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The urban industrial impact on soils in the Mediterranean area

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SUMMARY - The urbanization process in the northern basin of the Mediterranean has taken place in recent years, following some specific modalities which endanger the historic model of the central concept upon which urbanistic reasoning is based. Far from attempting to build finalistic models, present urbanistic research should concentrate on the elaboration of vehicles of representation, knowledge and evaluation of potential resources, adopting techniques from other disciplines such as geomorphic cartography. The paper presents some conclusions drawn from the studies made in this sense within the Catalan context.

Key words: Urban industrial impact, urban development, soil.

RESUME - Le processus d'urbanisation du bassin nord de la Méditerranée a eu lieu au cours des dernières années, suivant des modalités spécifiques qui mettent en danger le modèle historique de concept central sur lequel se basait le raisonnement urbanistique. Au lieu d'essayer de construire des modèles finalistes, la recherche urbanistique actuelle doit être axée vers l'élaboration d'outils de représentation, de connaissance et d'évaluation des ressources potentielles, en adoptant des techniques propres à d'autres disciplines comme la cartographie géomorphique. L'exposé présente quelques conclusions des travaux réalisés dans ce sens, dans le cadre territorial catalan.

Mots-clés: Impact urbain industriel, développement urbain, sol.

Introduction

The occupation of agricultural and forest land for urban uses and buildings seems to be a constant in our civilization. For many years cities throughout the whole of the Mediterranean have been undergoing a process of urban growth that causes the progressive occupation of areas of considerable agricultural, forestal or simply ecological interest.

Maybe for this reason the occupation process is even more important. It is rather more than the transition from land without building permission to land with building permission. It cannot be reduced to a merely legal question.

Quantitatively speaking the occupation process is important. For example, in Barcelona between

1982 and 1989, the amount of agricultural land has diminished by more than 14,955 ha and forestal area by 6,717 ha. If the tendency continues at the present rate, by the year 2000, 30% of the agricultural land and 17% of the forestal area presently remaining will have been lost.

However it is not only the quantitative increase in urban land involved in the problem to be analyzed here. It is not just the awareness of this quantitative process, but rather the concrete forms and the specific paths that it has taken. The spatial structure of the process must be understood. Concerning this problem of the substitution of agricultural land and natural spaces by urban development, a continual and general process throughout the whole of a territory is not the same as a discontinuous process that affects land relatively faraway from the present urban centre.

The extended city: a new kind of human habitat

The history of metropolitan growth from the beginning of the century provides interesting information about the existence of different logics of urban growth, that depend on different political priorities and economic logics.

- i. The turn of the century was a period of thriving urban development. It was a period in which a great influx of rural population to the cities occurred, and a decisive growth of the urban population. In relation to the subject in hand, it was a period of great changes in the division of labour and integration of the market in the large cities, that greatly influenced the structure of urban growth.

It is worth highlighting two aspects of this period. In the first place the formation of an area of growth limited to the surroundings of the great cities and to the most immediate problems arising from them. It is the scope of the first public transport and mainly the tramway, that gives coherence to not much more extensive territorial structures than the previously autonomous traditional centres of population.

In the second place it is worth keeping in mind that in this period the questions that are raised are mainly of a shortage of good quality residential areas, a shortage of green spaces and facilities and of efficiently articulating the residential and industrial framework. The turn of century town planning hardly deals with any other questions. The process of transferring the rural population to the new industrial activities takes priority over all other questions.

- ii. In the thirties, and especially during the years following the second world war other questions began to be raised. In the reconversion of the productive processes that takes place during these years the development of the new communications and energy networks acquires a great importance. From these years onwards it is much easier to get to remote centres of population and to rural areas. The telephone and electricity allow links to be established between the urban centres situated in isolated rural networks. At the same time electrification is related to the hydraulics policy and also affects the territory from the perspective of the industrialisation and production processes.

