Equalization in the new Town Plan for Catania
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The present work illustrates the method set up to ensure the application of the equalization principle in the new town planning scheme for Catania. One of the prime features of the method is the use of multicriteria analysis, in order to make sure that all the steps of the valuation process are explicit, articulated and traceable. As applied in the scheme, equitable treatment of the land owners is combined with the feasibility of the approach. A second feature of the scheme proposed is, in fact, assessment of the repercussions of the town planning choices on property values and in consequence of these, activation of an iterative adjustment and verification process. Apart from the intrinsic interest of the Catanese context from the town planning and economics viewpoints, this undertaking has provided an opportunity to set up and experiment a method that could, with the necessary adaptations, be extended to other urban realities for analogous planning purposes.

The work consists of two parts. The first inserts the described experimentation in the context of the national experience of town planning schemes. The second describes the phases of the methodological line adopted, illustrating the contribution of the multicriteria approach to the classification of the urban sectors, and of the real estate valuations to the definition of the equalization upper limit.

The equalization principle in the Town Plan
The reasons for equalization. The concluding document of the congress of the Istituto nazionale di urbanistica (National Town Planning Institute, INU), drawn up in 1995, promoted the spread in Italy of town planning equalization, stressing the point that the fundamental aim of the town planning scheme has always been to establish the principle of the equality of all citizens. In other words, urban and territorial evolution should be planned in such a way as to ensure that quality is available to all; one of the means to this end consists of applying the principle of equalization to the real estate involved in the urban transformation (Inu 1995, 1998).

According to this approach, the scheme must define equal building rights for all the areas included in the transformation zone which are characterized by the same urban-legal conditions, and demands in exchange from the land owners, that should operate concordantly because they are bound to the specific building sector, the same quota of public areas, works to be carried out and financial contributions. In this way the planning scheme is adapted to the altered conception of the role of the State, which is seen no longer as the operative State that carries out expropriation and urbanization, through the mediation of the Council, of the areas which will then be ceded to private users. Instead, the new conception of the State is that of a regulatory State which establishes the equalization rules for the transformation of the areas, and the process will then be accomplished by private operators and users. Thus the town planning scheme has the task of establishing the equalization rules to be applied in the zones of intensive transformation. Private operators will then be required to take on the task of setting up and creating a large part of the public constructions, while the remaining infrastructures and facilities will be supplied by the public bodies. This application of the equalization rules to the town planning scheme reduces to a large extent the need to have recourse to expropriation, which will still be inevitable then only in particular circumstances, in order to create specific public works.

Since the second half of the 1990s, the equalization principle has become progressively more widespread in town planning, because it is considered to solve two crucial issues of Italian town planning: the feasibility of regulatory schemes and the equity of the planning choices made (Stanghellini 1995). In fact, in those towns where the equalization principle has been adopted, it has contributed to overcome one of the main limits of the town planning scheme: the risk that the plans for public infrastructures and facilities could remain on paper and whole quarters be built without the guarantee of adequate social and environmental quality. Because equalization in town planning aims to achieve several goals at once (efficiency, environmental quality, equity) it is regarded as an important tool for achieving sustainable urban development (Fusco Girard 1997). In fact, from this viewpoint town planning equalization addresses three fundamental aspects of sustainability: the social, environmental and institutional dimensions. The social dimension encompasses the aim, directly pursued, of treating all owners of land with analogous urban and legal characteristics equally, together with the aim, indirectly obtainable, of offering whole communities a better quality of life thanks to the greater production of public structures. The environmental dimension is addressed by means of definition of the upper equalization limit, in other words of the building rights accorded to the urban land plots, which thus establishes the admissible urban and environmental building load. Finally, the equalization approach marks the passage from the operative State to the regulatory State, from the expropriating, building Council to the rule-making Council that sets the bounds within which the market, according to the laws of competitive market efficiency, will achieve the preestablished aims: this addresses the institutional dimension.

The latter observation highlights the fact that town planning equalization is rooted in economic theory, being considered to generate a new market of building rights (Stellin, Stanghellini 1995). This market offers great opportunities, as has been shown by international experiences and the main Italian experimentations (Micelli 1997). However, for the new market to develop satisfactorily some important obstacles need to be removed (Micelli 2000). The first of these obstacles is the so-called 'frictional' costs such as taxes on transactions, consultancy and brokerage fees, etc., which could negatively affect the market efficiency. Another obstacle is the high cost of the support activities (communication, planning, mediation, etc.) that must be carried out by the local public administrations in order to promote awareness of the potential of the new market among local operators and hence its activation and efficient function.

