

# EVALUATION IN ENVIRONMENTAL CONSERVATION PLANNING

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## 1. Introduction

It has already been pointed out that the welfare state crisis made essential to find a new public/private relationship in the framework of new endogenous development strategies, in order to cope with the conflicts among different subjects, interests, objectives and values.

This study concerns also the field of conservation and management of environmental/cultural resources that have to be considered in a development-oriented perspective.

Today successful local economics are those able to increase local identity, regional specificities, the particular image of the place, the quality and, therefore, the attractiveness of a site.

But it is necessary, above all, that increasing of these values does not mean just raising of real estate values. Otherwise, it would be in conflict with the general interest of an area. To integrate valorization with economic, cultural and social dynamics is the goal to be achieved. The problem is to start a virtuous circle among economics, ecology and justice. The relationship among these three dimensions has been destroyed by quantitative development. The idea of «sustainable development» restores this kind of integration.

The above concerns public institutions, private enterprises and the community of a region at the same time. Capacity to program and control valorization in its multiple and different (economic/financial, cultural and social) implications is becoming a central issue.

This means, above all, a correct resources evaluation, if possible in economic terms. But economic evaluation has to be always integrated with multicriteria evaluation. This is possible using suitable evaluation procedures to compare alternative choices of valorization and management.

Multicriteria analysis should be integrated in the perspective of considering the multiplicity of subjects interested in decision-making, using more and more a suitable software to support public institutions decision-taking process. In this way, it is possible to contribute in reducing conflicts among interests, goals and values - «intrinsic» in valorization and in development - by means of creating new alternatives be-

### Abstract

**The capacity to program and control valorization in its multiple and different (economic/financial, cultural and social) implications has become a central issue in the conservation and management of environmental/cultural resources.**

**To integrate valorization with economic and social dynamics is the goal to be achieved. The relationship between economics, ecology and justice has been destroyed by quantitative development. The idea of «sustainable development» restores this kind of integration.**

**Using economic-monetary and non-monetary evaluation procedures, the integration of multicriteria-multigroups evaluation techniques is important especially in the management-implementation, in order to solve conflicts intrinsic in the conservation activity between different subjects.**

**Multicriteria evaluation procedures should be introduced in the public sector reorganization to support and to make more efficient choices.**

### Résumé

**La capacité de programmer et contrôler la mise en valeur et ses multiples implications (économiques/financières, culturelles et sociales) est devenue un problème central dans la conservation et la gestion des ressources environnementales/culturelles.**

**L'objectif à poursuivre est l'intégration de la mise en valeur avec la dynamique économique, culturelle et sociale. La relation entre l'économie, l'écologie et la justice a été détruite par un développement quantitatif. Le concept de «développement durable» rétablit ce type d'intégration.**

**A travers les procédures économique-monnaies et non-monnaies, l'intégration des techniques multicritères et multi-groupes est importante surtout dans la gestion - réalisation afin de résoudre les conflits intrinsèques dans l'activité de conservation entre les différents sujets.**

**Les procédures d'évaluation multi-critères devraient être introduites dans la réorganisation du secteur public pour favoriser et faire des choix plus efficaces.**

sides those initially «given» is possible. These new alternatives result from a process of active participation of the different groups concerned.

## 2. Valorization and market

The more and more heavy exploitation of environmental and natural resources by different economic subjects (industrial enterprises, real estate promoters, construction companies, etc.) is a serious threat to the sustainability of development. The present awareness of the above makes it possible to use environmental assets as part of proper strategies of a development that integrate economics with ecology and justice. There is, on the other hand, the risk that environmental assets could become the object of a merely real estate *valorization* process, i.e. the marketable object of a commercial system of exchange. This will end to erode - because of bad or over use - the very value of environmental assets in favour of few people (owners, real estate promoters, direct users, etc.) excluding many others. The state of public debt, a deficit economy, etc. make likely that availability of public financial resources will be more and more scarce.