It is during this period that the questions of decentralisation, the transfer of activities to the territory, and the oft-debated question of overcoming the territorial imbalances and the reactivation of the peripheral and underdeveloped areas are first raised. The projects for new towns, decentralised residential development areas and industrial estates are a consequence of this new raising of the problems of town planning.

The relations between the city and the territory that until now had not been considered in town and city planning, are beginning to acquire importance, but are raised exclusively from the point of view of development or underdevelopment. The natural environment, as it is conceived of today, is still not a concept or problem of town planning.

- iii. Recently the debates on ecology have come to the forefront. In our present day society nobody questions that maintaining the ecological balance is an important objective. This is due to the diffusion of the ecological culture and also to a new type of approach to town planning, that is superseding the focal points of attention of earlier periods.

The present situation of town planning is not directly focused any more on moving the rural population to the city, given that migratory movements now come from a different direction and that the rural zones can not be further depopulated. The migratory movements come from outside of the national boundaries. In many areas of the European Mediterranean the countryside is so depopulated as to make any further exodus to the cities impossible. The era of *postfordian* is characterised by the development of new modalities of production, consumption and territorial interrelations. The urban centres specialise in tertiary activities while the regional zones are definitively incorporated into the relations of production. Even though it be simply through the production of low value added manufactured articles, the peripheral areas are integrated into the production process. It is possible to talk about a new division of labour on an international scale that substitutes the *fordian* or *taylorist* divisions, that were so important for the town planning at the beginning of the century.

The relations and contradictions between activities peculiar to the urban system and the territory are heightened greatly on raising the question of this other form of urban growth. Applying this new territorial logic greatly increases the exploitation of the territory. The diffusion of the environmental conservationist ideas is not just a question of new cultural models, but the consequence of the new problems arising from the growth and organisation of the territory.

Modalities in urban development and typological approach

Many of the modalities of urban development and construction that characterise the present day metropolitan areas and many of the important Mediterranean tourist conurbations reflect this new approach to town planning. The new commercial and business centres and technological parks, cut off from the urban centres, that, until recently were only a figment of the imagination of town planners or a simple transfer of american models to our territorial reality, are beginning to be built, and occupy key areas of the territory. It is a question of new areas of high quality urban development that are beginning to demonstrate that the old idea of the urban centre that structures a sector of the territory, so oft diffused in the models of territorial organisation, for example in the theories of central places of christaller, are now a part of history. The centre and the periphery, the city and the territory, do not mean the same now as before.

However what is occurring with some examples of high quality urban development is also a constant obsession of minor urban planning.

- i. This is the case of, for example, the roadside market stores that occupy strategically important unbuilt up areas. Many of these considerably sized commercial buildings, warehouses and facilities which can only be inserted into the traditional central urban areas with great difficulty, are built alongside certain easily accessible and heavily circulated roads. They give rise to urban configurations that are difficult to classify with the traditional typologies, and that have a very clear effect on the territorial dynamics.
- ii. This is the case of certain rows of industrial buildings also developed alongside stretches of road, and even next to old farm lanes, that cannot be included in the category of the industrial estates or as parts of the urban systems previously envisaged in the town development plans.
- iii. Many of the second home residential developments situated in places unsuitable for urban development, in isolated forestal areas, have precisely this same character of pieces of the whole of the *postfordian* territory cut off from the traditional centres.

- iv. The coastal conurbations are one of the exemplary cases of this new territory that grows out of the present day economic situation. A territory where the fragmentation and the differences come to the foreground and where the agglutinating forces that characterised the traditional *taylorist* conglomerations have lost in importance.
- v. The communications networks follow this same logic. The motorways, that started the process of interrelating the city and the territory in the fifties and sixties, are beginning to be complemented by networks laid out in all directions. The case of the catalan territory, that we have studied, is a key example of this evolution. The homogenous nature of the territory and the easy access to any place derives from this new configuration, that is completed by many other networks of communications and infrastructures.
- vi. The distribution of the central zones is changing. The role and the shape of the centres of the cities and old villages included within the territories of spread out development are changing at an ever increasing rate while new centres with a powerful dynamism that polarise the distribution and the way of understanding these territories are appearing.

