

The Economics of World Heritage Sites: How Can Economic Analysis Improve the Returns and Protection of Cultural Heritage

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In the way we look at and use cultural heritage, one cannot but recognize the direct relationship that has come to exist between cultural heritage, beauty and aesthetics and the economy. This inclusion of non quantifiable values (beauty, aesthetics, picturesque) in cultural heritage leads to changes in the understanding and evaluation of cultural heritage and imposes on us the use of new economic tools that could contribute to a better use and protection of this heritage. If cultural heritage was considered to be as social good that falls in the sphere of welfare economics, the modern uses of heritage, particularly its consumption through tourism have propelled cultural heritage in the market economy.

In this presentation, I shall show how cultural heritage has become a commodity that produces, goods, services and wealth and that, when properly managed, can contribute to the redistribution of wealth and to the betterment of the living conditions of the surrounding society. I shall also present the conditions for this contribution through two examples: the World Heritage site of “The Alhambra y Generalife” in Granada (Spain) and the World Heritage “Cultural Landscape of Sintra” in Portugal that provide us with two different types of site: one is monumental and its accessible through a ticket system while the second is a cultural landscape with most of its area open to free visits.

1. The Economic Perspective of Cultural Heritage

1.1 The concept of Heritage and its origins

Although the concept of heritage (*patrimoine*) derives from the Latin “*patrimonium*” (from *Pater Monere*), its origins can be traced back to Ancient Greece when it represented the land, the estate that produced the family’s basic commodities. It could neither be traded nor sold: it was to be transmitted from one generation to the next.

It seems that the concept started under the economic regime of what has been called the

“*oikos*”, a non-market economy ¹ where, according to Johann Karl Rodbertus², a German economist of the 19th century, it symbolised the family estate. Because of historical confusion – there is no exact reference to a given period, and of the controversy surrounding it, the word “*oikos*” became an easy tool to explain the “natural economy” in which money, markets and trade had little impact of the whole system of production. In such an economy, the family had to possess its means of production since it could not address its needs through emerging and little monetarized markets that were functioning mainly through a barter system.

On this period of Ancient Greece and on the importance of the land in its economy, the French geographer and specialist of the Mediterranean Fernand Braudel writes about “The Land or the Commodity” ³ by reminding us that, with labour, land was the true value, the major production factor with manpower. Accumulation of wealth came through the accumulation of land and labour. This wealth -wheat, olive oil, etc. - had to be traded, exchanged and this could take place only in the presence of markets and of specialized traders.⁴

In a book published in France in late 2000, the archaeologist Alain Bresson⁵ refutes the theory of Karl Polanyi and C. Arensberg about the economic system of Ancient Greece. According to Bresson, there was no such thing as the ‘*oikos*’ regime. Markets were present, even if such markets were more led by barter trade than by money. Their importance in the life of the Greek cities was more important than thought before since they were necessary to feed the population of these cities. Exchange of goods took place regularly between cities, even remote, and this required from the cities the generation of revenues (*prosodoi*). No city could

¹ This part is based on the works of K. Polanyi and C. Arensberg, « Trade and Markets in the Early Empires – Economies in History and Theory » The Free Press, New York, 1957.

² See Karl Rodbertus, « Economic Life in Classical Antiquity », published between 1864 and 1867 and cited by Polanyi and Arensberg, op. cit.

³ In his posthume work « Les mémoires de la Méditerranée » (Ed . de Fallois, Paris 1998),

⁴ « Bien sûr, la terre est la grande réalité de base. Au moment du vaste essaimage de ses hommes, la Grèce est un pays agricole, d'économie archaïque, mal doté en vérité : peu de terres arables, moins encore de terres de qualité. Dès que la population augmente, des colonisations intérieures s'imposent, mais leur élasticité est réduite: la pioche des défricheurs ne s'arrête pas seulement contre les pierrailles ou la racine noueuse des arbres, elle est condamnée par les faibles rendements de toutes les terres marginales. ... D'elle même, la difficulté se transpose en termes sociaux. C'est le nombre trop élevé des petits paysans acharnés à partager un maigre héritage qui les livre à l'exploitation de quelques grands propriétaires, et fait d'eux des *hectémores* – des tenanciers qui livrent probablement chaque année les cinq-sixième de leur récolte – les endette vis-à-vis des riches et rend un jour ou l'autre « la terre esclave ». ... Le processus de paupérisation pousse des hommes vers des rivages lointains, une fois que la colonisation intérieure est achevée, une fois que ses limites sont atteintes. C'est pour saisir le blé des pays peu peuplés, ... Mais ce blé, il faudra le payer. Le plus souvent avec du vin, de l'huile – produits agricoles riches – et avec des produits manufacturés. Or, sans l'intervention de marchands déjà spécialisés, il n e peut y avoir d'échange ... Il y a donc eu, dès le début de l'émigration ou peu s'en faut, des marchands et des calculs mercantiles, et même des colonisations à motivations marchandes. »

⁵ Alain Bresson : "La cite marchande", Scripta Antiqua, Ausonius, Maison de l'archéologie, Université Michel de Montaigne, Bordeaux, 2000.

provide its population with all the necessary goods (grains, meat, vegetable, olive oil, etc.) and therefore it had to trade. Concurrently, it is difficult to imagine that the peasantry was able to live under a fully autonomous system. Hence, the necessary presence of markets, albeit different from our modern ones. And Bresson to conclude:

"According to places and times, the share of the production consumed by the producers or sold in the internal market must have varied sensibly without ever auto-consumption [or self-sufficiency] (*autoconsommation*) ceasing to being the dominant model (which does not mean an exclusive model). But even auto-consumption is not contradictory with the selling in the market of an important share of the production."

By recognizing the presence of auto-consumption as a dominant type, Bresson recognizes implicitly the fact that the family estate could neither be sold nor traded. This situation can still be seen in certain mountain peasant societies around the Mediterranean in which there remain a certain parcel of land (usually that surrounding the family house or next to it) that is never to be sold. It also explains in a way the presence of main-mort family domains in the same region (*Awqaf* in the Arab World).

Thus, heritage gained the status of non-exchangeability. It is in this context – which became the subject of lengthy debate among the economists of the late 19th and early 20th century⁶ - that the concept of the "*patrimoine*" which could neither be sold nor traded, emerged; a concept which would gain weight and recognition throughout the 20th century. Here, a word of caution is necessary: we must keep in mind that the "*patrimoine*" of Ancient Greece (i.e. the *Oikos*) may be the father of our "*patrimoine*", but it is of a different ilk and serves different purposes and if both are related to the economy, this relation is radically different.

How then did the "*patrimoine*" or heritage change through time until it became a mainly cultural and aesthetical object?