In this perspective the recourse to private capitals, and therefore to the market, seems extremely necessary. We can talk of

a «restored» importance of the market. Privatization of environmental resources would seem a compulsory way to their conservation. But does market restored importance mean acknowledgement of the free play of real estate rent?

Undoubtedly, market is a tool able to promote new activities, to demand employment, to produce wealth. But it is also able to destroy, i.e. damage, resources and values.

There is a «valorization» of environmental resources (e.g. coastal areas) that is solved by the market in term of mere real estate surplus value, i.e. acknowledgement of many rents. These rents concern only the owner or the promoter, leaving out several other subjects as indirect, direct, potential and future users, that is anyone who is not a direct user.

A valorization in these terms - a privatization/appropriation excluding a co-fruition with other subjects - turns to threaten more than to protect the resources in question in the medium-long term.

On the other hand, a restored importance of the market that is indifferent to the issue of environmental protection would make economic recovery very weak. It is sufficient to remember that market produces externalities, that are costs for third parties as pollution, congestion, overuse, deterioration and how much heavy these externalities are over the land.

The behaviour of the enterprise worried

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only about short term costs/revenues rate caused the present ecological and social deficit - especially for future generations. A «good economy» and therefore a «good society» cannot have their foundations in this kind of behaviour.

Externalities are the expression of free market inability to exploit resources in a sustainable way. They are a real threat to the conservation of the assets in question because they involve wastes, as well as a damage in the shape of out of scale transformations of the environment, etc.

The idea of sustainable development tends to be in conflict rather than consistent with free market. As a matter of fact, free market enhances exchange values that are only some among the (possible) economic values of a rare and irreproducible resource <sup>(1)</sup>. This at the expense of other values as social use value and independent of use value, as well as complex social value <sup>(2)</sup>.

The realization of «sustainable development» involves some constraints in the free exploitation of resources and therefore limits to private ownership, to enterprises management, to real estate promoters activities, etc.

A valorization played in terms of mere exchange value can impoverish a resource, can erode its independent of use value, and its quality and beauty, as well as its social and cultural value in the medium-long term. It can destroy the resource in question in the long term.

Real estate surplus value, in brief, can have as cost cultural and social minus value, if it is not realized correctly. A careful ability in managing the conflict - particular interest vs. general interest - produced by the restored importance of the market is necessary.

This ability, on its turn, depends on the suitable evaluation of every values at stake and on the consequent ability to match them in a balanced way. This means that it depends on the suitable evaluation of resources and on conservation/value-increasing/development alternatives; as well as on enterprise ability in contributing to the «good life» of everybody.

But it also depends on consensus gathered on the idea of sustainable development as the general interest of a region.

### 3. Environmental resources evaluation

Evaluation is required to improve communication process and, therefore, decision process. Evaluation provides particular information useful, on one hand, to codetermine choices because of their correlation with an intrinsic dimension of human nature, i.e. decision taking. On the other hand, it is linked to another equally intrinsic aspect of human nature, i.e. to communicate, to participate, to live in relationship with other people <sup>(3)</sup>.

Evaluation is connected with two kinds of

rationality: «instrumental rationality» that correlates ends with means, and «communication rationality».

The necessity to improve information content of environmental evaluation rises from these two perspectives, as well as from the acknowledgement that too often environmental evaluation has not been successful in transforming values in actions, that is in avoiding irreversible damages to the environment.

The judgement on a resource attractiveness - i.e. its ability to satisfy needs, its relevance, its *value* - depends on the perception of the resource attributes by different social groups (undoubtedly influenced by institutional or cultural conditions).

When environmental values are compared to other values and interests on the institutional level, where decision taking occurs in democracy, it happens that usually these values do not become «actions». That is they are losing in the conflict with other values and interest because their information content is often too hazy, imprecise, slippery or ambiguous.

The result is that it is impossible to avoid less or more irreversible damages to environmental resources, e.g. as a consequence of the localization or transformation of a production activity, as well as of a merely speculative real estate valorization.

To make environmental values «operational» to improve/increase evaluation information content is required, in order to «assimilate» these values in public/private decisions so that they will not be mere statements split from practical activity.