The Italian experience.
Thanks to the fact that a number of town planning schemes based on the equalization principle have already been drawn up, the applicative procedure is now quite well consolidated from the methodological viewpoint, at least as regards the main steps to be taken (Pompei 1998). The first step is to individuate, within the given territory of application, the areas that will be affected by the transformation. The given territory may coincide with the Council area, in which case the equalization process will be applied in a generalized fashion. Instead, only one or more portions of the Council territory may be involved in the process. In this case those areas will be individuated which will bear the works having a strategic importance for development of the city. The town planning equalization principle will thus be partially applied and focus on the creation of these projects.

The second step consists of analysis and assessment of the urban and legal characteristics of the land plots. By means of this activity the land will be classified within a given range of categories (use) and classes (quality) according to its characteristics. The third step is to attribute the same building index, defined on the basis of urban, environmental and economic considerations, to each of the classes individuated.

Town planning equalization also includes a fourth phase, subdivided into two parts: firstly, individuation of the building sector and subsector, i.e. the urban context in which the building rights will be aggregated in order to create the transformation, seen in the light of a single unit. Secondly, the land where the building rights will be concentrated must be chosen within the sector (or sub-sectors). Instead, the land to be devoted to public infrastructures and facilities, individuated in the same way, will be ceded (partly free of cost and partly at its agricultural value) to the Council. The first of the above activities is carried out with an eye to the structure and extent of land ownership, which must enable negotiations to be held aiming to concentrate building rights in the selected zones. The second activity is carried out on the basis of the criteria proper to town planning.

The attribution of the building indexes, or upper equalization limits, is vital to the correct operation of the equalization approach (Barbieri, Oliva 1995). High indexes facilitate agreements between the Council and the land owners but increase the building load that the urban system must bear. On the contrary, fixing more contained indexes makes it possible to achieve important results as regards the quantity of land acquired as public property but can make it difficult to obtain the consent of the owners involved.

The crux of the matter is that if the equalization upper limits confer a greater land value than that inherent in the land plots themselves then the owner will be willing to carry out the transformation. However, if a considerable surplus value is generated by the upper limit, then the public decision-body will be making a 'gift' of this advantage to the 'sleeping' private owners (Morbelli 2001). A public decision of this nature satisfies the feasibility condition but certainly does not embody the equity requirement.

On the other hand, if the equalization limit reduces the consolidated market value of the land, the owners will not be willing to undertake the transformation envisaged by the town plan. The choices of the Council may be challenged and the owners may have recourse to legal channels, or else may simply remain inert. In this scenario the condition of feasibility is not satisfied, nor in some senses, is the equity condition. In short, the attribution of the upper limit is not only a choice of an urban planning character: it must also be supported by analyses and assessments of economic type.

In the difficult context described above, the lesson of experience is that attribution of the building rights by means of definition of the upper limit cannot be made in a mechanical, repetitive fashion. The definition of the upper limit must also take into account the specific local conditions, of both urban and economic type. The decision must be recognized to possess an important planning value, which is further enhanced by the fact that this is linked to the definition of the land use. Thus all attributions of the equalization upper limits are inevitably entirely original decisions.

In recent years a growing number of Council administrations have endeavoured to put the principle of town planning equalization to practical use in the course of the transformation processes occurring in their cities. The results of their experiences provide a useful store of documentary evidence which can be referred to by other administrations which intend to adopt equalization as a tool for setting up and managing the town planning scheme.

Tables on p. 114 and p. 115 show some cases of town plans set up and managed according to the tenets of equalization. They are presented in order of demographic size of the city, to illustrate how size, and hence population level and residential density, affects the value of the equalization upper limit. In the two tables the upper limit attributed to the 'urban' land plots is distinguished from that attributed to the 'periurban' land to be included in the new urban extension.

Further subdivisions can be made. As regards urban land plots, i.e. those within the perimeter of the built-up area, rundown urban areas tend to be treated differently from areas devoted to facilities in the previous Town Plan or left as open spaces. As regards the peri-urban plots, the agricultural areas identified in the previous Town Plan are distinguished from those with environmental constraints or which are unsuited for building.

