rights and the land use plan for urban planning</p> <p>The responsible approach to strategic planning: the Ppes and Sga of the Picentini regional Park</p> <p>Transformation of the territory in the Municipality of Rimini through the diacronica analysis of the landscape</p>
Profiles and practices		
Methods and tools	<p><i>Antonio Alberto Clemente</i></p> <p><i>Francesco Chiodelli</i></p>	<p>City: a term at its end. Revisiting the General theory of urbanization</p> <p>The centre of the planning: the technical rules</p>

Equalisation, compensation and incentives as new tools for urban planning

Stefano Stanghellini

Recent administrative judgments on Rome Local Plan have given a strong push to the debate on the use of equalisation and compensation and of the related institutes, i.e. the 'volume transfers', the 'buildings credits', the "extra charges" etc. As a matter of fact, from 1995, year of INU Congress where the equalisation was recognized as the principle to be applied in the local plans for resolving the property and building system, since today, urban regulation, local practices, regional laws have widened the equalisation's principle and its operational domain. In general rule, an atypical right has taken form, the so called 'building right' that has to be intended as the volume or surface unit that can be built on the its generating land or on another one.

This year, at first, the Lazio Regional Administrative Tribunal stated that some rules of the Rome Local Plan regulate matters - such as the property rights and the real estate taxation - that the Constitution reserves to the State and it declared unlawful the fact that the rules regulated the fields above mentioned beyond the framework of any State law. Afterwards, the State Council developed a different concept, based on two pillars; from one side, the planning power of the Administration in the frame of its planning authority and from the other the possibility of applying private law and consensus based models for pursuing public interest finalities.

The question is that in 15 years the national legislator was not able to define a modern legislation regulating the 'building rights' generated by equalisation, compensation and incentives, and which reorganises the planning procedures and the fiscal system supporting the urban regeneration. Hoping that soon it happens, the paper intends to clarify some technical elements useful for the ongoing planning activities.

Equalisation aims. Equal distribution of buildings' rights

Recent regional legislation attribute to equalisation the task of equally distributing building rights recognised by urban planning to land owners interested by interventions and equal charges derived by territorial equipment realisation. First equalisation profile is so related to building capacity distribution.

Technically speaking, equal distribution of building rights is achieved grouping lands to be transformed into different categories homogeneous under the point of view of their of fact and legal conditions, and so attributing territorial building indexes, properly graduated, to the defined land categories. Afterwards, land involved in a unitary planning process will be grouped into the urban division whose transformation will be given to an implementation plan. In comparison to the traditional parcelling out plan,

equalisation has some substantial differences. The first one is that buildings' capacity is not given land by land on a discretionary basis, but it is attributed to land classes according to their building's suitability. A second one is that the equalisation previews to give to the Municipality not only lands where infrastructures and social services have been realised, but more lands.

No administrative judgements question this way of applying equalisation. On the contrary, judgements give important support to the three fundamental pillars of the examined tool. The first one is related to the equalisation index of territorial building. The second one is related to the land amount to be transferred to the municipality in order to be able to build on the remaining part. The third is related to the question of the closeness or distance of the lands part of the urban division.

In respect to the landowners complains about an index building of 0,25 cm/sm, considered to be penalising, and to the obligation of giving to the local authority 80% of total surface, so that it is considered dispossessed, State Council states that "as the building volume (...) is calculated on the whole lot and consequently also involving the surfaces object of transfer (...) area transfer does not influence the definition of the building volume". Lombardy Administrative Tribunal calls 'equalisation transfer' the technical methodology through which "the land to be ceded to the administration develops its own volumetry (...) that can be implemented only on the areas where buildings rights can be used". The urban division is so a consolidated tool not only when it groups close lands, but also in its 'archipelago' modality, that is when it groups far lands.

The problem of urban division and landowner's consortium implementation still remains. The problem has both a technical and a law component. The technical one concerns the perimeter of the urban division, which cannot be done only following morphological planning criteria, but it has also to be defined considering the property structure. The law component is related to the consortium definition and its capability of acting toward inactive landowners. Difficulties of reaching an agreement among landowners become bigger and bigger in urban regeneration projects. Consequently there is the need of new rules for a major effectiveness of the landowner's consortium creation.

Equal charges distribution

Since the beginning equalisation was applied so to give to the municipality a bigger amount of areas and services than the minimum previewed by law. This is a second grade equalisation, because it is not related to equality among landowners, but to equality among the category of landowners and the whole community. On the front of the equal charges distribution, the time has brought progresses on the conceptual and operational points of view. Toscana Region has given a wide interpretation of equalisation, that requires a proportional repartition of buildings rights and economic charges for realizing

infrastructures and services of public interest, charges related to free assignment of areas to the municipality, charges related to the compulsory shares of residential buildings for social purposes.