1.2. "Heritage" as we understand it

It is usually agreed that the French Revolution brought about the institutionalisation of the notion of "common heritage" and the introduction of intangible values in the concept of "heritage". In 1792, the revolutionaries begun destroying physical representations of the "Old Regime": castles, palaces, private domains, monasteries, churches, etc. The Convention, which headed the Revolution, became alarmed by the loss of wealth caused by this destruction and

⁶ That of the type of economy in classical Greece : primitive or early modern ?

decided to protect the “monuments”⁷. It entrusted a special commission with this task. The purpose of such protection was twofold:

- To protect the wealth of the country and put it at the service of the new regime;
- To give this new regime an historical dimension, and root it in tradition, thus legitimizing it: from belonging to a family or a community the monuments became the property of the State.

It is then that the concept of “national heritage” was born. With this “national heritage”, the French Revolution created the artistic memory, the notion of monuments and the heritage of forests and estates.

This was followed by the listing of monuments and sites in 1810 by the French Minister of the Interior, Alexandre de Laborde. Once these lists were published, the bourgeoisie was keen to visit the sites, thereby starting the first “tourism” activity, then called “*excursions*”.

In the 19th century, with the Industrial Revolution, two important changes occurred. Firstly, the bulk of production and revenue generation was no longer driven by agriculture. Industry took over, thus relieving the land of a large part of its economic function and widening the gap already opened by the French Revolution between the concept of heritage, of “*patrimoine*” as we know it now and the original meaning of the Greek (the *oikos*). Secondly, a large economic surplus was generated through the new production processes and the colonies. This enabled the State to devote more of its resources to the protection and enhancement of its “national heritage” which was increasingly becoming a heritage of beauty, of aestheticism and picturesque.

Meanwhile, the results of explorations and discoveries, which Europe was hearing about thanks to the emerging media, together with a new “universal thinking” were pointing to the notion of a single world, a single humanity. The search for universality was also challenged by the destructions of monuments and relics in European cities and in the colonies owing to the pressures of economic growth and the needs of emerging industry.

The modern notion of “*patrimoine*” -which already lost much of its economic value came thus to life under specific economic circumstances: those of the Industrial Revolution in Europe. The “*patrimoine*”, initially land related, was no longer needed to produce the wealth of the Nation.

1.3. The introduction of Beauty and Aestheticism

⁷ From the Latin “*pater monere*”, i.e. under the protection of the father, the “*pater familias*”.

Some words are necessary on beauty since it has become a major reason for listing a site or a monument and the most powerful attraction for tourists.

Again, we return to the Greek civilization and particularly to Plato whose reflections on “beauty” have influenced western thinking. In one of his “discourses”, “Hippias Major”, Plato says that “there is a beauty in itself that ornates all other things and makes them appear beautiful when this form is added to them”. The word used by Plato for form is “*eidos*”, the idea that, in this sentence, is nothing but beauty itself. And today likewise, we list and protect “beautiful” places and monuments quite often for very personal, subjective, psychological reasons.

It is during the industrial revolution that the memorial function of the monuments gradually started to be replaced by art, a trend begun during the Renaissance. Previously, the function of a monument was to remind us of deity, of power, or of a victory. Perfection in construction as well as the ornamental aspect of the monument were sought, but not necessarily beauty.

Until the 15th century, “art” (from the Latin “*ars*”, i.e. activity, know-how) referred to a set of technical activities related to a trade. The idea of aestheticism, as we understand it, only appeared when art gained recognition, through its new acception, as an intellectual activity that could not be reduced to a single technical task.

This happened once again as a result of a change in the economic process. The transition from a small-scale production system (*artisanal*) to a capitalistic mode of production radically changed the status of the artist. This freed the artist from the domination of the guilds and their feudal structures. In the Middle Ages, the object of art had to conform to the requirements of the commissioner to meet its future functions (religious, ornamental, celebration, etc.); this was gradually changed and more freedom was left to the creativity of the artist. At the same time, the price of works of art increased drastically. Prices no longer related to the materials used; instead they reflected the reputation of the artist, his market value⁸.

The intrusion of beauty, aestheticism and of picturesque, which has developed a quasi psycho-analytical bond between us and our cultural “heritage” has provoked an inflation of this “heritage” at all levels of social organization: local, regional, national and international. There

⁸ On art and aestheticism, see : Marc Jimenez, “Qu’est-ce que l’esthétisme ?”, Gallimard, Paris 1997.

is today a growing “heritage” market and it has entered an inflationary spiral.⁹

2. The Economic Values of Heritage

Must heritage have an economic value? If we were to follow John Maynard Keynes, then the answer is yes. It is not only a matter of intrinsic value, but rather, according to Keynes a matter of use value. He once suggested that if artistic resources were not fully employed, it would be worth knocking down the majority of buildings in South London next to the Thames and replacing them with the best of contemporary buildings and parks laid out like St. James’s.¹⁰

2.1. The Different Types of Value

Tourism, now a major sector of the World economy, is not the only source of economic value for heritage. In a publication of the World Bank¹¹, Ismaïl Serageldin lists the full set of the economic values of heritage.

From the more tangible to the intangible values, Serageldin divides the Total Economic Value of Cultural Heritage Assets in two major categories: the Use Value and the Non-use Value. Between these two categories lies the “Option Value”. The explanations provided by Serageldin clarifies these different values (cf. Annex 1):

“ ... Total economic value is usually decomposed into a number of categories of value. [It] generally include the following:

- Extractive (or consumptive) use value,
- Non-extractive use value and,
- Non-use value.

Extractive use value. Extractive use value derives from goods that can be extracted from the site such as direct uses being made of the buildings, for living, trading, renting or selling spaces and visiting the places. The use of a historic site or monument does not deplete it unless it is inappropriate or excessive, denaturing the beauty of the site or the character of the place.

Non extractive use value. Non-extractive use value derives from the services the site provides. Some people just pass through the city and enjoy the scenery without spending money there, and their use of the place is not captured by an economic or financial transaction. Those likely to have the most relevance to the valuation of cultural heritage are aesthetics and recreational

⁹ Remember Alan Peacock’s extract above.

¹⁰ In Alan Peacock, op. cit.

¹¹ « Very Special Places : The Architecture and Economics of Intervening in Historic Cities » . Ismaïl Serageldin, The World Bank, 1999.

value:

- *Aesthetic value.* Aesthetic benefits are obtained when the fact of sensory experience is separate from material effect on the body or possessions.
- *Recreational value.* The recreational benefits provided by a site are the result of different services a site might provide: rest stops, vistas, and attractive meditation spots, etc.