Environmental evaluation should allow to supply arguments by means of which to communicate the «reasons» of protection/improving environmental values vs. its required costs, this means to state that some ends (conservation, protection, etc.) have got a specific «value».

To cope with this communication problem in order to codetermine decision taking correctly, one of the best way is through environmental evaluation.

Evaluation using monetary scale focuses on economic strength of a resource, on its capacity to produce flows of benefits even at an economic level, on its being useful. A damaged resource is also an economic loss because of the loss of some benefits. The goal of environmental resource economic evaluation is to communicate qualitative values, - that is «in itself» value of a resource -, with reference to its use value, i.e. its «instrumental» value.

In this way, environmental values are put on the same plane with the economic ones, that is with the interests that heavily influence public and private choices.

Therefore, environmental evaluation can «enter» into the decision process, can codetermine the priority choices, and localizations, etc. <sup>(4)</sup>.

The theory of total economic value of resources, briefly treated in next sections,

expresses this effort of using «lower» order (economic) values to protect «upper» order (cultural, environmental, ecological) values. This aspect of evaluation is connected to what has been defined before the instrumental rationality in the means-ends relation.

But it is linked also to communication rationality.

It is possible to establish a communication/dialogic process among ecologists and politicians, among economic subjects and common people, among contractors and workers <sup>(5)</sup>, through which it is possible to make a social construction of sense in a rational way.

Environmental resources values can become the heritage not only of an élite but of everybody: something real and not an abstract concept, because it is not only «good» and «just», but also «useful».

In this perspective, evaluation contributes to give operational contents to the common interest. In particular, it serves to give actual and operational content to the idea of sustainable development of a region, that involves not only economic values but also environmental, justice and equity values. Without these evaluations, environmental, ethical and distributive values could not compare themselves with economic efficiency and utility values. This means that they would be only abstractly present in the idea of a «common good» of a region.

The idea of sustainable development as a goal - or rather as the general interest of a region - that is often too hazy and imprecise, becomes operational through the above evaluation.

If evaluation is convincing, it can start a participation process among the multiple social parties and the public institutions. This non-bureaucratic participation is a learning process, i.e. an education process to decision-taking.

In the participation every social party can compare itself with the others, it can express its values but at the same time it learns other values. The result of such a participation process is the development of a different and more general viewpoint, because some new values have been added, other values have been replaced and the priority ranking is changed. In brief, the community ends expressing economic, ecological and social sustainability have been chosen in a rational way.

The above enables us to conclude that

<sup>(1)</sup> Blowers A. (ed.), *Planning for a Sustainable Environment*, London, 1993.

<sup>(2)</sup> Fusco Girard L., «The Complex Social Value of Architectural Heritage» *Icomos Information*, n. 1, 1986.

<sup>(3)</sup> Boulding K. E., *Value Concepts and Justifications*, 1988.

<sup>(4)</sup> Fusco Girard L., «Economic Theory and Valuation of Cultural Heritage», *Restaurio* nn. 65/67, 1983.

<sup>(5)</sup> van Gigch J., J. Roswall, B. Lagerovist, «Setting a Strategic Framework fo Conservation», Symposium on «Standards for Preservation and Rehabilitation», Fort Worth, October 1993.

there are two dimensions of evaluation. Evaluation is an activity that correlates ends with means in a rational way. But it is also a critical activity, that makes ones more aware and, then, more responsible in the choice of the strategic ends (of a community, of an area, of a region, etc.) Evaluation, communication and participation are activities heavily connected each other. How would be possible to evaluate planning or management proposals without referring to the goals expressing the general interest? On the other hand, through evaluation different ways to cope with the same problem are compared, and the most attractive, as a whole, solution or project is identified, that is the solution that better allows to achieve the general interest choosing not only among «given» hypotheses but also developing new ones. Because the alternative that produces more good for everyone is identified through evaluation, it is possible to affirm that evaluation is an essential tool to promote the ethical dimension in development. The ethical dimension is intrinsic to the idea of sustainable development.

#### 4. The different economic values of environmental/cultural resources

It is very important to remember the existence of several points of view from which it is possible to get the economic dimension of environmental resources.