Urban transformation projects have a strong impact on the urban system, causing a works and services' demand major to the one required for the needs of the population and of the new activities to be settled. Therefore the municipalities in order to finance the building of infrastructures and equipment try to regain to the community at least a share of land valorisation. As in each local system private projects are more than one, there is the need of an equal distribution of the charges to be supported for the realization of the infrastructures and services required for their urban sustainability.

The fulfillment of his need is very complex because public works to be realized are usually very expensive and not functionally sharable. When public works can't be equally charged on private projects in the frame of implementation plans, there is the need of a private contribution for their implementation by the Municipality. In the practice 'extra charges' have been introduced, additional to the building charge established by national law, also known as 'sustainability contribution' for underlining its project finality in comparison to the taxation one.

What can be done, what has to be done with balance, what cannot be done

Equalisation replaces the public plan management (public works planning, expropriation, call for tender) with the 'Public Private Partnership' (PPP): landowners take part to a consortium and they implement the defined project plan, in the same time realizing the public works to be ceded to the municipality together with the agreed areas and they pocket the urban rent produced by the equalisation index. Nevertheless, PPP requires a suitable set of economic and technical tools.

All the cases where the Administrative Justice is involved can be considered as failures of the PPP application. Legitimacy of the privates' position apart, about which the Judge has to express his point of view from time to time, here we would like to underline in the sentences some criticism towards a certain technical lack in the equalisation application and consequently the break of balanced and reasonable principles and the recognition of real technical mistakes.

The request of ceding a major part of the area or the application of an high extraordinary contribution, for example, can be considered in contrast with the general criteria of balance and reasonable principle. From the economic point of view, the set of technical parameters forming the equalisation tool have to assure an high degree of feasibility through the active participation of landowners. This is the reason why during the plan implementation, the owners consultation is deemed right, following transparent procedure so to verify their willingness to cooperate and in the meanwhile to enhance the equalisation tool.

The extra changes imposition is a very difficult aspect. In

particular, Rome Local Plan previewed a financial contribution equal to 2/3 of the land plus value deriving from a major building index. Lazio Administrative Tribunal judged the extra charge as a kind of economic compensation of Public Entities activities without the necessary state legislative basis. On the contrary, the State Council deemed the abovementioned 'extra compensation' characterised by optional and bonus feature. The question has not been solved yet and so the Administrative Justice could take every similar tool under exam.

A controversial point is the possibility for the Municipality to assign to itself a building index on private properties. According to Lazio Administrative Judges' interpretation, the Municipality cannot share the building index, if any specific agreement occurred with the landowners. In the case of Rome Local Plan, the contested norms define different building indexes for the urban areas, making a difference among private building areas and those that before were not building areas and they give, for example, 'to the not building areas' an index of 0,3 sm/sm, where 0,06 for the landowners, 0,06 for the landowners in the case of agreement with the Municipality, but subject to an extra charge, finally 0,18 sm/sm for the Municipality.

Instead, the State Council deems that the tool in question has to be interpreted as follows: "the planner (...), after the static phase consisting of the attribution of the urban destination to each area and of their building indexes, intends to give a dynamic dimension to the local plan able to preview the future evolution of the town organization" and "the innovative rules (...) do not impact on the building index recognised to landowners, but on a future and potential building index, in comparison to that immediately and actually attributed to the same areas to the urban instrument".

The right solution of the examined question is so in the definition of public-private agreements. The definition of an equalisation plan can follow this direction with decision, as the State Council argument brought to overcoming the principle of relating the building right to the area ownership.

Transfer of building rights without recurring to urban division

The transfer of 'building rights' through equalisation models not applying urban division represents a wider problematic scenario. So for example, Lombardy Administrative Tribunal has examined the case of building rights transfer of which the plan supposes the transfer to the aim of ceding to the municipality areas for services, which are not transferable and consequently marketable due to the specific implementation tools and it has judged this condition similar to an expropriation restriction. In the experimentation related to the building rights transfer outside the urban division institute, two possibilities have been previewed:

– building rights transfer among not close areas, but linked by the urban plan;

– building rights transfer not determined in advance by the plan.

In the first case, the plan identifies the areas where to transfer the building rights. In this case the plan has also to define the maximum quantity of buildings rights to be received by a specific area. This amount does not solve the problems deriving from the application of the examined tool.