Non-use value. Non-use value tries to capture the enrichment derived from the continued existence of heritage. Even if not likely to visit a site, one would feel impoverished if it were destroyed. This is referred to as **existence value** (the value that people derive from the knowledge that the site exists, even if they never plan to visit it). Other aspects of non-use value include the **option value** (the value gained from detaining the option of taking advantage of a site's use value at a later date, that of not destroying it)."

2.2. The Economist's Perspective: Estimating Value

There are several methods to estimate the economic value of heritage, the most common being the Contingency Valuation or the Willingness to pay or the Transportation method. I wish here to take a different perspective that provides better tools to our analysis: one can consider heritage as an economic commodity and try to analyse its economic role and returns. In this framework, heritage becomes an economic "asset", since its protection and management represent "future economic benefits"¹².

2.2.1. Heritage as a commodity¹³

The total economic value of a site can be considered to be at least equal to the total revenues its various uses generate over time, its most intangible values being impossible to calculate.

Therefore, to maximize its value as well as its return to the economy - and fortunately in line with our wish to transmit our heritage to the future generations, the lifetime of a cultural site must be as long as possible since, as opposed to other "commodities", a cultural site is unique and cannot be replaced: when a tool becomes obsolete, we can buy a new one. There is no

¹² A very instructive study has been prepared by Helen Tyzack, "Recording the value of museum collections in financial reports : issues", Australian Key Centre for Cultural and Media Policy -University of Queensland, 1998.

¹³ A great number of economic studies have been carried out on heritage sites or cities or monuments as being an economic tool. See inter alia : (a) Bath City Council, "Economics of Tourism in Bath, Feb. 1987; (b) New Zealand Historic Places Trust, "The Economics of Heritage Buildings -A Contribution to the Historic Heritage Management Review"", 1998; (c) Timothy Ambrose ed., "Money, Money, Money and Museums", Scottish Museums Council, 1991; (d) "Economic Values of Protected Areas", Adrian Philips ed., in Best Practice Protected Area Guidelines Series, Cardiff University and IUCN, 1998.

such thing in cultural heritage since whatever the value of, say, a building by Sir Norman Foster or Frank Lloyd Wright, never in our foreseeable future can it replace a roman theatre. They are simply different and each one is unique. The fact that any heritage site is unique and cannot be replaced gives it a special economic value.

The second limitation to this economic perspective of heritage derives from that peculiar perception and personal relationship we have with cultural heritage. It is this perception and this relationship that tell us how much is our heritage worth for us. A heritage site therefore must not be consumed rapidly. Better still, it should not be consumed at all.

This extended protection has an economic return known as the “reward of waiting”¹⁴ or the “reward of abstinence”. Instead of spending, consuming or simply destroying a heritage site, its owners – State, local community, private owner – decide to keep it. This decision could have been taken against the possibility of high returns from a tourist or real estate operation. Since heritage sites are not abundant and will never meet the exceeding and ever increasing demand and since “there should be property in them in order that they may be used in an effective manner”¹⁵, It is the scarcity of these capital goods that makes income from their property possible. How does this apply?

In a major work¹⁶, the Italian economist Piero Sraffa writes on Fixed Capital, being a durable production tool, entering annually into a production process in the same way as, say, the raw materials that are regularly consumed in the production. In this perspective, a heritage site or a cultural monument will be considered as being (a) a fixed capital and, (b) a commodity that contributes to a production process.

A durable production instrument, heritage is part of the means that enter in a production process like any other means of production consumed in this process. At the end of the period (say, a year), what remains of the heritage used in the process will be dealt with as a portion of the joint annual product of the branch, the main output of which being the negotiable commodity that represents the main subject of the process. To simplify, we can assume that the subject of the production branch is the returns from tourism.

Let us consider a knitting machine, which together with the thread, the energy etc. contributes

¹⁴ Joan Robinson provides us with an interesting reading of this concept in her book « The Accumulation of Capital » (Macmillan St Martin’s Press, London 1956) on page 393 in a section entitled « Income from Property as the Reward of Waiting ».

¹⁵ cf. Joan Robinson, op. cit.

¹⁶ Piero Sraffa, “The Production of Commodities by Means of Commodities – Prelude to a Critique of Economic Theory”, Cambridge University Press, 1960.

to the production of socks. At the end of any given year, the machine would have aged by one year; it has been utilised, it has become older by one year and it would then emerge at the end of the production period as a new commodity together with the socks it had produced. This implies that the same machine, at different stages, be treated as as many different products as there are stages of production, each product having a different price and a different value.

Consequently, a branch that uses a durable production instrument must be looked at as being subdivided in as many separate processes as there are years in the total life of the instrument. Every one of these processes uses an instrument of a different age and every one produces, jointly with other commodities, an instrument that is older by one year than the previous one used in the process.

In the case of heritage, sites and monuments can be assimilated to such commodities as Sraffa defines in his example of the knitting machine, replacing the knitting machine with a heritage site. Surely enough, it produces goods, generates revenues, together with other commodities used in the process: tourism, hotels, restaurants, buildings, travel, etc.

In doing so however, exactly like the knitting machine, the site is confronted with depreciation. It produces each year a site older by one year. In economic terms, its market price will therefore change; but we do not need to sell it to know its market value.

Here, we return to the notion of “option value”, but with an economic, market oriented bias. We can say that the value of a site or a monument is equivalent to the value of goods it produces. But as shown before, many of these goods are intangible and their economic value is impossible to estimate.

In pure economic terms, the value of heritage would therefore be equal to the sum of all the revenues its existence generates, minus the costs of its management and of the maintenance of its heritage values.

If V_t = value of site at year (t),

R_t = total revenues generated by the existence of the site in year (t),

C_t = management and maintenance costs of site (s) in year (t), Then

$$V_t = R_t - C_t$$

Where $R_t = R_{a,t} + \dots + R_{z,t}$

Being the sum of all the direct and indirect revenues induced by the presence and utilisation of the site, such as :

- entrance fees (tickets) and related costs,
- sales of maps, guides, souvenirs, etc.
- restoration, parking, ...
- hotels and recreational activities,
- transportation to and from the site,

taking into consideration the fact that every one of these activities induces a variety of related economic activities in the national context.

And where:

$$C_t = C_{a,t} + \dots + C_{z,t}$$

Costs ranging from the cleaning of the site, its presentation, scientific research and publications, and depending of the fragility of the site, the direct and indirect costs of its physical maintenance and continuous rehabilitation to match the degradation caused by its utilisation.