For the (possible) owner only the market value and its increase is important.

The promoter is interested in maximizing the difference between market value and costs, that is increasing at the maximum level the producer's rent.

We cannot forget the point of view of direct consumer, concerned himself in the use value and then aiming to maximize his income (consumer's rent, that is the difference between use value and market value).

The user never considers the market value but only the use value and its maximization.

Finally, the point of view of the whole community represents the amount of the social use value for all different kind of users in time and space, and also for those willing to pay without to have the use of the assets (independent of use value). We say «total economic value».

Localization, irreproducibility, rarity, unicity, and peculiarity of «pure» goods, are important to understand the intensity of these different and co-existent values and their mutual combination.

The (Vet) total economic value theory has been studied recently to translate environ-

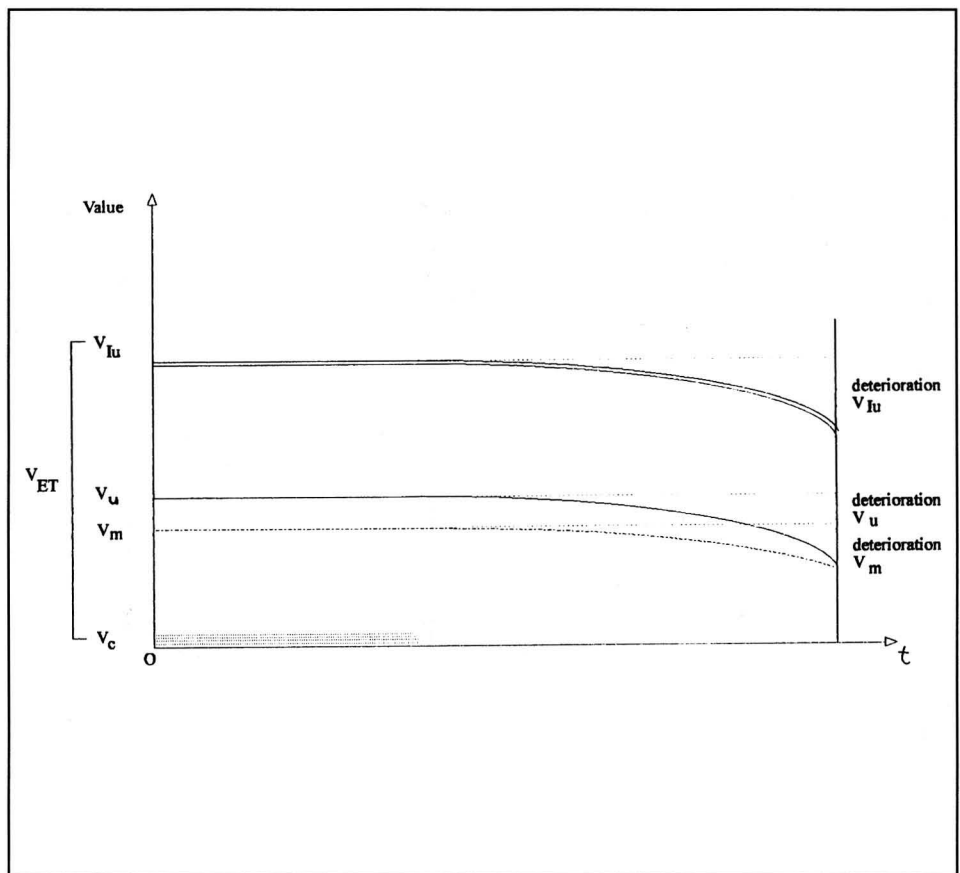


Figure 1 - VET trend in time.

mental values in money. Its equation is the following <sup>(6)</sup>:

$$V_{et} = V_{use} + V_{ind\ use} = V_{use\ direct\ user} + V_{use\ potential\ user} + V_{use\ future\ user} + V_{ind\ use}$$

In time the relation between these different values changes, due to the resource context and to the activities aiming to contrast its deterioration.