As reference to the areas addressed to public works and services and so ceding building rights, the lack of direct link with the receiving areas can produce contradictory effects under the point of view of equity. Ceding landowners can have difficulties in finding interested buyers. Similarly, if maximum quantity of hostable building rights represents not only a limit but also a plan's objective, it is necessary to previously verify if owners of building rights are going to transfer them. These possible difficulties have to be previewed when the equalisation tool is defined. Therefore the plan has to preview the needed measures, such as the preliminary agreements definition with landowners, inclusion of transfer incentives or other measures.

In the second case, the free market guides the transfer. Naturally, the urban plan defines a subset of areas hosting the buildings rights and of the ceding ones, in addition to the public objectives to pursue. But it is a duty of the landowners where the rights could be hosted to contact the landowners of the ceding areas, or the contrary. In short, this model assumes a new market of the building rights.

This is a fascinating hypothesis because it suggests an evolution of the building regime in line with the “financialisation” of the building markets. Following this trend, we have to recognize to subjects different from the landowners of urban areas the possibility to buy the building rights and to keep them waiting for their allocation on some areas. Suitability of this hypothesis with the national civil laws apart, that now seems to be a problem, in the urban context it must rise a question mark the fact that the plan can generate buildings rights not addressed to a specific project. In these cases, the building rights become an entity apart from the project to be implemented and their value will be related to the localisation that the landowner will be able to get from the Administration.

Equalisation and incentivisation

In the areas of possible transformation, in addition to the building rights generated by equalisation, similar building rights can be produced by compensation and incentives. In order to ease free ceding of areas to the administration for social housing purposes, law n. 244/2007 introduced the ‘building bonus’, i.e. the attribution of major buildings rights to private landowners. Also in the past, in order to support private urban and environmental intervention some regional laws recognized ‘building rights’ or ‘building credits’.

In particular, Veneto Region previews that ‘building credits’ are recognized if “inadequate works and deteriora-

tion elements are demolished or if urban, landscape, architectural and environmental quality are enhanced”. The ‘building credits’ are noted in a register and ‘they are freely marketable’. Umbria Region decided that “municipality urban tools can preview the use of building rights (...) for compensations levied to landowners in the case of (...) demolitions without reconstruction on the place for urban purposes, renewal and requalification of the areas, elimination of environmental obstacles”. In addition, always Umbria Region previews that municipalities define, in the historical centres, areas for priority requalification (ARP) and that for these areas they approve requalification programmes previewing ‘building bonus’ for historical buildings owners to be used in development areas outside the historical centre.

Different regional laws preview the possibility to attribute to owners of expropriated lands some building rights or building credits instead of an expropriation indemnity.

A recent project of law of the Umbria Regional Council focused some aspects of the ‘building right’, till today in the shadow and it clarified the different genesis and use of the building right according to its derivation from the equalisation, compensation or bonus.

The ‘building credits’ derive from a financial municipality need (compensation instead of indemnity payment) or from a land quality (environmental obstacles elimination). In both the cases the relation is with a monetary value (indemnity or expropriation, demolition costs) and it is attributed to the landowner. Building bonus, instead, is linked to the project's quality and it has to do with the major value of the planned buildings and the major costs afforded for their better quality. The ‘building credits’ so generated are mixed, in the municipality territory, with ‘building rights’ deriving from equalisation.

All these are new problems, not fully examined yet. An aspect still not well known is the fact that bonus and compensation generate additional building rights, affecting the size of the planned urban development. Another aspect is that these ‘additional buildings rights’ take part to the building market: if they have a relevant quantity, with the same demand on the market, this causes a decrease of the building land's value and of their own value, with the risk of lowering their effect. A crux problem is that the value of a building right transferred from an area to another varies consistently. This can be solved trying to a suitable association among ‘taking off’ and ‘landing’ areas, or thanks to the definition of criteria and procedure so to making equal the market value of the total rights to be transferred.

Planning and market: need of a synthesis in a renewed urban plan

From the urban planning point of view, the possibility to have ‘building rights’ to be transferred requires a deep knowledge of the kind of city that the ‘landing’ of this rights will define. If the plan is organised on urban divisions, the areas where the rights will be allowed to ‘land’ and the quantities to be received will be defined toge-

ther with technical parameters of the urban division. The market functioning is so finalized to the implementation of the city's idea decided during the plan definition through the procedures previewed by laws.