Theoretically, if we assume that a tool such as a heritage site produces revenues with a constant, regular efficiency throughout its existence, the annual cost of its maintenance and management to cover its depreciation must be constant if we want the prices of all the units (different types of revenues) produced by this tool (heritage) to remain equal through time. This annual cost will be equal to a fixed annuity, the value of which calculated on the basis of the general rate of return (r) -is equal to the original price of the tool¹⁷ (or economic value of heritage). If this direct economic value is V(0) and the life of the site (n) -which in the case of a physical cultural heritage should be as long as possible¹⁸, the annuity will become :

$$V(0) \times [r(1+r)^n] / [(1+r)^n - 1]$$

However, we had considered that the annual processes of production differ one from the other by the fact that the production tool (heritage), produces at the end of every process a new tool, a new commodity, older by one year from the previous one. Its value therefore varies with its age or better, with the number of years of its use. Therefore, year after year, more of the returns of heritage should be devoted to its protection and presentation.

Thus, if

¹⁷ In the case of heritage, this price can be the market value of a piece of art, or the social value of a site or monument, this being estimated through, for example, the contingency valuation method or even the market value of the monument which would represent the pure economic direct value, excluding any patrimonial value.

¹⁸ But for our case here, we should rather say that the life of the site is the expected number of years of its exploitation.

V_{t0} = direct use value of the site in year t_0 ,

V_{t1} = direct use value of the site in year t_1 ,

$dV_{t1,t0}$ = variation of the direct use value between t_1 and t_0 (which can be negative),

and,

TR_{t0} = total direct use revenues in year t_0

TR_{t1} = total direct use revenues in year t_1

TC_{t0} = total maintenance and presentation costs in year t_0

TC_{t1} = total maintenance and presentation costs in year t_1

Then, $dV_{t1,t0}$ should be equal or higher than $[(TR_{t1} - TR_{t0}) - (TC_{t1} - TC_{t0})]$ if the site is to retain its values.

This relationship depends also on the type of the site and on the amount of direct use it can absorb (among other uses, visits). A fragile site like, for example, a prehistoric or a Phoenician archaeological site, cannot receive the same numbers of visitors and accommodate the same types of uses than a roman theatre. Similarly, historic cities cannot accommodate too many tourists if they are not to become mono-economies.

In the diagramme shown in Annex 2, the vertical axis (OY) represents the revenues generated by the use of heritage and the horizontal axis (OX) the life of this heritage. The (OZ) diagonal represents the fragility of the heritage considered -fragility increases closer to (O). The isoquant curves A, B and C represent the relationship between revenue and duration of heritage of different fragility.

For a given level of revenue (Oy), the less fragile heritage (curve C) will have a life duration of (Of) and the most fragile a life duration of (Od). For a revenue of (Ov), lower than (Oy), the life duration will increase to reach (Ox) for the less fragile.

The higher the return on heritage, i.e. the more it is exploited, the shorter will be its life duration. Through reinforced management (protection, conservation, restoration, adaptive use, etc.), one can expect to increase the life of the site under use while keeping the same rate of return. In the above graph and for a given expected return (Y), the life duration of the site would move from (a) to (b) and eventually to (c) by investments in its management equivalent to (b-a) and (c-b) where (a), (b) and (c) are the intersection points of the curves (A), (B) and (C) with the expected level of income (Y).

There is an economic limit to this exercise: it intervenes when the management and maintenance costs of the site become progressively equal to or higher than the direct

revenues generated by the exploitation (or use) of the site. Clearly, this diagramme as well as any pure economic vision of heritage has its limits. Both consider only the use value having a direct and indirect return, the other uses as seen before, being almost impossible to quantify while these can be as important or even more than the simple economic value.

2.2.3. The Amortization of Heritage

If a site is not used, i.e. when its return is equal to zero, then its amortization remains equal to its normal routine maintenance. However, when this return becomes positive ($r > 0$) because the site is used, things change.

Under normal circumstances, the annual amortization will vary according to the needs of the site, generated by its use, its obsolescence – rather its degradation. Since it is difficult to anticipate the budgetary needs for the maintenance of a site on a yearly basis (a site is not a tool), it becomes necessary to plan ahead of time an arbitrary amount based on our forecasts of the site utilization and returns.

Economic theory shows us that the market value does not decrease equally each year. To the contrary, when a commodity begins to generate revenues, its value decreases in a progressive, increasing manner.

In the graph of Annex 3, the percentage of the value of the site is represented by the (OY) axis: it begins at 0% at (0) to end at 100% at (Y), where the curves representing amortization ($R=0$ and $R > 0$) meet the (OY) axis. The theoretical age length of a site, which must be maximal, is represented on the axis (OX), its theoretical limit being the point of junction of the curves with this axis.

The diagonal (dotted) represents the theoretical evolution of the value of heritage when not in use. It loses value normally by simple natural wear. The curve is a simplified representation of the evolution of the value of a site being used regularly: its value decreases more each year. A higher return of the site use will increase the gradient of the curve and will eventually reduce the life of the site. In other words,

$$dv(n,n-1) > dv(n-1,n-2)$$

where (dv) is the variation of the market value of a site and (n), (n-x) represent periods of use and (x) being equal to as many periods of use as considered.

This curve is a simplified representation of the evolution of the value of a site under use. Its value decreases more year after year: the higher the return of the exploitation of the site, the

faster its loss of value and the steeper the curve. One must also note that in a pure economic perspective, the market value of heritage should increase with its return, with the revenues its use generates. This is rather contradictory since we have just seen that the value of heritage decreases with its use. This paradox is due to the difference between market or use value and intrinsic value of heritage. While the first, the use value, increases with the economic returns of heritage, the second, the intrinsic values of heritage, diminish because of its exploitation and its wear.

Piero Sraffa explains this paradox when he writes:

"Let us consider the position of a tool at a given age (t) with a total life duration of (n) years. The sum of the decreases of its value through (t) years will be smaller if $r > 0$ than if $r = 0$. Thus, the sum of the remaining decreases until its value equals 0 and which is equal to its present value will be higher if $r > 0$ than if $r = 0$. Similarly, one can demonstrate that its value will be bigger if $r > 0$ and even that it will increase with every increase of (r)."

For heritage, this means that in terms of economic utility, the market value of a site is a direct function of the return of its use. For the economy, a site has value when it can be exploited with a return. This is where resides the paradox: there is a dilemma between the economic value of heritage and its intrinsic values, while its market value relies on its intrinsic values: a site that has no intrinsic values (beauty, picturesque, history, scientific, etc.) will have no market value.

This is a short cut in the reflection, at least because we are not making a difference between the intrinsic values: a site can lose its scientific values but retain most of its picturesque. However, irrespective of the type of intrinsic value, there is a direct relationship between use value and intrinsic values that can be represented as in the graphs of Annex 4.

To resolve this conflicting relationship between the two values – an increase of one leading to a decrease of the other, an equilibrium has to be sought. Heritage must not be destroyed and, at the same time, it must contribute to the economy. Therefore, the maximal economic utility of a site must not go above the point of junction of the two curves. But this is a very sketchy graph and never under real condition would the relationship between these values be so linear. It varies – and hence the form of the curves – according to the nature of the site.