In **figure 1** it is possible to see values trend in time and their possible combination.

It's absolutely important to consider these economic values in the process of privatization/valorization.

The public subjects should be interested in it.

#### 5. Evaluation in the strategies for public/private conflict resolution

An economic surplus value, with a cultural surplus value and a social surplus value, might be obtained from an environmental resources valorization which is coherent with sustainable development idea.

First of all, we should be able to identify the best relation among aforesaid different economic (market, use, social use, independent of use and total) value.

For example, if a valorization alternative improves producer's rent while reduces

consumer's one, it will also reduce the social use value and the independent of use value.

It will mean the decrease of the assets total value (see **figure 2**).

The opportunity cost of a valorization that appeals only to the market is the loss of that today still more demanded value, through which it is possible to connote and identify a land, and to define its ownership.

This is the independent of use value.

A merely real estate valorization might not favour the endogenous development of a land, because in the development we are inclined to valorize especially local resources.

On the other hand, if a valorization only increases use value and independent of use value and reduces producers rent to its lowest level, it will have to rely only on public capital, today still more poor.

In the lack of it, this valorization will remain merely theory and not «action».

An intermediate solution will be possible if producer's rent grows wider up to a certain level and not over, if necessary also by public dues carefully calibrated to activate a requalification/conservation process.

It is absolutely important to seek in any case within this two fringe bounds the most suitable combination between public and private interest.

We have to found this public/private relationship in order that both public and

<sup>(6)</sup> Pearce D., A. Markandya, E. Barbier, *Blueprint for a Green Economy*, London, 1989.

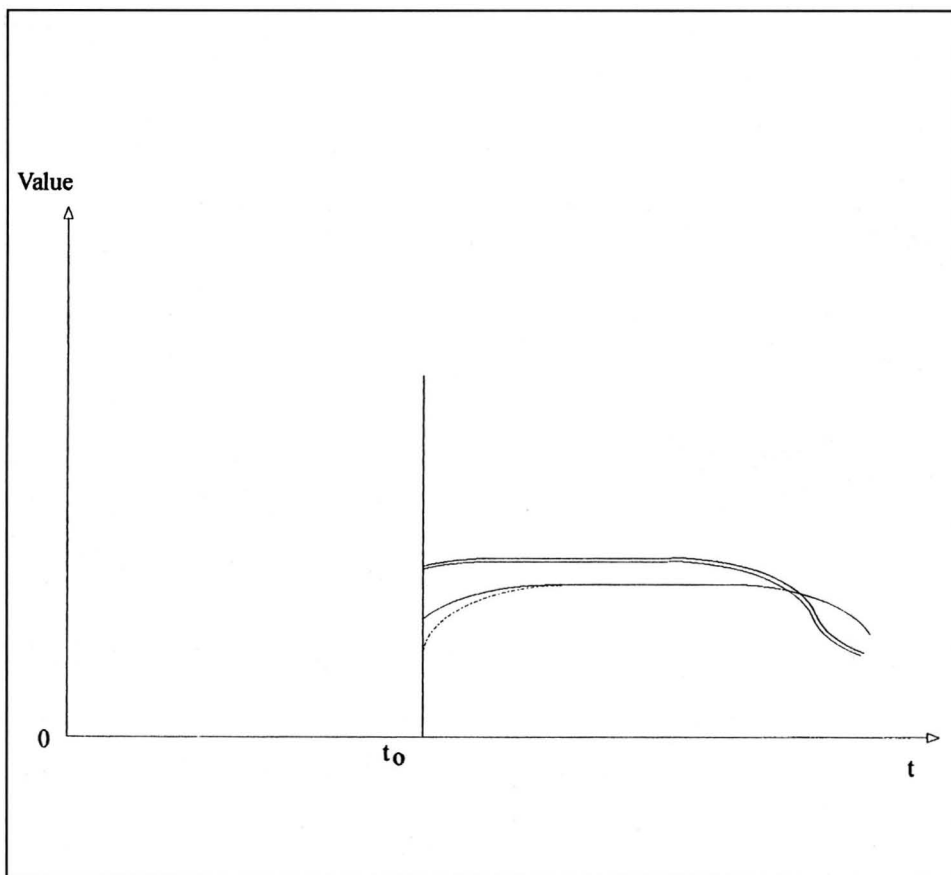


Figure 2 - Relationship among different economic values.

private individuals may be «winner»: it means activating a game with positive amount between conflictual interests.