If the urban plan is based on wide areas whose transformation is not predetermined, the definition of the kind of city is given to the private developers and to the negotiation's capability of the Administration. As the real estate markets have not a competitive structure, but can be seen as an oligopoly, it is clear that this structure would affect the urban regeneration, which would be guided by the strategy and the contractual power of the operators became owners of 'rights' packets'. With worsen circumstances in respect to the 'negotiation-based planning' that equalisation wanted to oppose: the concrete risk is that negotiation has place in a weaker and less effective way thanks to the sophisticated juridical and financial instruments that could be defined for managing the abovementioned 'packets'.

The examined problem could assume an original solution in the new plans that distinguish the strategic-structural dimension from the operational one. In these cases the property and building system is outlined by the 'structural plan', it is detailed in the 'operative plan' and it is concretized thanks to the 'detailed plans'. Only in the 'operative plan' building rights transferable to development areas are attributed to the land. Recent regional laws decided that 'operative plan' is defined with the landowners involvement within a competition and consensus-based procedure. The 'operative plan' has to have the designing capability and the social responsibility to build a project of a city of public initiative, making the most of the possibility of using the generating 'buildings rights' according to the collective interest.

Transfer of development rights and the land use plan

Ezio Micelli

While the transfer of urban development rights has been the object of a wide body of critical literature, the same cannot be said of the relationships between this planning tool and the nature and the contents of the land use plans.

Many of the most recent land use plans are based on the notion that the transfer of development rights (Tdr) does not modify the nature and the contents of the plan itself. Following this line of reasoning, the Tdr is limited to providing a different way of implementing the land use plan, traditionally based on the assignment of restrictions and constraints and the successive taking of land for public use, without calling into question the contents of the plan itself. A more precise analysis, however, puts into evidence that the development of increasingly sophisticated Tdr mechanisms has actually been determinant in the planning process: the Tdr is not independent from nature of the land use plan and its use alters the very nature of zoning.

Tdr and the traditional land use plan

The way in which the basic Tdr tool works is well-known. Areas undergoing urban redevelopment are attributed the same development amount without distinguishing between the areas designated to private development and those that are to be expropriated for public use. The appreciation of the land designated to urban development changes significantly: not just some, but all of the properties whose interests are at stake benefit from the land value growth determined by the local government's choices.

As far as implementation is concerned, the local administration and the developer agree on the areas that have to be transferred to the community for public use. What is new, therefore, lies, first, in the attribution of the same development rights to all of the properties undergoing urban development and, second, in the parties' conveyance of the areas exceeding the legal standard to the state.

As in the traditional planning process, zoning can still establish the location of the areas designated to private development and to public intervention, as well as the norms for regulating development. There is, however, one important difference: the urban plan no longer resorts to differential zoning determined on the basis of public or private use.

The increasing reliance on highly flexible urban land-use plans reflects a trend that is more and more common in regional laws for zoning reform. The Tdr tools appears to be compatible with the development of this sort of plan, which is more evolved than the traditional so called substantive plan. The delimitation of the areas subject to the Tdr and the attribution of a development rights to all

of the areas of urban transformation are, nevertheless, independent from the specification of the contents and the uses of the public and private areas of the city.

The rules for the Tdr are nevertheless coherent with more flexible zoning, in which less prescriptive zoning rules are balanced by the identification of invariants or by the some constraints in relation to the specific nature of the development sites. Among the many examples of Tdr programs in which the development of different areas grants considerable room for landowners and for developers to originally promote land use rules, the Reggio Emilia urban plan is worthy of mention.

Tdr and flexibility in land use planning

The Tdr mechanism becomes more complicated when the plan allows the transfer of the rights between areas that are not spatially contiguous. This can stem from the local administration's wish to take over areas allocated to the public domain without permitting any private building development on these sites. The plan therein attributes development rights to the area without granting any effective possibility of private building. When the private development potential is transferred to another suitable site, the areas allocated to public domain are transferred to the local government domain. Compensation, therefore, parallels the basic Tdr programs, where the term is understood as the attribution to a property of a development potential to be used on another site than the one in which it is generated so as to compensate the property otherwise subject to taking.

From a theoretical perspective, the most important aspect lies in the possibility of transferring the development potential in a class of areas instead of just one single area predefined by the urban land use plan. The owner of an area with a development potential that is subject to transfer can choose from among various landowners with which to negotiate an agreement. The freedom of choice fosters the possibility of an effective use of the development potential attributed by the Tdr mechanism, thereby broadening the number of different combinations through which the land use plan may be effectively developed.