3. The Relationships between Heritage and the Economy

3.1 Heritage : a propulsive or a dependant firm

A harmonious integration of heritage in the economic process requires a global view¹⁹. To reach this stage, as Fr. Perroux writes, we must start from a new reading of the Walrasio-Paretian theory of inter-dependence among agents, based on an expression of the links between prices and quantities and therefore between agents, based on a more modern reading of the relationships, taking into account the power games between groups: in our case, travel agents, hotel chains, transport companies, associations of traders, etc. and the local economy agents.

It is not necessary here to enter in a detailed presentation of François Perroux analysis of the development poles and of the propulsive firms. We shall rapidly deal with the role of the components of an economic space in which we shall consider heritage as an agent of the local or regional economic activity.

Firstly, we must recognize that the action of agents on the economic reality takes place more through groups with common interests rather than through isolated agents. In the case of heritage, we shall deal with the group of specialized agents such as travel agents, transport companies etc.

The ability of a group to influence the economy, to transform it, to act as a leader, depends very much on its relative position vis-à-vis the others in the production process and in the flows of exchange. On the other hand, the ability of the groups working in the field of heritage or in a related one depends on the presence, proximity and size of the heritage as well as on the possibilities of use or reuse of this heritage.²⁰

The indispensable presence of heritage alone is not sufficient to influence the surrounding economy. It requires firstly an economy able to absorb and use heritage: it has to be structured, offering complementarities and a variety of trades. Secondly, it needs to be strong enough not to become completely perverted by an excessive presence of heritage, while heritage needs to be protected in its use or reuse.

3.2 The Matrix of flows and the Input-Output Ratios

The integration of heritage in the economy depends therefore very much on an equilibrium

¹⁹ See more particularly: Perroux, Fr., "L'économie du XXe siècle", PUF, Paris 1969.

²⁰ Refer here to the diagramme of I. Serageldin.

between the economy and heritage. To maximize integration while protecting the intrinsic values of heritage, we must return to the relationship between the rate of return from heritage and the protection of heritage, its physical presence and its intrinsic values.

Be it a matter of planning and forecasting, economic analysis will use a matrix model of the flows of exchange to estimate and influence this relationship. This matrix will be as refined as are the data collected but to draw it, we need to define the areas to be considered in the study: what are the trades, the agents, the sectors entering into an exchange with heritage, into the composition of its economic role? What is the spatial area in which this matrix will be used?

Such matrix will represent these exchanges either in real terms or in percentages of the total flows. The latter will give a clearer picture of the weight of heritage in the considered economy. Starting from this matrix, it becomes easy to simulate and relate the simulation to the study of 'input output ratios' in the production process at which heritage participates. This will enable us to evaluate its role and weight in a given economic framework as well as to evaluate the return on investments in heritage, taking into consideration the mode of production and the terms of trade between heritage and its environment.

We can then determine the direct and indirect impacts of the use of heritage: to simplify, we shall say that the direct impacts are those generated within the site through its direct use (visits), while the indirect ones are those generated by indirect use, i.e. non destructive uses of heritage. The matrix shown in Annex 5 is a simplified representation of the flows between heritage and the economy

For each sector, including heritage, this matrix presents all the interactions, the production by sector, the purchases from the other sectors and its share in the added value and in the total production.

Table: Inputs-Outputs Flows between Sectors

Input		Output							
		A				B			C
		Agriculture	Industry	Heritage	Services	Consumption	Gross Investment	Total	Total Production
A	Agriculture	0	30	5	0	55	10	65	100
	Industry	20	0	15	20	30	15	45	100
	Heritage	10	10	0	25	45	10	55	100
	Services	20	20	30	0	20	10	30	100
B	Added value	50	40	50	55			195	
C	Total Production	100	100	100	100				

4. Two examples The World Heritage Sites of the Alhambra y Generalife in Spain and of the Cultural Landscape of Sintra in Portugal

4.1. The World Heritage Site of the Alhambra y Generalife

4.1.1. Brief Description & History

Rising above the modern lower town of Granada in Andalusia (Spain), the monumental Alhambra (The Red in Arabic) and the Moorish quarter of the Albaicín, situated on two adjacent hills, form the medieval part of Granada (See Annex 5). To the East of the Alhambra fortress and residence are the Arabic gardens of the Generalife, the former rural residence of the Emirs who ruled this part of Spain in the 13th and 14th centuries. The residential district of the Albaicín is a rich repository of Moorish vernacular architecture, into which the traditional Andalusian architecture blends harmoniously. The Alhambra was a palace, a fortress and a citadel, the residence of the Nasrid Sultans and top government officials, court servants and the royal guard.

When they occupied the place in the 9th century, the Arabs respected the Roman cities and roads, making them bigger by adding new constructions. In the 9th century, evidence from Arab texts points to new constructions inside the Alhambra, although it is thought that some kind of construction was built during the Roman period and even earlier. After the Caliphate of Cordoba, the capital of the Granada province was moved from Elvira to Granada in the 11th century, promoted by the Zirid Dynasty. The Zirids settled their court in the Alcazaba Cadima, or Old fortress, located in the Albaicín district and occupied in the 15th century with the construction of Dar-al-Horra's Palace. At the slope foot there was an important Jewish settlement, around which the city of Granada started growing. Vizir Samuel ibn Nasralla renovated and rebuilt the abandoned ruins located on the Sabikah Hill and built his palace there.

Since the 12th century, successive invasions of Almorávides and Almohades in Granada ended with fierce and bloody battles that took place in the Alcazaba del Albaicín and in the buildings of the Alhambra, which became the refuge for the local Andalusians and at times for the North African invaders.

In the 13th century, Al-Ahmar, the founder of the Nasrid Dynasty, took up residence at the Old Alcazaba of the Albaicín in 1238, though he felt attracted by the ruins on top of the Alhambra hill. Thus he embarked on the reconstruction of the building for the residence of his Court as

we know it now. The Alhambra became the residence of the Nasrid Sultans and top government officials, court servants and the royal guard. The Nasrid Kingdom became the last Islamic sultanate on the Iberian Peninsula, and its capital Granada progressively received Muslim populations forced to retreat from the Christians. The city grew with the development of new suburbs and extended its walls nearly until it was conquered at the end of the 15th century.

During these more than two and a half centuries, the relationship between the Alhambra and the city was that of a Medina and its Alcazaba (fortress). In Granada, besides the Alhambra, preserved as a symbolic mythic icon, there remain many testimonies and buildings of the Moorish period despite the unavoidable transformations that it has experienced since the Middle Ages. The inscribed monumental site is currently an artistic-historical monumental group with four clearly distinguishable zones: the Palaces, the military zone or Alcazaba, the city or Medina, and the gardens of the Generalife, all of them sitting in a sort of isolation on hill that dominates the town.