The data reported in the first table demonstrate that in cities with a demographic value ranging from 90,000 to 210,000 inhabitants, the equalization limit for rundown areas or those with high territorial density which need to be reclaimed ranges from a minimum of 0.35 sq.m/sq.m to a maximum of 0.60 sq.m/sq.m. In the only metropolis considered (Turin, which has just under 900,000 inhabitants) the equalization index is 0.70 sq.m/sq.m for the urban areas. Instead, the upper limit attributed to areas devoted to facilities in the previous Town Plan and to marginal areas ranges from 0.15 sq.m/sq.m to 0.25 sq.m/sq.m, the most common limit being between 0.20 sq.m/sq.m and 0.25 sq.m/sq.m.

The indexes attributed to periurban land are notably lower. In the areas outside the built-up zone the limit ranges from a minimum of 0.08 sq.m/sq.m to a maximum of 0.15

sq.m/sq.m, if they are flat and lack any particular landscape value. Instead, for areas unsuited to building from the geomorphological viewpoint or because of their high environmental value, the equalization limit is lower, being between 0.03 sq.m/sq.m and 0.08 sq.m/sq.m.

In harmony with the dominant tendency in recent town planning, the equalization limits are expressed in square metres per square metre. However, the surface unit for building land is not always the same, although there is a general tendency to express this as gross square metres, in other words including the wall space.

When attributing the upper limit to the land in the different urban sectors, there may be a clash between the general nature of the limit rule and the presence of particular situations which could confer a different value to the land plots included in the sector. The most frequent situations this could apply to are the following: the presence of preexisting buildings; the existence of building constraints imposed by law; the need to devote areas to different, non residential use.

This clash is often solved by correcting the limit normally attributed in exactly the same way to all the plots belonging to the same class, by introducing one or more new parameters. The parameters are: the type of urban use, any preexisting buildings, any building constraints. To highlight the theoretical grounds and the implications of an empirical nature involved in such choices, some of the solutions adopted are described below.

The elements of flexibility of the upper equalization limit.
In the case of Casalecchio di Reno the upper limits of

the Town Plan refer to residential use: when different urban use is involved, the upper limits are corrected by applying a multiplication coefficient. This aims to re-establish equality of treatment among owners of analogous land plots which have been assigned different urban land use by the Town Plan, and hence have different values. The multiplication coefficient, denominated the "index conversion coefficient", is set at the following values: 1 for residential land use, 1.25 for tertiary sector land use, 2 for industrial sector land use.

Moreover, Town Plans based on the equalization principle take into account pre-existing buildings when determining the total building rights.

If buildings in good condition which do not house economic activities and must be demolished are present on the urban sector, the building rights resulting from application of the upper limit will be increased by 100% (Casalecchio, Cesena). If the existing buildings, as well as being in good condition, also house economic activities, then the building rights will be increased by 200% (Casalecchio). Instead, if rundown buildings are present, then the entire quota corresponding to these buildings is sometimes (Casalecchio) added to the overall building rights generated by the upper limits, if the Town Plan envisages their restoration or demolition. On other occasions (Cesena), again in the case of rundown buildings, 100% of the useful existing built-up surface is added to the building rights in the case of residential buildings and 80% in the case of industrial buildings.

Another method of correction of the upper limits

which is sometimes applied takes into account the existence of environmental or infrastructural constraints in the areas to be transformed.

In fact, in some experiences constrained land plots are assigned lesser building rights than those established by the upper limits. This assignment of lower building rights, serving to facilitate public acquisition of the constrained areas, takes into account the urban ground rent they are considered to possess in any case. Clearly, the building rights assigned must be used outside the constrained area.

In practice the building rights accorded are in the order of a third of the upper limits. The Town Plan for Cesena applies a coefficient of 0.30 to the upper limit; this reduction is also valid for constrained areas where the no-building rule is not absolute. The Town Plan for Casalecchio applies a reduction coefficient of 0.33 to the established building index, only in the case of absolute no-building constraints; instead, the building rights deriving from the established index are accorded in full to land plots bound by other types of constraint.

This flexible application of the equalization upper limit adopted in the situations outlined above can be integrated by two further devices:
- the incentive mechanisms accorded to land plots receiving building rights generated by other land plots;
- the production of public residential building rights through incentive mechanisms accorded to land owners or through the accordance of added rights, apart from those established by the upper limits, in favour of the Council administration itself.

In the Ravenna Council

area the building rights generated by the upper limit (approximately 0.10 sq.m/sq.m) in the periurban area named *Cintura verde* (Green Belt) can only be used to implement the urban program reclaiming the *Darsena di città* (City Dockyard). The owners of the land involved in this second project who purchase the building rights generated by the green belt plots (land which will be ceded free of cost to the Council) benefit from a 30% increase in building rights.