All this growth has a direct implication in the distribution of the activities and central areas in the new metropolitan space. However it also affects very clearly the transformation of the landscape, understood in its classical aesthetic acceptation or in terms of quality and composition of the soil and ecology. The question of the transformation of the agricultural and natural territory that has greatly increased in our days, as observed at the beginning of this paper, is largely derived from the growing diffusion of these modalities of urban development. The question is no longer in the process of territorial extension, but rather in the separation of these modalities in all or any part of the territory.

Need for new juridical instruments

On the level of these forms of territorial implantation and growth, the traditional urban planning instruments are outmoded.

- i. The urban planning based on alignments and ordinances derives from the eighteenth and nineteenth century tradition where the sole object was to configurate a future city with wide and orderly laid out streets and avenues. After many years of putting into practice these alignments and ordinances this model continues in force and is applied in many cases of urban planning on a minor scale. In these cases the adaptation to the territory may not go beyond the adjustment of the alignments to the existing topography or the integration of the urban networks into the wider fabric of agricultural origin. Many of the residential and industrial developments referred to beforehand are timid adaptations of this kind, that logically, only partly solve the problem, and do not propose any solution to the essential question of the impact on the environment.
- ii. The urban planning laws of different countries call for the assignment of green spaces and facilities, that try to compensate the weight of excessive building. They are instruments that have their origin in the urban planning of the thirties, when an attempt was made to compensate the impact of intensive urban development through the simultaneous realisation of parks and gardens and spaces for community facilities. The objective of these assignments is to achieve a well balanced city and to solve the important contradictions and disfunctions that land speculation generates in the process of urban formation. i.e. they are instruments designed to solve the problem of the formation of cities that run into one another or those formed by housing estates and new towns that cover a considerable area.

When these instruments are related to the transformation process of the present day territory, where the new elements of urban development are implanted throughout the whole territory without distinction, and there is no process of formation of an ordered aggregative city, they lose a great part of their meaning. Then the normative regulating the percentage of obligatory assignment of green spaces and community facilities becomes merely quantitative without any

territorial logic. When they are realised in the territory (as opposed to the city) they are turned into marginal areas that do not carry out any kind of function. They are neither central parts of the new urban structure, nor do they carry out any function of territorial protection or of providing a solution to the impact produced by the urban development.

- iii. These kinds of instruments are the result of the socialdemocratic ideology of the thirties, that greatly influenced urban planning when it was begun to be applied between the thirties and the sixties. The instruments of assignment are more instruments of social justice than of urban transformation. They are elements of redistributing the burdens and benefits between the actors in the process of urban development and ignore many of the questions that intervene in the territorial transformation.

The Spanish legislation on the matter, and that of many other countries, influenced by western urbanistic thought of the first half of the century, are obsessively closed regarding the questions of assignment, reparcelling and territorial justice. It is only with great difficulty that they integrate really efficient concepts and parameters in the transformation process of the present day metropolitan areas and conurbations.

- iv. If more attention was paid to the different types of technical questions that intervene in the implantation of the elements of urban development in the territory, the efficiency of plan would be very different. Thus any new planning initiative ought to demonstrate the integration of the project into the agricultural network, its impact on the aquifers of the zone, its repercussions on the surrounding vegetation; just as it has to demonstrate that the access by road is possible, that it does not have an exaggerated density, that the type of building proposed can be well integrated into the existing network of streets, etc. Many of these technical questions refer to the structure and form of the land. If one wants to evaluate the repercussion of a new building development within the context of a rural fabric a complete parcellary of the area on a detailed scale is necessary. The geological cartography, of the aquifers or of the vegetation is also a help in calibrating the repercussions of the elements of the new development. The different thematic cartographies on the land are essential for evaluating the present day urban planning decisions. If the urban planning of earlier periods could be solved through the use of simple topographies with contour lines that allow the plans to be adjusted, the urbanism of the present day metropolitan and coastal conurbations may only be controlled through the use of cartographic instruments of this kind.