4.1.2. Inscription on the World Heritage List

The first inscription took place in 1984 when the World Heritage Committee decided the listing of the monumental site of the Alhambra y Generalife with the land that surrounds it (around 560 hectares). The decision was based on the following criteria:

- (i) to represent a masterpiece of human creative genius;
- (iii) to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;
- (iv) to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

In 1994, an extension of the site was approved by the World Heritage Committee to include the Moorish quarter of the Albaicin. This extension concluded the listing of the most important representations of the Arab period of Granada and of the end of the Arab rule over Spain. This extension however has added to the complexity of the management of the World Heritage of Granada.

4.1.3. Site Management

There are different types of cultural heritage in Spain:

- the “National Heritage” is the set of sites and monuments that belong to the Crown and that are managed by the National Heritage structure In Spain;

- the other monuments and sites that are protected, be they World Heritage or not, fall under the management of the central government and/or the autonomous regions.

The decentralization process that took place after the period of General Franco has given to the regions an important role in the management of the heritage of the country. Even though the World Heritage Convention pertains to international agreements that are the responsibility of the central government in Madrid, the protection, conservation, management and use of the World Heritage sites of Spain have been decentralized to the administration of the autonomous regions. This creates a dichotomy in the decision making process and in the implementation of the WH Convention that has led on several occasions to difficulties between Spain and the organs of the World Heritage Convention. Frequently, regions are unaware of or unwilling to abide by the Guidelines of the Convention or by its texts, while the central government has insufficient authority to force the region to comply.

In the case of the World Heritage of Granada, i.e. the Alhambra y Generalife on the one hand and the quarter of the Albaicin on the other, the situation is even more complicated:

- the monumental ensemble of the Alhambra y Generalife falls under the authority of the Junta de Andalucía (Government of Andalucía) and is managed by a Patronato that has its own administration, while
- the quarter of the Albaicin is an integral part of the city of Granada and is managed by the Ayuntamiento of Granada (the Municipality).

If the Alhambra y Generalife is managed as an integrated built heritage ensemble that has clearly defined boundaries and the visit of which falls under the usual scheme of visitors organizations: ticket, signage, guides, etc. the Albaicin is an open space available to all and connected to the city with streets, pedestrian passages and public transportation. The difficulty in the coordination of management lies in the coordination between the two and in the production of common guidelines and joint actions for their use and for tourism. Until recently, it was as if these were two separate sites. Furthermore and for some years after the inscription, the quarter of the Albaicin has not been given the needed recognition or visibility while its general state of conservation was quite poor. As for the Alhambra, its connection to the city had been lost in the early 1990s.

4.1.4. The functioning of the Site since its Inscription

4.1.4.1. We can distinguish three historical periods in the relationship between the site and the city: a first period that ends with the construction of the *autopistas* of Andalucía and the *curcumvalacion* of Granada and its direct connection to the site, i.e. circa 1990-1991; a second

that starts with the opening of the highways network and ends in the late 90s early 2000, and the present one (Annex 6).

4.1.4.2. Before the *circumvalacion* and the *autopistas*, to access the site, visitors had to proceed through the city. Cars and buses had to cross the narrow and winding streets of Granada and this forced the visitors to stop in the city. Hotels were however rare and the retention capacity of Granada limited. Tourism in Granada and the site was of a limited and quasi-exclusive nature. If the city did not benefit much from the tourism generated by the site, it was not cut from the site and the visitor accepted easily to spend time in Granada. There was retention, though with limited numbers.

4.1.4.3. What propelled the site and the city in the sphere of international destination of mass tourism is the connection of the site to the network of *autopistas* (Annex 6). Accessing the site became easy for the tourists of the coast who could then visit the Alhambra in a single day. In this second period of the modern life of the site, tourism rapidly increased and reached a high of more than 2.5 million visitors a year. A large parking space for cars and buses together with a new ticket gate were built in the hill, changing thus the access to the site from the gates of the walls facing the city. This has fully cut the geographical link between the site and the city (Annex 7). The growth in the numbers of visitors to the site was not met with accrued retention in Granada. The visitors came more and more in organized tours that included the Alhambra in a package, allocating to the visit part of a day and seldom offering the possibility of a night stay in Granada. The result was an increase in revenues to the site, but a much more limited impact on the city. All in all, the quality of tourism decreased and expenditures by visitor fell. This impacted negatively on the offer of services and Granada and the site entered in a negative spiral, with an ever-decreasing quality in the use of the site, in the set objectives of its management, in the relationship with the city and in the result to the economy of Granada. Still, the quasi totality of tourism to the province of Granada was generated by the Alhambra.

4.1.4.4. The third period started in the late nineties, with a desire of UNESCO, the Ayuntamiento de Granada and the management of the site to reverse the trend. It begun with the realization that the Alhambra y Generalife could not be understood without the city. This has led in the mid nineties to the addition to the World Heritage site of the *Barrio del Albaicin*. The link with the city was thus recreated. In the process of the revitalization of the Albaicin in the late nineties, the connection of the barrio with the monumental site, was seen as natural and necessary. It took some time, but small actions begun to pile up: the pedestrian Camino

del Rey Chico was restored and opened thus the possibility of visits to both sites together; also, a services on municipal micro-buses was launched to open the Albaicin to public transport and these buses also connected the monumental site with the city.

4.1.4.5. Then, came the *Bono Turistico Unico* (Annex 8) through which a visitor could buy a day of public transports with visits to the monuments of the city and to the Alhambra. This further increased the impact of the site on tourism in Granada and reinforced its relationship with the City. Combined together, all these small actions brought new investments in quality hotels and restaurants, particularly in the Albaicin, offering thus the expected quality in lodging and in restoration to the exclusive tourism expected to visit the city for more than one day. The first hotel to open, the Casa Morisca, was in an charming Morisco house. Others followed it. The Casa Morisca was immediately awarded the Europa Nostra prize for its quality. Now, the relationship between the monumental site and the rest of the city is developing positively thanks to the improved quality of tourist offer.

4.1.4.6. As for the living conditions in the Albaicin, they improved progressively until the quarter returned to its former function: that of being a lively, mixed place where the visitor could stroll safely at night and the residents lead a comfortable and quiet life in their Moorish houses. This necessitated a long revitalization process in which the local population was mobilized and that used an array of tools:

- establishing a technical office of the Municipality specifically dedicated to the Albaicin in which it was housed: the role of this office was to provide technical assistance to the inhabitants of Albaicin for their restoration or improvement works and for any construction or addition they wish to make; it also had the role of implementing town planning and architectural regulations relevant to the quarter,
- producing a detailed map of the quarter and distributing it widely,
- organizing the opening of monuments – religious or others – to the public,
- improving sanitation, garbage removal and the burial of the infrastructure grid,
- connecting the quarter with the rest of the city through the use of adapted micro-buses and reorganizing the traffic,
- finally and most importantly, organizing awareness campaigns and providing assistance to the local NGOs and associations of citizen of the Albaicin.