In the Ravenna Council area the upper limit attributed to the urban areas to be transformed included in the *Darsena di Città* Plan can be increased by a maximum of 30% if public housing (subject to public convention, featuring tax relief and/or public financing) is built. This increase is applied when defining the development program for each urban sub-sector.

In the Casalecchio di Reno Council area the established index defines, in terms of the cadastral surface, the amount of building the land owner can carry out. The amount of building rights attributed to the land is exclusive of the amount of building to be carried out to create public facilities and public residential building. The latter, which will be carried out on the land the owner is required to cede free of cost to the Council, is determined by the Council Board when the detailed Town Plan is being approved.

The methodology set up for the new Town Plan for Catania
From expropriation constraints to the equalization principle. While the new town planning scheme for Catania was being drawn up, a fundamental decision was made, the Council deliberation no. 58 of 1998.

This was passed after a long, indepth debate in which the political bodies and principal economic and social powers of the Catanese community took part. In December 1998 this deliberation laid the foundations for the principle which inspires the overall Town Plan and its actuation mechanisms.

Previously, the first draft of the new Town Plan contained planning choices which would have imposed a number of constraints on many areas destined for expropriation (especially to create green spaces and public parks) and enhanced the economic value of others (destined for new building and private restoring). The above deliberation abandoned this approach in favour of the equalization principle.

In harmony with the national town planning trend, the Catania Council decided on the one hand to treat all owners of land with analogous urban and legal characteristics in an equal fashion and on the other, to fill the lack of collective facilities by acquiring, free of cost or at their valuation as agricultural land, the land with no-building constraints deriving from transference of the building rights to other land plots. A particular feature of the Council deliberation was that it individuated fifteen sectors, named 'resource sectors', and subjected seven of them to executive prescriptions according to art. 2 of the Town Planning law n. 71/78, of the Sicilian Region. The concept of 'resource sector' indicated the intention to use this transformation of the sector as a means of filling the severe lack of fundamental urban requisites such as green spaces, car parks and school buildings.

After this deliberation of December 1998, the planning activities carried out by the Council planning office led to the individuation of other areas, mainly sited around the perimeter of the built-up centre, which could also be qualified as "resource sectors" in view of their ability to increase the quantity of collective structures and public spaces in the city.

Classifying the 'resource sectors'. In general, the attribution of building rights to urban land plots to be transformed according to the equalization mechanism requires prior investigation of their urban and legal characteristics. It is very difficult to identify these characteristics, especially those of legal pertinence, and their interdependencies with the real status. In fact, it is no coincidence that the ministerial decree that should have clarified, for the purposes of determining the expropriation indemnity, the requisites for land plots to be assigned building rights, has not yet been enacted despite the fact that the advance decree was passed more than ten years ago.

Unlike the approach adopted in other planning experiences, in the case of Catania the intention was to make the procedure individuating these characteristics as explicit and traceable as possible, because it was considered important to confer a high level of transparency to this choice, which is the very foundation of the new Town Plan.

Multicriteria analysis was adopted to individuate the urban and legal characteristics and their relative importance. This development of multicriteria analysis relied on the one hand on specific studies and investigations aiming to supply the necessary data and on the other on the specific knowledge and skills contributed by the managers and consultants of the Planning Office.

The scheme shown on p. 117 illustrates the entire procedure followed to establish the rules for the attribution of the equalization upper limits for the 'resource sectors'. The steps referring to the application of the multicriteria analysis are indicated along the centre line. The left column lists the contributions made by specific research projects, investigations and valuations conducted to obtain the information serving to implement the different steps in the multicriteria analysis. The right column reveals the contextual fields of the methodological process: owing to the multidisciplinary nature of the issues addressed, the valuation procedure relied to a large extent on the knowledge and skills of the panel of experts composed of the managers and consultants of the Council Planning office.

The approach adopted refers to the multicriteria analysis method known as the Analytic Hierarchy Process (AHP).

The AHP consists of three fundamental phases. In the first, the valuation issue is structured in hierarchical form. For example, the aims are set at the highest level, the valuation criteria immediately below this and the alternatives are listed underneath. The second phase consists of comparative analysis of the elements making up the hierarchy. This is applied on pairs of elements compared with each single element in the higher level. The choice of scale, according to which the elements to be compared will be measured, is made at this stage. It is important to define the measurement scale in such a way as to reflect the heuristics of the experts expressing the comparative judgments, to prevent these from being negatively

affected by a lack of harmony between the scale and the experts' valuation systems. Finally, in the third phase the judgments are summarized. The final result is thus no longer a set of undifferentiated elements but a set listed in order of their level of importance, each of which is attributed the appropriate weight.