However, in order to better define the instruments needed it is necessary to examine thoroughly the idea of the "extended city", and to get to know better the mechanisms and logics through which this city is created and transformed. It is also necessary to be able to imagine possible transformations that improve the internal and relative efficiency of the new modalities of urban development defined in 2nd section. In this sense it would seem appropriate an investigation project focused on the intermediate scales, leaving to one side for the moment more global aspirations to concentrate on clearly defined, concrete problems. At the same time it would be necessary to keep on elaborating new metaphors that sustain the collective action of the different disciplines. The first logic of intervention described in the first section of this paper (i) was underpinned by the metaphor of regularity, while a great part of the work executed as explained in first section paragraph ii was directed to the idea of urban polarity, a metaphor which was in turn replaced by the concept of territorial balance. Today ecology has been established as the general metaphor. However it needs to be made explicit in the different fields in order to make it operative, especially in the field of the physical planning of the urbanised territories.

In this sense the concept of non developed land as a resource is basic, whether it is a question of outlying or peripheral land or the extended city or of interstitial land independent of their size. The aspiration to exclude this land from the market through urban planning regulations concerning protection are doomed to failure and it would be more advisable instead to be able to include them with all their value as a scarce resource and as positive parts of the system.

Towards a new interpretation of territory

Behind these previous demands there lies the objective of achieving a greater knowledge about both the structure and the form of the virgin Mediterranean spaces and the forms of urban development that have historically characterised this area.

Knowledge of the various kinds of configurations of fields, woods, moors, etc. is indispensable in order to be able to solve the technical problems of integrating the urban developments into the agricultural fabric, of lessening the effect in the ecological context of conservation of aquifers, etc.

This knowledge has spatial components that may be and have to be mapped.

Cartography has revolutionised the urbanistic morphology many times. We are referring, for example, to the geometrical cartography that allowed the layout of alignments to be technically specified in the eighteenth century, or the introduction of topography and the contour lines that had a decisive influence in the courses of roads in the nineteenth century, streets, straight or winding roads, or the schematic use cartography, that had a great effect on the planning of the first half of this century, etc. In the present day situation it is to use thematic cartography referring to the value and quality of the land that supports or surrounds the examples of urban development.

The type of metropolitan growth makes it completely necessary to evaluate the options available through a cartography that takes into account the qualities of the land. A cartography that must not be confused with the general cartographies that already exist in many countries today. For example, one thing is the geological plan, where the soil is classified into classes that only take into account its origin and constitution. Another thing are the cartographies designed to detect the factors that can have a potential effect on the urban development, or the factors of vulnerability and destabilisation of the systems.

Cartographies of the dynamics of transformation and processes under way. i.e., thematic maps on the qualities of the land, not in general, but specially designed for conditioning and evaluating the planning options. Maps that in some way are close to the geomorphological cartography, that includes the consideration of the territorial dynamics and the potential modification of the land.

Approach towards the transformation of agricultural and forestry systems by urban development

An objective that has directed our work is to define exactly the Theory of the Extended Systems in reality, specially focusing the attention on the analysis of the reciprocal influences in the new modalities of urban-building development and the physical and historical peculiarities of the territory.

Thus new urban development situations may be defined that include the considerations on the type of development, as well as on the natural environment affected. It is important that this classification preferably be centred upon the dynamics and superimposition of situations throughout time. For example the superimposition of the urban fabric over an agricultural network or a wood, or that of an industrial or residential housing estate on top of the alluvial plain of a river.

In the studies we have been able to make on the metropolitan area of Barcelona and the tourist conurbation of the Costa Brava we have been able to delimit a few of these kinds of situations.

- i. The occupation of the plains of alluvial sediments of the rivers of the "Vallès" (a region of the Metropolitan Area of Barcelona) by groups of industrial installations is a first example of this problem of these problems of the interrelation between urban development-environment.