4.1.4.7. The reconnection of the Albaicin and the monumental site of the Alhambra y Generalife was improved by opening a special route of min-buses between the city, the quarter of the Albaicin and the visitors' gate of the Alhambra. This enabled visitors to stop in

Granada and access with ease all the monuments of the city by taking this microbuses route. Later, a system of single-ticket has been put in place for all the monuments of the city that also provided access on a daily basis for all the public transport of Granada. As for the Alhambra y Generalife, it reorganized its ticketing system to facilitate the visits.

4.1.4.8. All these actions in favour of the Albaicin and despite the lack of a proper management plan have improved the economics of the quarter without harming its integrity and its character. Though the value of lands and *Carmenes* (villas with gardens) has increased and upmarket hotels and restaurants have opened, the mixity of use and its typical character of a living place remain strongly anchored: university residence, a research centre, monasteries, churches, a mosque, small shops and low and medium income residents mingle together to keep to the Albaicin its special flavour. Mostly, this is due to the involvement from the very beginning of its local inhabitants in its revitalization process.

4.1.5. From 2002 Onwards: the Economic Analysis and its Results

Between 2002 and 2004, we have conducted an economic analysis of the functioning of the World Heritage site of the Alhambra y Generalife and of its relations with the economy of Granada and its region. In this study, we have applied the commodity approach: we have considered that the site is a production tool that produces commodities and enters into economic exchange with its surrounding economy. On this basis, we have analyzed:

- The **internal efficiency** of the site as a tool of production, its efficiency in terms of conservation of the capital and in terms of returns;
- The **external efficiency**, i.e. how much does this site contribute to the flow of exchange in the surrounding economy and to the creation of employment and resources.

If the first part has proven difficult to undertake, the second has been much more complex. In both, the reason was the same: the accounts of the site were not geared towards such a vision and did not provide easy access to the required data and information.

4.1.5.1. Internal Efficiency

The World Heritage Site of the Alhambra y Albaicin is the most visited site of Andalusia and the one that has kept its numbers of visitors growing in spite of economic or political crises (Annex 9) at a much faster rate than any other place in Andalusia. The attraction it has on foreign and national visitors remains unmatched. Due however to a lack of management vision, this pressure of visitors took its toll from the site, particularly its most fragile part that is, at the

same time, its most visited one; the Nasride palace (see Annex 15). Spaces were progressively closed to visits for lack of restoration, visits became unattractive because of the increasing crowd in the palace while several other important parts of the site were neither properly used nor made attractive to visitors. The site had fallen under the unofficial control of the tour operators desirous of rapid and increasing profits through short visits: the Nasride palace was the crown of the Alhambra and was to be visited by all the groups that came.

We have distributed all the area listed as World Heritage by ownership and use in a matrix of the different types of space (see Annex 10 & 11). We have then introduced in each box of the matrix the inputs expressed in Euros and compared this with the superficies of these areas (Annex 12). This has provided us with a good picture of the operating of the site, of the production process and of its degree of efficiency (Annex 13 presents the budget, expenditures and annual results between 1990 and 2002).

We went then into analyzing resources allocations with these production capacities and returns to finally point at the discrepancies and the misuses of the site both in economic, conservation and presentation terms. The two views matched: the economic return was weak where conservation and presentation were poor, showing therefore a lack of efficiency and a need for added investments in conservation and presentation, while funds were basically used to maximize its actual mode of production, but not to improve or develop it. It also pointed at the non-use of several possible circuits forgotten by the management because these were not in demand by the visitors.

This analysis highlighted a situation where a reputed World Heritage site continued to live on a single function: that of mass tourism, the revenues of which represented more that 85% of the total income of the site. Only 5% of the site was used for this function, while the remaining 95% of heritage land and monuments was not exploited nor presented (Annex 10).

Concurrently, the management of the side did not fully use the derivate products of heritage tourism to produce additional resources such as souvenirs, guide books, rental of space, restaurants and coffee shops, rights on image and others (Annex 14).

Finally, the presentation of the site itself concentrated on the most visited and known monuments, notably on the Palacio Nazari and on the Alcazaba (the latter basically for the view it offers on Granada) twhile The Palacio de Carlos Quinto, itself a major monument of the history of Spain and of the Renaissance was open to visits at no cost, thus becoming neglected by the visitors who sought more “romantic” and market valued places (Annex 15).

The recommendations we came out with were conceived to meet the following objectives aiming at improving the efficiency of the process of production of the site:

- *To reduce the dependency of the site on massive tourism*, by developing alternative uses of its heritage and the development of other sources of income generation such as the right of image, the production and marketing of agricultural products such as vegetable and olive oil, the rental of spaces, the creation of more pay areas, etc.
- *To relieve pressure of visitors from the most fragile parts*, by creating alternative routes of visits and developing those areas and monuments forgotten until now and by introducing higher entrance fees for certain parts.
- *To improve the presentation and understanding of the site* by the visitors, by creating an interpretation centre through which the visits would begin, by making the visits more comprehensive and thematic, by integrating nature (orchards, water system, woods and olive fields) in the visits.
- *To reinforce the relationship between the site and the town* in terms of responsibilities and revenues, by involving the owners of the hotels and houses located within the site in the financing of its management and the city in the maintenance of its roads and streets and, similarly, by creating visits combining the site and quarters and monuments of the city.

4.1.5.2. External Efficiency

We have focused our analysis on the direct impact of the site in terms of employment, contracting and of tourism. Because of lack of time and resources, we did not study the impact of the presence of the site on transportation and shopping in Granada and on the image of Granada and of its products. The results show that the site is:

- the major actor in the development of tourism in the Province of Granada and certainly a major one as well in Andalusia and the country (see annexes 9 & 14);
- it is a major actor in the life of Granada that enters into economic exchanges with its various sectors and stimulates its tourism;
- it is a creator of employment and a provider of contracts to several of its companies (see Annex 14).

Analyzing the direct impact of the site on the economy, we have studied its procurement of goods, the contracting of companies, the hiring of labour and the employment it creates. The major findings show that the site is a major actor in the economy of the place:

- The financial flow from the site to the economy has reached a total volume of

respectively 7.08 and 13.3 million euros in 2001 and 2002, the largest components being by order: personnel, equipment and materials;

- In 2002, the Patronato also bought from its own resources the Carmen de Los Catalanes for more than 8 million Euros;

This flow of financial resources is mainly directed towards Granada, with more than 50% each year of the total outflow. The rest is mainly distributed between Andalucia and the rest of Spain.