Applying the development potential of the Tdr at a distance is an innovative management tool that is capable of modifying the plan's constituent features. Planning no longer projects a single spatial and functional configuration on receiving areas. Since the landowners in sending areas are granted the possibility of using their development potential in various areas, the development of the receiving areas becomes a function of the preferences and opportunities formed by the parties' interaction. When the urban planning tool does not predetermine the Tdr between areas, the land use plan ceases to plan and limits itself to regulating the way in which the attributed development potential is used with the goal of compensating the property, by accepting that projects can be achieved through the interaction of supply and demand. This management solution alters the nature of the plan

itself and modifies its constituent features. The land use plan now grants a vast range of possible cities, the form of which can only be determined probabilistically in accordance with the characteristics of the property and the real estate market. Real estate market values and, eventually, transaction costs are what determine how the land rights are distributed and, thus, how the effective density and the form the urban development will take.

Tdr and the development of a land use plan through rules

In some regions of Italy, urban planning laws allow municipalities to attribute development rights to compensate a landowner for the taking of an area or a building, or for interventions that are coherent with the planning objectives. According to the regional laws of Lombardy and Veneto, for instance, rights can be attributed to landowners and are 'freely marketable'. This is innovative with respect to the Tdr previously discussed in that the development rights may be used freely in all the urban development areas except those allocated to programs of collective interest.

By attributing development rights, the plan ceases to prefigure the form and use of each development area and becomes a regulatory vehicle for all authorized development. Once the amount of development rights is determined in accordance with the available infrastructures and services, the market acts to develop the opportunities offered by the plan, by turning them into projects. Entrusting the management of the plan to this sort of planning tool means limiting recourse to prescriptive land use norms in favor of more general regulation of how the market for development rights functions.

The city of Milan intends to adopt a non-restrictive plan that promotes interaction between the supply and demand of rights, the use of which is subject to regulations aimed at creating a quality urban development. The role of the local administration remains crucial in implementing the infrastructures and the public domain, to which it has entrusted the strategic framework of the city's development, that private supply does not structurally produce.

Innovations of this sort are not void of problems. The real development rights market can turn out quite differently than the perfectly competitive markets of the economic theory, resulting in an excess in the supply or in the demand for rights. Moreover, the transaction costs can be burdensome and render the new modes of urban redevelopment less efficient.

Beyond the difficulties of applying these mechanisms, the conceptual discontinuity of a land use plan that promotes regulation and renounces the systematic design of the city nevertheless remains. It would be mistaken, however, to hold that the use of these sorts of mechanisms is the antithesis of urban planning. The very aim of planning lies in identifying the infrastructural framework and the public domain, which are prerogatives of the administration, and in defining the general norms through

which private real estate development can take form.

The land use plan: between command and control tools and new rights markets

What ties all these different examples together is their taking leave from the use of traditional zoning tools for governing the city's redevelopment and the taking hold of regulations based on the liberalization of development rights, with varied degrees of limitation. From the perspective of public economics, the plan can be considered a tool for regulating highly significant urban externalities. The crisis of the traditional tools for plan implementation has made necessary to revise the planning mechanisms that control the transformation of physical environment. If it is possible to organize a market in which the entities subjected to externalities and those producing them, it is the main Coase's lesson, can buy and sell rights corresponding to these externalities, efficiency in the use of resources can be reached without the direct intervention of the government.

The real estate markets function in ways that contradict the possibility of a free interaction between the supply and demand of rights, and a need for regulation seems nonetheless insuppressible. This is the case of the norms regulating urban form such as, for example, height and alignment, which limit the free use of the rights themselves. In most cases, the mechanisms adopted have been a compromise between traditional systems of authoritative regulation and the variously liberalized rights markets. The Tdr tool and its evolutions prefigure new relationships between the local administrations and the private sector, modifying the attitude towards the uncertainty affecting the city's evolution. It is a possible, though not necessary, route. Other forms of evolution of the land use plan can be based on other tools, such for instance, the systematic recourse to Ppp agreements between developers and the local administration. Nevertheless, the success of such tools is important and appears to be coherent with the new approaches to urban planning. In such a perspective, the new management tools for urban land-use plans foster significant relationships with the nature of zoning, defining possible routes in the evolution of its effectiveness and efficiency representing an area of unquestionable importance for future research.

The responsible approach to strategic planning: the Pppes and Sga of the Picentini regional Park

Assunta Martone, Marichela Sepe

The Picentini regional Park authority, supported by the Naples-based multidisciplinary team of Irat-Cnr, Institute for service industry research of the National research council, started in 2008 a process of responsible land planning, developing the Multiannual socio economic planning for the promotion of compatible activities (Ppes) along with the Environmental management system (Sga). During the experiment in the Picentini regional Park the Irat-Cnr research group set up a method to implement responsible strategic planning processes structured in a manner consistent with the logic of accountability of environmental and social responsibility. In this paper we present the method and its application to the Ppes and Sga of the Park. In this regard, research was mainly devoted to the process carried out with the stakeholders (administrators, associations, schools, citizens) to identify contents of the plan, which was adopted in 2009.