The majority of the plains formed by quaternary soils near to the fluvial courses had been

dedicated to irrigation farming since many centuries ago. They are very flat lands with an abundant aquifer, easily irrigable and with a definite agricultural vocation.

They had hardly ever been occupied by settlements. Even the different agricultural buildings, very common in the catalan countryside, avoided them, being concentrated nearby, on the first sloping ground, where relatively extensive settlement systems made up of a road and a group of centres of population have been formed.

Recently the scarcity of flat land has motivated the beginning of the occupation of these spaces by industrial installations. At first sight they seem to be industrial estates. However if one carefully analyses them it may be seen that they do not have the spatial coherence that characterises this particular kind of development. The road system does not conform a network. They do not have communal services. Access to them is often very precarious. On the other hand they rely on the old network of access lanes to the fields and form a kind of parallel system of installations to the old settlement, situated at the lowest point of the irrigation land. They grow in interrelated parcels of land, progressively occupying the irrigable land. To sum up, a process of disorganised occupation of the irrigable land is created, only conditioned by the parcellary logic of the old agricultural tracks and the topographic features. The effects of the process on the ever increasing destruction of the rural fabrics and on the contamination of the aquifers are important. They are not controlled by any kind of attention to the system of urbanisation under development, because the legislation only pays attention to the distribution of the areas built and to the generic assignment of terrains that serve no purpose.

- ii. Sometimes this very same logic of occupation of agricultural land occurs in the case of the residential areas.

For example, the joining of three centres of population that historically had been born on an agricultural plain, is carried out by adding piece by piece housing developments to the old agricultural network of lanes and parcels of land. In this way the step from going from a system of three separate centres of population to a single unit is being made without paying any attention to the unitary nature of the whole, and neither to the rural fabric, that degrades at a vertiginous rate.

The formation of the new network is only conditioned by the geometry of the old agricultural parcels and the size of the new rows of residential houses. There is no control of the process of transformation as a whole.

- iii. A very different type of transformation is the occupation of forests and abandoned agricultural clearings in the woods, by parcels of weekend home developments.

In this case the guiding line in the transformation process is based on the old lanes that run along the line of the ridge of the gentle relief lines. Through these lanes a web of residential estates is woven, grafted, with more or less fortune, onto the mountainside.

The extension of these estates is abruptly ended when the gentle relief is broken by courses of small rivers or streams, where the land degradation process is amplified, originated through this system of growth.

- iv. In the urban tourist conurbation of the Costa Brava the transformation process taking place around the roads is important. This case involves the construction of new service centres, generally commercial buildings, restaurants, warehouses, etc. They are relatively larger constructions than those of the nearby traditional urban centres. That is to say, a type of growth that can hardly be assimilated in the original urban centres, of a characteristic use. These new constructions represent one of the most interesting aspects of the renovation of the traditional tourist use. They are important to such a point that one of the most thriving urban centres of the whole conurbation was originated through a process of this kind.

Apart from the specific interest of the process, it is necessary to examine how they affect the

transformation of the territory as a whole. It is here that one realises that the form they take and the resulting problems do not only depend on the size of the new buildings, or on the accessibility of the roads where they are situated, but also on the form of the old rural fabric and on the morphology and use of this territory. For example, many times they only take an indirect advantage of the accessibility afforded by the road and are situated side by side on the old lanes or stretches of obsolete roads. In this way it becomes to be a sort of process of superimposition of networks, one on top of the other, that widens the space being transformed and affects a much wider strip of land. The process of destruction of the agricultural space is not just circumscribed to the immediate surround of the road, but also affects a much wider area.

It is also worth noting in this case, that the affect of the traditional urbanistic instruments is almost null. It is not possible to develop any kind of well constructed industrial estate, the obligatory assignments of land are meaningless, and the building standards can only contribute to shape the building, but do not affect the global process at all. At the same time the conservation of the rural fabric, of the land or of the aquifers, etc., cannot be guaranteed.