In view of the ultimate aim of the application (individuation of the appropriate attribution of building rights to land plots) the above approach required first all that the characteristics of the land to be valued be defined, i.e. establishment of the valuation criteria. This first problem is interlinked with another aspect: the relative importance of the characteristics, i.e. the relative weights to be assigned to the valuation criteria.

The characteristics of the land were defined (valuation criteria) on the basis of the indications in the technical literature and the professional experience of the panel of experts. The relative importance of the characteristics (weights of the criteria) was defined by means of the 'pairs comparison' technique, applied by the panel of experts.

In the multicriteria approach, each criterion generically expresses one measurable aspect of the judgment characterizing a given dimension of the problem. When the criteria adopted are of qualitative type, as in this case study, the pairs comparison technique enables the subjective judgments of each expert to be transformed into real numbers. The criteria are compared in pairs and the expert's preference, expressed according to a given measurement scale, is inserted in a pairs comparison grid.

After discussion of the

indications in the technical literature and of the opinion expressed by the General Legal Council of the urban and legal characteristics of the specific local context of Catania to be considered, the panel of experts defined as relevant for the purposes of attribution of building rights the following characteristics:
- the location;
- the accessibility of the land and presence of public facilities;
- environmental-landscape constraints;
- the geomorphological features;
- the microclimate;
- the presence/absence of pollution.
The criteria were weighted after the pairs comparison grid had been filled in by each expert. The weights vector was built by processing the data with the "Expert Choice" software. The relative weights defined by each expert were then aggregated. The final result of the processing was then subjected to further verification by the panel in view of the experimental nature of the procedure and the innovative character of some of the criteria, such as those relative to noise pollution and the microclimate. The weights, totalling 100, were attributed as follows: location was assigned a weight of 35, accessibility of the land and the presence of public facilities 23, the geomorphological features 10, the presence of landscape-environmental constraints 14, the microclimate 10, the presence/ absence of noise pollution 8. It is well known that the relative weights attributed are an important part of the assessment, because they strongly affect the final result. If the priorities of the criteria are modified the ranking of the alternatives will also change (Fusco Girard, Nijkamp 1997;

Lombardi 2001). Moreover, it is accepted in the literature that in multicriteria valuation processes the attribution of the weights is a decisional step with a strong political bearing. Therefore, in this specific case it was assumed that the judgment of the panel of experts was the expression, on the technical plane, of the political view of the Council administration, as regards the town planning field.
In parallel, the characteristics of the land plots in each 'resource sector' were verified from the standpoint of each of the six criteria. This phase of the valuation procedure relied on the direct information about the sites acquired during surveys, on the analytical territorial maps prepared during drafting of the Town Plan and on the knowledge possessed by the managers and consultants of the Planning Office. According to the status of the characteristic being examined, referred to the set of lands making up the sector, the 'resource sectors' were assigned to one of five quality classes. This classification was depicted in map form. The classes were attributed a score, applying a scale ranging from 0 to 1 with 0.25 intervals, where 0 was the worst status of the characteristic being examined and 1 the best. The location was the first of the characteristics considered, defined as the position of the sector in the city fabric, with respect to the subdivision of the territory of Catania as follows: "consolidated city", "city to be completed or restored", "city to be built", "periurban rural city". The first two classes indicate different degrees of development of the built-up area. When setting up the scale for attributing the score, the classes of the

plots belonging to the built-up area were ranked differently from those of the "city to be built" and the "periurban rural city", which could be transformed only if this was provided for by the new town planning dispositions.
Accessibility of the land took into account the main transport infrastructures leading to the plots in the sector, regardless of their position in the city fabric. Because the transport infrastructures condition access to urban facilities, this characteristic was assessed together with the local level of facilities (schools, public green spaces, etc.), within a radius of about 500 metres. Five levels of accessibility and facilities were established: excellent, good, sufficient, poor, very poor. As to the morphological suitability for building, this was rated higher for flat territory with a good weight bearing capacity and other similar physical features, than for sloping, unstable lands with a poor weight bearing capacity. In the Catania Council area, strongly sloping land plots were accorded lower scores than those with a moderate incline or flat surfaces. Moreover, some of the areas have a clay base with deep groundwater. The geological risks posed by the Catanese territory were surveyed in a specific investigation set in motion by the Council, and the results were illustrated in the specific 'risks map' depicting the widening area at seismic risk, the areas in danger of landslide due to seismic activities, cyclical movements due to seismic activities and the areas at risk of landslip.
Analysis of the Council territory according to the geomorphological characteristics and geological risks led to classification of the sectors according to their suitability