The method

The method consists of an engagement process that authorities, involved in strategic planning, can follow to develop shared and measurable targets, starting point for effective behaviour.

The method is realized through repeated feedbacks in a procedural flow and is made up of four wide working areas (Ao) (see the Method scheme in figure). The Aos are described separately, though often realized in parallel, and their results merge into the matrix structure of figure; their development, explained below, needs continuous change and adjustment to conform to circumstances.

In the first working area named Ao1 Socio-economic and environmental analysis the authority investigates on peculiarity of the territory in which will act, pointing out problems, drawing the development phases, identifying trends that are able to engage sustainable growth. The goal is to define and measure, according with stakeholders needs, a framework of meaningful data for strategic planning. This area, like the others, proceeds according with the results of Ao3: the authority, through key stakeholders listening, realizes which information have to be searched and how to combine them. It is useful to start collecting at first the primary data that are available from different data sources, so as to shape the components of the territory structure (e.g., population, employment, local enterprise, social services). Then it is usually necessary to integrate this background analysis by gathering secondary data through interviews, questionnaire, etc.

The goal of the second step Ao2 Analysis of feasible

territory transformations is to define the complete framework of constraints to be taken into account in the use of territory resources. These information highlight the conditions under which it is possible to use land resources and then influencing authority strategy, so it is crucial to reach understanding and awareness in a continuous dialogue with internal stakeholders (e.g., citizens) and external stakeholders (e.g., other authorities). In protected areas a common restraint derives from Natura 2000, a European ecological network, based on Habitats directive and Birds directive that established the so called special protection areas and special areas of conservation.

The process explained in Ao3 Stakeholders engagement consists of engagement, participation and involvement of key stakeholders that is a distinguishing part of strategic planning process and help the organization in constructing liaisons of trust. A mapping of stakeholders and their preliminary involvement conduct all other AOs, and set up a common language in an ongoing learning path that leads to the strategic matrix (see below) and the survey on financial resources (Ao4). All these information are collected in a preliminary document which explains to and informs key stakeholders on the plan impacts on territory, allowing them to form an accurate opinion.

Several meetings, a standing committee, phone calls, e-mails, a web site set up a community network facilitating the process to achieve a cognitive alignment on strategic goals.

In this Ao4 Financial resources identification the authority identifies and measures the needs of financial resources to pursue development opportunities and possible funding instruments. The private and public opportunities of funding are compared with the potential requirements in a matrix which highlights links among them. The fund research (Ao4) is developed along with the analysis (Ao1 and Ao2) and stakeholders participation (Ao3), in an ongoing process as already explained: the result of Swot analysis and of fund recognition together with the identified relevant topics for territorial development are summarized as in the figure on p. 91.

During the process the authority, together with stakeholders, conceives and selects the possible development actions, coherent with the different AOs and continuously updated so that matching of all information improves over time.

In the matrix the selected hypotheses of development are shown in a hierarchy from long term to short term options: strategic priorities, priority axis, specific objectives, actions.

In the figure on p. 93 Sga and governance structure overlap the matrix, to point out that they influence other activities and are influenced by them.

The Ppes of the Picentini Park

The Multiannual socio economic planning (Ppes), supported by the Environmental management system (Sga), in line with the aims of the park authority and after broad

analysis and consultation, identified the following general objective:

“To enhance the attractiveness of the Park and improve access to information, financial and technological resources in order to protect biodiversity, combat desertification and depopulation and improve the overall quality of life”. This overall objective is the basis for defining the strategic priorities. The first priority is ‘to enhance the attractiveness of the Park’.

By closely linking action targeting Park resources and action targeting its population, the priority embraces the spirit of the plan. The focus of such action is to improve the level of conservation, enhance particular natural, cultural, ethno-anthropological, economic and social aspects, and heighten the awareness of residents, and area users, so that they know what assets they possess and realise the need to conserve them for area development. This awareness concerns particularly local population, a resource in their own right to protect and enhance, as witnesses of traditions and ways of life closely linked to the area itself. The second strategic priority involves improving access not only to financial resources, but also to knowledge and technology. Development opportunities are to be created by making investments at the public, private and public-private levels. Improved access to knowledge entails raising the level of awareness on the part of the public administration and the entire resident population, while through the enhancement of IT infrastructures the Plan will allow large numbers of people to access information with considerable savings both in time and energy.