- v. We can find a final example in the surrounds of the roads of the industrial areas, where a pattern of growth similar to that previously described occurs, but adapted to the industrial use and to the type of buildings in which it takes place. An example in the outskirts of Granollers gives a very clear example of the structure of the resulting formations.

It must be noted that continuous lines are formed where the buildings and the roads are laid out in a herring bone fashion, occupying much more ground than would be strictly necessary and gives rise to a structure similar to the previous one but different in its use, shape and affects on the adjacent territory. It is easy to understand that through these territorial configurations it is almost impossible to purify the residual water and to protect the surrounding land.

Conclusions: Town planning problems as opposed to town planning models. Towards an urbanistic renovation of the territory

With all these detailed examples that we have just taken into consideration one can begin to understand the meaning of the transition from the Urban Planning of Models, Schemes and Ideas of the city to the urban planning that is defined as a Problem or a set of problems to be solved. Among these, the relation between urban development and the environment has a primary role to play.

The urban planning of models is conceived with a closed logic. All of it is thought of in terms of the materialisation of a previously defined concept of a city. The instruments of physical arrangement or of social and economic actuation are only thought of as ways or stages that lead to the progressive materialisation of the original idea or scheme. An idea on the other hand, situated in the long term plans and totally separated from the day to day matters and the problems of territorial conservation, that are only indirectly taken into consideration in this kind of urban planning.

However if one conceives Urban planning as a set of problems everything becomes much more open. Then it is easy to interrelate specific questions of the urban development, the definition of building typologies, uses, blocks of buildings and urban spaces in general, with the effect and conservation of the unbuilt areas. The problems to be considered may be many and varied. They are not derived from any pre-fixed general idea or scheme that pre-determines many solutions and does not allow the widening of the conceptual field being proposed here.

It is here that one may situate the proposal to introduce thematic cartographies on the vulnerability of the terrains, fluvial and coastal areas and effects in the construction of the urban planning decisions. It is an instrument that does not cover the whole range of urbanistic interventions but it may be of great aid in decision taking.

It is obvious that this instrument of cartographical information does not exhaust the possibilities of

the whole of the method that we are proposing here. It is too early yet to talk about the importance of the thematic cartographies, and of the possibility of superimposing and comparing information and questions that pose problems of diverse origins, but the potential of the new methodological orientation is not just limited to this. The problems of integrating the new forms of urban development dispersed in the environment may not be automatically solved by means of a simple instrument of information.

The value of these new instruments, that go way beyond the old topographical cartographies, is to introduce broader and more complex bases for reasoning and above all to determine new settings where the really essential process of decision taking is based. They are not instruments conceived to give closed solutions, based on deductive chains, in the application of which the rationalist method was enough. They are instruments that may allow many of the polemical and often contradictory questions, that are normally raised in urbanistic processes, to be justified and solved. They are not so much instruments for providing prefabricated solutions, but rather instruments that allow decisions to be taken on a much sounder basis.

One of these questions is for example is that of carrying the water from the river Ebro to the Metropolitan Area of Barcelona. The real question being raised here is that of the industrial and population growth of the Barcelona conurbation versus the development of the agricultural areas of the Ebro basin. It is difficult to think that a question of this magnitude may be resolved by a simple yes or no. It is surely a very delicate question that has many nuances. The transfer may on a large, medium or small scale etc. It may affect the future of different types of agricultural areas. It may cause an important regression of the cultivation of the River Delta, or make it impossible to irrigate potentially irrigable land, etc. At the same time it may give rise to an important industrial growth or it may be limited to a simple policy of containment, continuity and substitution of existing industrial uses. As a whole, the metropolitan area needs an extensive economic growth, or on the contrary an increase in quality based on the substitution of the existing obsolete activities.

It is in making a decision when having to choose from several alternatives that these basic informative instruments have a role to play.

They may also be applied in problems of lesser importance, as in for example, the case the decision to build a refuse tip, a sewage plant, or in the multiple cases of industrial or residential emplacements such as those illustrated further on.