for building on the basis of the above aspects.
The presence of landscape environmental constraints was considered to negatively affect the building suitability of land; the importance of the limitation was ranked in relation to the level of the landscape-environmental constraint, assuming that absolute no-building constraints were not then imposed on the sectors considered. The microclimate expressed the differences in possible climatic conditions in the urban territory, between the plain and the rest of the city and, inside the city, between the hilly and coastal strips and the rest of the city. The zone near the airport (the least suited to building from this standpoint) was distinguished by the high level of noise pollution, and so to a lesser extent were the zones around the main road junctions and the railways, which were distinguished from the rest of the city.
On the basis of the classifications made according to the above criteria, the sectors in each class were attributed a score ranging from 0 to 1 with 0.25 intervals. Table on p. 118 summarizes the qualitative judgments deriving from the analyses and embodied in the relative scores.
The scores gride was linked with the weights grid obtained by pairs comparison of the criteria. This enables the sectors to be listed in order, by summing the product of the score for each characteristic, multiplied by the relative weight.
The mathematical model used, known in the literature as the 'compensatory aggregation method' or more simply as the weighted summation, is as follows:

$$v_i = e_{i1}w_1 + e_{i2}w_2 + \ldots + e_{ij}w_j = S_je_j\ e_{ij}w_j$$

where:
- vi is the final score of the i-th sector;
- ei1, ei2, …. eij are the partial scores, standardized as the centesimal values ranging from 0 (minimum suitability) to 1 (maximum suitability), obtained by the i-th sector for each valuation criterion (1, 2, … j);
- w1, w2, …. wJ are the weights assigned to the various criteria by the panel of experts (1, 2, … j).
Attribution of the equalization upper limits. After the valuations had been made and the research concluded, the 'resource sectors' were assigned to different homogeneous classes and each class was attributed an equalization upper limit, i.e. a maximum quantity of building rights accorded in equal fashion to all owners of land in this sector belonging to the same class.
The upper limits proposed derived from the following criteria:
- the requirement that the upper limit must possess the character of a 'general rule', which means that it cannot be differentiated sector by sector, and sectors with homogeneous urban and legal characteristics must be accorded identical building rights;
- the experience gained in other cities with areas with similar characteristics to those of each resource sector. Investigation of the experience gained in other Italian cities provided useful indications for individuating the maximum (0.60 sq.m/sq.m) and minimum (0.02 sq.m/sq.m) values, as well as the values marking the transition from built-up land to new building land;
- the sustainable building load for the sectors in each class, taking into account also the overall requirement to fill the lack of collective facilities;
- the compatibility of the

land values produced by the upper limit with those recognized by the real estate market.
The equalization upper limit is taken to refer to residential building. As in other reported experiences, in the case of different urban use the value is corrected by application of the appropriate conversion coefficients in order to re-establish equity of treatment of land owners treated differently in the Town Plan because their land will be devoted to different urban use. The upper limit attributed to the land, and hence to the property, does not include building rights for public buildings and public residential housing. These rights belong to the community and, in the context of establishment of the building sector, the owners will be required to cede the necessary areas to the Council free of cost.
Financial verification of the proposed upper limits. The equalization principle postulates that the desired transformation can be achieved thanks to the acceptance and contribution to the Master Plan of the holders of the building rights, i.e. the land owners. Consequently, the value of the land derived from the equalization upper limit must be compatible with the consolidated land values on the local real estate market. For this purpose, specific inquiries were made to qualified operators on the estate and building markets, and the prices of new residential buildings were verified in the urban contexts where the resource sectors were located, as well as the costs of setting up new settlements and the 'ordinary' profits made by the local enterprises. The value of the land was calculated by subtracting all building costs at the current market rate from the market value of the buildings, and was expressed as the

percentage of the initial value.
The area value, obtained by multiplying the building index derived from application of the upper limit by the percentage land value calculated as above, was verified in various analyses made by the Planning Office.
Although the analyses were inevitably approximations, as are all summary estimations made in order to set up overall planning tools (Realfonzo 1994), positive results were obtained as regards achieving compatibility of the values deriving from the equalization upper limits with the consolidated prices on the land market in Catania.

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