The third priority is “to protect natural, landscape, environmental and biodiversity values”, a priority to be pursued through the creation of a balanced relationship between economic attractiveness and the ecosystem to achieve sustainable development and, finally, to improve the quality of life of residents, to which the plan attaches high strategic priority, avoiding the creation of a process that would lead to environmental degradation. The strategic priorities outlined above are to be achieved along five axes. The first concerns the particular cultural and natural resources of the region. The strategic objective is knowledge, enhancement and promotion of the heritage of this area by developing tourism compatible with the environment in order to place resources on regional, national and international circuits.

The pivotal importance of energy and risk issues leads to the strategic goal of the second axis, aimed at implementing integrated action for environmental protection, as well as risk mitigation and management. Specific objectives and lines of action in the axis take into account the diversity of environments and land use, aiming at protecting and preserving areas of high environmental value, with species and habitats to be protected, and in respect of principles of environmental management, in other areas. Axis III focuses on agriculture and mountains, characterized by significant innovation and a widened role of entrepreneurs. Targeted actions here

include the start-up of tourist, social or educational activities alongside traditional farm activities, the growth of the entrepreneur along the production chain, organized into short marketing circuits, and crop conversion as a result of changes in Eu agricultural policy.

Accessibility, related to the presence of adequate infrastructures for reaching the area, and usability, in connection with regional heritage and its possibility to be enjoyed, are the key elements of axis IV. The focus is both on transport infrastructure and modal interchange so as to allow access only to vehicles with lower environmental impact and on conservation and sustainable fruition. The axis also identifies the construction of It infrastructure for the exchange of information and data as a suitable solution to reduce transportation within the area and to promote local products and tourism services. The strategic objective of axis V Governance, social capital and human capital aims at reinforcing institutional dialogue within the Park through the enhancement of human capital and social networks. The promotion and preservation of social heritage ensures the maintenance of regional identity, which may be further strengthened by the cultural baggage of individual knowledge and skills.

The specific objectives and lines of action of this axis integrate the criteria of various approaches, setting up interventions to enhance human capital within the economic, institutional and social process. All this involves a necessary simplification of administrative procedures. The peculiarity of this plan is to build up a strong link between actions referred to material resources (e.g. landscape) and to intangible ones (e.g. human capital); the leitmotiv that conduct the research work is the awareness of 'common good' on one side and related responsibilities on the other one.

A remarkable and innovative intuition of the research group is to support exploitation of financial resources by constructing a coherence matrix for each funding instrument (e.g., Fesr) where columns are associated to various lines of the instrument and rows are related to lines of actions of Ppes. This tool requires frequent updating but proved to be very effective for Park administration in getting orientation in the complex framework of european funding, e.g. within the 2007/13 Community programme. In particular the schedule for drawing up the integrated rural Plan for Park areas (Pirap) and its extensions on resources from the Esrf and Esf turned out to be quite straightforward.

The communication activities took a prominent part in the strategic planning process, with attention to transparency toward internal and external stakeholders, to facilitating the comprehension of correct meaning of words in all documents, and even to the graphic design of online and printed documents featuring pale blu as the color of water, the dominant element of Park, and an origami bird, easy to make yet a symbol of ancient culture.

Transformations of the territory in the Municipality of Rimini through the diacronica analysis of the landscape

Elisa Morri, Giovanna Pezzi, Riccardo Santolini

The reconstruction of the recent history of the landscape provides a base of knowledge for predicting short term modifications and planning future landscape management. Land use and land cover changes over the last 50 years within the Rimini municipality have been assessed by comparing 3 maps (1955, 1976, 2003) derived by interpreting remote aerial photographs and satellite images. Urban sprawl and changes in agricultural techniques over the period led to an almost completely disappearance of heterogeneous agricultural areas (seminativi arborati) and land use intensification (soil consumption). In particular, the period 1955-76 was subject to the major 'soil consumption'. Since urbanization and intensification in land use decrease both in quantity and quality of available resources (e.g. soil, water), they modify the possibilities of landscape to provide Ecosystem services.

Introduction

Landscape composition, structure and functions change over the time (Forman, Godron 1986) as a consequence of co-occurrence of natural processes and human impacts.

From mid XX century, flood plain transformation concerned agricultural sector with both an increase in homogeneous agricultural areas (due to agricultural mechanization) and urbanization and spread of infrastructures (Antrop 2004).

In particular, urbanization and the associated infrastructure, determine landscape fragmentation, an irreversible soil consumption, a decrease in ecological resilience of ecosystem to human impacts and, most of all, alter natural resources and ecosystem services used for human well-being.