Figure 3 shows the above.

The solution  $A_1$  achieved in terms of mere real estate valorization, allows maximum private (of the producer) income, but a negative social utility. For instance, this happens when a heavy intervention is implemented in a certain area, and the consequent benefits are not in favour of the area itself and of the local community.

If we have not public capital and we do not know how to overcome the conflict produced, solution  $A_2$  will not be possible, because it involves high opportunity costs for private.

With solution I we could solve the conflict between public and private interests intrinsically. This is not possible.

On the other hand, solution B shows the existence of a last threshold for both public and private parties. These are minimum negotiable conditions (7).

Therefore in the area dashed in figure 3 we can find solutions.

As much numerous will be defined alternatives and as much bigger the possibility to get closer to solution I, as stronger is the participation process.

Evaluation of different valorization alternatives is essential, because not only allows to compare «given» proposals, but especially stimulates to produce new solutions. These will be more satisfying in reducing

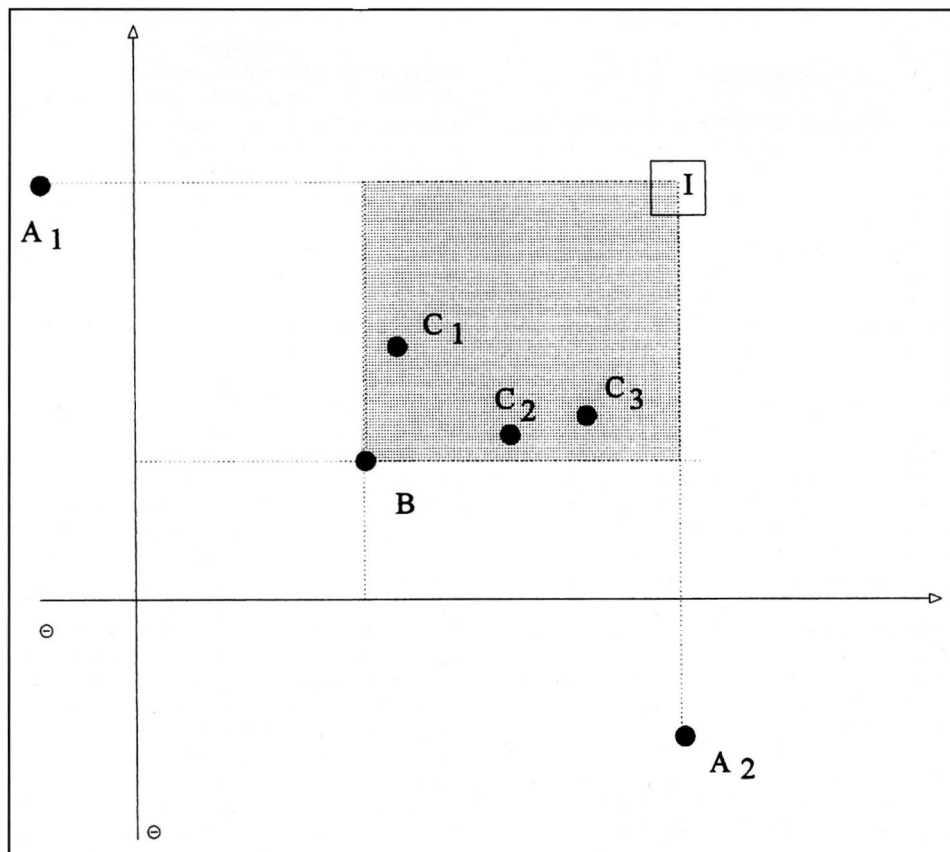


Figure 3 - Combinations between public and private interest for overcoming the conflict

conflicts among interests, goals and values and to approach the configuration I, where every individual realizes he might achieve maximum benefits, consistent with maximization of other individuals benefits. That is the solution closest to the one better reflecting general interest.