In all these cases the information cartography allows a very clear setting for decision taking to be established and with many more arguments than with the old instruments.

This enables a new type of intermediate planning figures to be employed, close to the sphere of reasoning that have been previously explained where not everything has to be reduced to a question of black or white, or of yes or no, as happened in the old Land Occupation Plans, General Development Plans or the like, where everything is completely closed and compartmentalised without flexibility and the possibility of evaluating alternatives.

Following this line of thought it is also clear to see that the policy of land conservation and of agricultural areas and natural spaces in general, may not be based on the simple delimitation of the conservation areas or of nature reserves. These spaces are almost always delimited by the application of criteria of a historical type (valuation of the past), of scientific-naturalistic interest (value of the land and vegetation in the schemes of scientific reasoning) or, simply, aesthetic reasons (landscape and form in general). However, their integration into the structures and dynamics of metropolitan transformation is not really taken into account, and maybe should oblige more attention to be paid to other spaces of not such interest but that occupy a strategic position within the whole and that do not need so much an integral protection as the limitation of some of the parasitic processes under way.

To finalise, it is interesting to keep in mind that, in applying this methodology, the spatial factors and the economic and social factors do not relate to each other through the traditional schemes. If in the past, the territory was seen purely as an abstract area in which economic activities had to be optimised with no regard for the intrinsic value of the land, today territory and economy are related in application of the valuation of the land and the places as resources. The land is valued more as a resource, often

irretrievable, for its natural quality or for its position, than as a part of a model to be optimised. The planning is not just orientated towards the search for external economies, or of the integration of the pieces in the system, but also valuing the intrinsic qualities of the lands and soils. These qualities are inextricably linked to the conservation of the different types of natural systems and environments similar to those previously analyzed.

If material value of the land, situation and extension are important, the same can be said of the type social valuation made of them. If in earlier urban planning the social valuation was centred on the qualities of the model of urban development chosen, today the valuation does not refer to any model. It is not at all closed. Even though it is important the unique character that is given to the diverse types of land, identifying them as resources does not mean giving them a single inalterable valuation. The concept of resource is open to various appraisals, that may be even contradictory. This makes it even more possible to develop thematic cartographies as a basis for planning. The question is more in the contrast between the different characters of resource that are given to the different types of land and areas of the territory.

Another essential question appears here. The urban planning that is developed through this new conceptual order is not based on the delimitation of zones (the traditional zonification), but in the signalling of different types of limits of extension of the areas, or of boundaries that the growth must not exceed. The extension of the urban systems or, on the contrary, conservation of the land and of all the resources materialised in the land bring us more to the signalling of boundary lines than to the assignation of present and potential uses on which the traditional urban planning has been based. Limits, of course, that do not imply the reintroduction of dilemmas between black or white, or yes or no, but rather intermediate lines based on the application of the diverse criteria of valuation.

In the Mediterranean system, an area with similar environmental factors, historical forms of urban development and present day processes of growth, it should be possible to develop an interesting study on these types of questions. Such a study could end up revolutionising the legislation and the urbanistic methodologies in use.

The dynamic factors, of soil composition, of vegetation or of land degradation, have common characteristics that allow a similar treatment. It would not be impossible to elaborate a study that determines the different situations and dynamics of the natural environment that affect the urbanistic questions. Starting from this study it may be possible to arrive to general classification and to a definition of a first criteria of cartography. Criteria and classifications that the various countries could develop and detail, adapting them to their own particular respective situations.

At the same time, if one takes into account that the forms of traditional urban development or of stretches of rural and agricultural fabrics, while not being homogenous do have an important degree of similarity and, that, the present day processes of growth of the metropolitan areas and coastal conurbations have a common character, it is easy to reach conclusions about the possible interrelation between the urban and rural environments in the Mediterranean basin.

A study on this material generalised to the whole of the Mediterranean area could be very interesting and revolutionise the methodology and the general performance of urban planning.