Urban planning, so far used with 'consumption approach' of natural resources (renewable and non renewable), must now evaluate natural capital and point to the sustainable use of resources to maintain ecosystem services.

Analyzing changes in the environmental mosaic and highlighting areas at different level of criticality, as can be done by overlaying maps of different years, may suggest criteria to planning tools. We chose Rimini study area because it represents an increased urbanization model that involved hinterland too. We analyzed landscape changes in Rimini municipality by comparing 3 maps of land uses (1955, 1976, 2003). The thresholds we chose correspond to important socioeconomic changes at local scale. In particular, before the fifties of XIX century settlement organization corresponded to historical one. From the sixties to the mid seventies Rimini landscape

has changed both in agricultural techniques and hinterland urbanization.

Study area

Rimini municipality (134,52 kmq) is located in the southern part of Emilia-Romagna region.

It is mostly flat; hills rarely reach 200 m. Climate is between sub littoral temperate and sub temperate sub continental (Blasi 1996).

Agricultural landscape is predominant with a very few and scattered forested areas in hilly parts and along the main (Marecchia e Ausa) and the secondary river. Residential, business, holiday activities are along the main roads (A14, Ss 16, Ss 9).

Material and method

We analyzed Rimini landscape using three maps of land uses (1955-1976-2003) on a scale 1:25.000 by interpreting aerial photographs and satellite images.

Nomenclature corresponds to the third level of Corine land cover legend, to which we added roads (local and highway) and scattered buildings. The study area was divided into the Rimini Ptcp (Provincial coordination territorial Plan) units and sub-unit based on territorial and physiographic features.

Rimini maps are analyzed with landscape metrics shown (Fry 1998).

The overlaying pairs of maps (1955-'76, 1976-'03, 1955-'03) allows to evaluate direction of changes and persistence either in the whole area and in units and subunits. Quantitative data were shown in a transition matrix.

Results

In 1955, Rimini was an agricultural landscape, dominated by heterogeneous cultivations (i.e. arable land associated with permanent crops: seminativi arborati) and almost maintaining the features of the mid nineteenth century.

In 1955-'76 period arable land (e.g. non irrigated arable land) (1955: 12%; 1976: 48%) and permanent crops (e.g. vineyards or fruit trees) replaced agricultural heterogeneous which halved their areas (1955: 68%; 1976: 27%). On the other hand continuous urban fabric and discontinuous urban fabric doubled their extent (from 4% to 8% and from 2% to 5%, respectively).

Landscape matrix of 1955 was characterized by few extended typologies (Shei: 0,43), while in 1976 a Shei value of 0,66 indicated an uniform distribution of land uses.

From 1976 to 2003 period heterogeneous cultivations further decreased and were transformed into arable land (18%), urbanized area (1%) and industrial areas (1%). In 2003 arable land made up the landscape matrix (47%).

On the whole in the period 1955-2003 heterogeneous cultivations had almost completely disappeared: in 1955 made up the landscape matrix (68% of total study area) while in 2003 covered just the 7% of the total landscape area. This land use were replaced by arable land (39%),

permanent crops (6%), urban areas (9%), industrial areas (4%), and roads (3%). In the present landscape heterogeneous cultivations can be found as residual patches which lie on marginal zones and have small size and regular shape.

Agricultural areas were transformed partly into continuous urban fabric (from 4% to 9% of total study area), discontinuous urban fabric (from 2% to 7%) and roads (from 3% to 6%).

As to units and sub-units:

- in Marecchia and Uso agricultural flood plain the main transformations involved the agricultural patches and the industrial and urban areas near Marecchia river and n. 16 Ss road, which spread out;

- in Ausa, Marano e Melo low hill heterogeneous cultivations were replaced by arable land and urban areas;

- in Marecchia and Uso low hill permanent crops (vineyards, fruit trees, olive groves) replaced arable land associated with permanent crops;

- urban areas of the coast was almost stable because the sprawl of continuous urban fabric had already happened in the fifties.

In the period 1955-2003 urban areas spread out, as for example in particular Rimini town and coastal villages which at present form a continuous urban belt.

Coastal urban areas gradually saturate the territory and cause soil waterproofing and ecological fragmentation of the study area.

Conclusions

Landscape change analysis shows a loss of original characteristics of the territory. This analysis showed that planning tools didn't consider ecological characteristics of the natural capital in changing soil resource.

In particular the unsustainable use of resources results in ecosystem autopoiesis and in higher demand of energy to maintain production balance: this way to act adds higher fees to population increasing debt for future generations.