## 6. Multicriteria evaluation in conflict solving

Multicriteria approach is necessary in analysis and solving of conflicts because it concurs to include both tangible and intangible factors. In fact, in conflicts frame not only economic elements but also extra economic ones intercross: cultural, symbolic (and perhaps also irrational) elements. It is absolutely important to take these elements into consideration in order to break parties inflexibility and to approach solution I.

Multicriteria/multigroups evaluation methods allow to create a more common reference model to start with, including new (symbolic, cultural, etc.) dimensions to evaluate original hypotheses (8). This means partial modifica-

(7) Raiffa H., *The Art and Science of Negotiation*, 1985.  
 (8) Nijkamp P., *Theory and Application of Environmental Economics*, Amsterdam, 1977; Nijkamp P., *Environmental Policy Analysis*, 1980; Nijkamp P., P. Rietveld, H. Voogd, *Multicriteria Evaluation in Physical Planning*, 1990.

tions approaching more and more to the global best solution.

Through the application of multicriteria/multigroups evaluation methods, multiple parties (private individuals, firms, building promoters, owners, public subjects, etc.) identify basic values and objectives, distinguishing them from less important and marginal ones; and also they activate a communication dialogic process to identify a more global advantageous solution.

Multiple individuals are involved in conflict between conservation and development of environmental resources. First of all there are environmental movements and several public institutions that should guarantee environmental/landscape values protection. They aim to achieve public interest.

Subjects interested in private utility produced by land transformations are promoters.

Usually the achievement of the global utility of the first group occurs at the expenses of the second group utility.

For instance, building promoters utility (in monetary terms) increases extending areas at commercial/touristic destination within and outward environmental assets. Then, the groups A and B have utility functions with inverse course, in the sense that maximum for one means minimum for the other one utility (losses for A are benefits for B).

If the weight assigned to different functions is the same, equivalent convenience solutions for A and B will be those in which their renunciations are distributed in essentially homogeneous way (see **figure 4**).

Multicriteria/multigroups quanti-qualitative evaluation methods, getting the complex value of every alternative, are a useful tool in the negotiation between parties in conflict to achieve admissible solutions overcoming the logic of the zero sum game <sup>(9)</sup>.

Little by little, enclosing other objectives/values these methods do not consider only evaluations using monetary scales and build winning strategies for every group involved: strategies for which improvement for A is consistent with improvement for B.

There are several multicriteria evaluation methods to support public and private decisions involving multiple individuals <sup>(10)</sup>.

Some are more suitable for management of a lot of alternatives with very few criteria. Some allow the opposite. Other

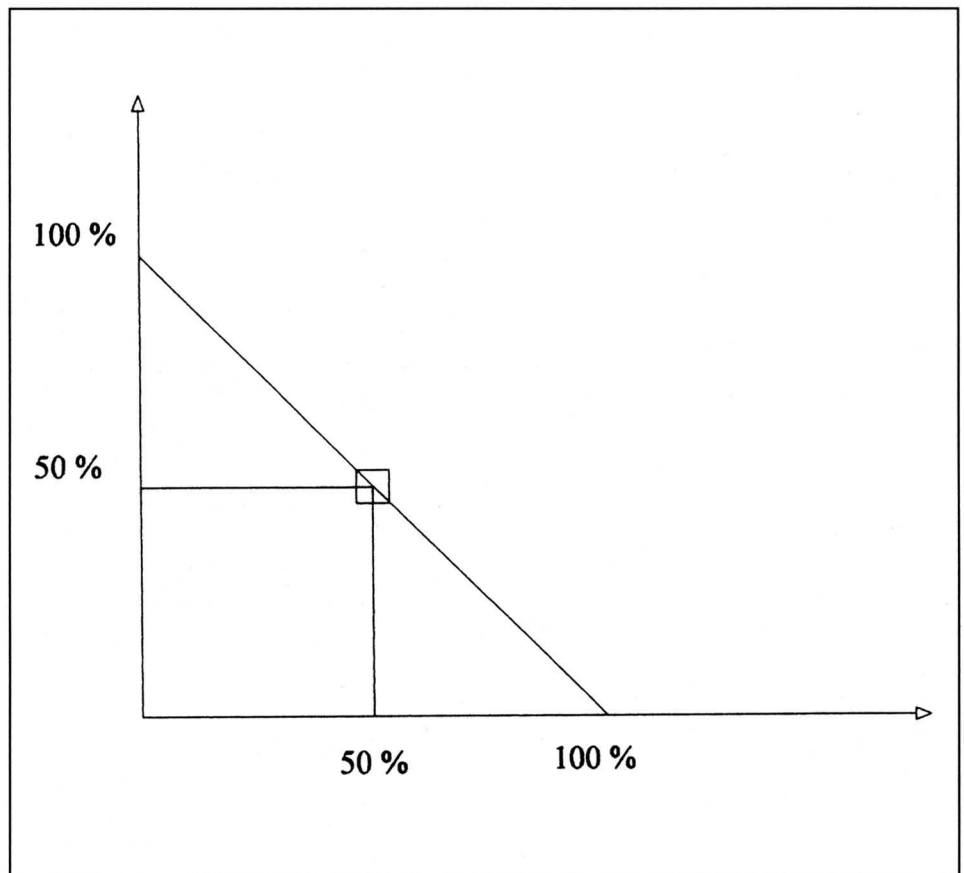


Figure 4 - Example: weight assigned to different functions is the same for A and B.

ones present a graphic description to visualize in different combination criteria, alternatives and priority and are useable with video-graphic simulations of environmental alternate transformations. In other methods fuzzy approach has been introduced to define both objectives and constraints.

These evaluation methods differ from current ones because there is not only a subject who takes decisions, but a whole of social and institutional subjects who interact, each one with their (often conflicting) objectives, with specific priorities and peculiar negotiable powers. For instance, utilization and valorization proposals for the same environmental assets might be different for local, regional, national government, labour word and entrepreneur sectors, etc. All this arouses conflicts that can restrain or delay elaboration and implementation of conservation strategies seriously.

Mediation between different institutions and management of conflict may be possible by means of consistent evaluation methods. In fact, the conflict may be reduced progressively working out new solutions, till an acceptable level; that is till when the consensus and cooperation will replace the conflict.

Therefore, evaluation methods are a tool to achieve ethical dimension intrinsic in sustainable development idea.

## Conclusions

Valorization of environmental resources in the light of ecological, economic and social sustainability implies careful evaluation to define basic or strategic objectives to put into operative terms sustainable development idea of an area or a community <sup>(11)</sup>.

In this stage the evaluation is an aspect of a dialogic/communicative rationality.

Evaluations have a central role in improvement of communicative process and in the incorporation of qualitative values protection in general objectives of a community. Furthermore, evaluation is necessary to identify choices to achieve fixed goals effectively.

That is a technical dimension of evaluation.

Using economic-monetary and not-monetary evaluation procedures the integration of multicriteria/multigroups evaluation techniques is important, especially in the management-implementation, in order to solve conflicts intrinsic in the conservation activity between different subjects <sup>(12)</sup>.

Multicriteria evaluation procedures should be introduced in the public sector reorganization to support and to make more efficient choices.

Environmental policy sector, because of its complexity, seems the most suitable one in the perspective of sustainability. ●

<sup>(9)</sup> Zeleny M., *Multiple Criteria Decision Making*, New York, 1982. Janssen R., *Multiojective decision Support for Environmental Problems*, 1992.

<sup>(10)</sup> Janssen R., *op. cit.*

<sup>(11)</sup> Fusco Girard L. (ed.), *Estimo ed economia ambientale: le nuove frontiere nel campo della valutazione*, Milano, 1993.

<sup>(12)</sup> Fusco Girard L., *Risorse architettoniche e culturali: valutazioni e strategie di conservazione*, Milano, 1992.