By type of activity, the sector that interacts most with the site is construction (more than 50% of the flows) followed by that of trade and transforming industries.

4.2. The World Heritage Cultural Landscape of Sintra

The second case is that of a landscape and of a territory in which heritage is inscribed but in a disseminated manner. Contrary to the previous example that was a well-delineated monumental site, a cultural landscape, a territory has no controlled access and its visits cannot be recorded with precision. Other techniques need to be used to study its role in the economy and its functioning.

4.2.1 Cultural Landscape and Territory

Cultural landscapes can be defined as any geographical area that has been modified or influenced by human activity, or at which is given a special cultural value. A cultural landscape is composed of:

- Natural elements;
- Tangible cultural elements be they built or archaeological remains, often associated with intangible cultural elements such as practices, beliefs, traditions, living modes, etc... These cultural elements are the defining factors of a cultural landscape;
- The impact of human activity on nature.

The importance of the concept of territory is increasing nowadays together with those of identity and particularism, ethnicity and cultural specificities of populations. It is becoming a new tool for planning and managing. Geographers often qualify the territory by its legal ownership: the national territory for example, or through a natural or cultural specificity: mountain territory, linguistic territory. Whatever its nature, a territory is defined by its geographical limits or borders. Borders delineate an administrative territory, while a natural or culturally defined territory is inscribed within geographical, natural limits.

Landscapes, cultural landscapes and territories are geographical spaces that are intimately connected to each other and that often overlap. Whatever the situation, the management of one will impact on the other. It is impossible to separate a cultural landscape from its larger territory and its management cannot take place without that of the territory in which it is geographically and often administratively inscribed.

4.2.2. The Cultural Landscape of Sintra

4.2.2.1. The World Heritage Cultural Landscape of Sintra sits within the territory of the Municipal Council of Sintra, at 20 km Northeast of the city capital of Lisbon. The perfect harmony between its natural and cultural values and its location and role in the romantic movement of the 19th century have brought the site (mountain, villas, palaces and the city of Sintra with its national palace) to be inscribed on the World Heritage List of UNESCO as a cultural landscape in 1995. The criteria and the description used for the listing explain its values:

- Criteria ii : to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;
- Criteria iv : to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;
- Criteria v : to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change.

Brief Description

In the 19th century Sintra became the first centre of European Romantic architecture. Ferdinand II turned a ruined monastery into a castle where this new sensitivity was displayed in the use of Gothic, Egyptian, Moorish and Renaissance elements and in the creation of a park blending local and exotic species of trees. Other fine dwellings, built along the same lines in the surrounding *serra*, created a unique combination of parks and gardens which influenced the development of landscape architecture throughout Europe.

4.2.2.2. The inscribed property has an area of 946,0000 hectares and is surrounded by a buffer

zone of 3,641,000 hectares. The whole is located in the territory of the Municipality of Sintra that has a total area of nearly 320 square km and a population of 430,000 inhabitants. The territory of the Municipality is composed of a mountainous area, a plain and a coastal zone. From a rural area that produced quality agricultural products and that received vacationers from Lisbon and some tourists, the Municipality of Sintra has partly lost its character and its autonomy because of the high urban pressure of Lisbon. It has become more integrated in the larger urban ensemble of Lisbon and its economic activities are changing.

4.2.3. The Economics of the Territory and the Management of Heritage

4.2.3.1. It is in this situation that the President of the Municipal Council of Sintra asked us to contribute to the work on the management plan of the site and on its integration and that of tourism in the economy of the region: this has necessitated the conduct of an evaluation of the conditions of the site in the light of the World Heritage Convention, the study of its impact and that of tourism on the economy of the territory. The work was concluded by a set of strategic recommendations and sectoral proposals to improve the management of heritage and tourism and their integration in an overall development plan. In doing so, we undertook the following:

- Overall study of the physical planning of the territory from the point of view of the economic activities and development, its potentials and its natural and cultural wealth and recommending solutions to better integrate heritage and tourism;
- A detailed study of the cultural landscape of Sintra from the point of view of the World Heritage Convention and the Guidelines for its implementation, with recommendations to improve its protection, management and use;
- A detailed study of the tourism sector in Sintra with a view to improve its returns and disseminate it over all the territory of the Municipality.

4.2.3.2. The Economy of the Territory and its Planning. Economic activities and growth in Sintra vary according to their location and proximity to Lisbon and to the roads network of Portugal. The territory of the Municipality can be divided in four zones, each has had a different rhythm of growth. They are: (i) the coastal plain and the historic centre; (ii) the central zone that stretches from the town of Sintra to the northern border of the Municipality; (iii) the North-eater part of the Municipality; (iv) the South-Eastern zone that is meeting a strong urbanization (cf. Annexes 16 & 17).

4.2.3.2.1. *Zone 1, the coastal plain* includes the cultural landscape area that is inscribed on the World heritage List. It is still a dynamic agricultural area, not very populated, with a density of 1.3 families per hectare, but is rapidly developing a tourism led urbanization process with seasonal housing and secondary residences that are degrading the landscape. It is the major tourism area of Sintra and receives the largest share of public investments for its infrastructure and its tourism and cultural amenities that are the most important of the territory.

4.2.3.2.2. *Zone 2, the central zone* is somehow forgotten by the authorities. Tourism is underdeveloped but has interesting potentials. It is underpopulated with 6,100 families and a density of 1.6 families per hectare. It will be under the influence of the industrial corridor Sintra-Terrugem that runs north from the city of Sintra to that of Terrugem. Important infrastructure investments took place to improve the road network.

4.2.3.2.3. *Zone 3, the Northeastern zone* is varied. It contains a very picturesque area with agriculture, quarries and stone and marble works. The external road-belt of the Lisbon ensemble runs through its southern part. The construction of the highway junction between Campo Baso and Casal de Cambra will certainly accelerate its urbanization.

4.2.3.2.4. *Zone 4, the Southeastern zone* has known a rapid urbanization in Queluz that is becoming a suburb of Lisbon. According to the census, its resident population has grown from 41,800 in 1960 to 290,000 in 2001 and represents now 80% of the Municipality population. This densely inhabited region concentrates on its area most of the economic basis of Sintra.

4.2.4. The Rapid Transformation of the Territory.

4.2.4.1. As could be seen from above, the territory of the Municipality of Sintra is in a state of complete transformation of its economy and functions: rapid urbanization, particularly in its South-eastern area, creation of an industrial corridor in its central zone from South to North, encroachments of constructions in the rural landscape in all its territory, change in the typology of architecture and of its relation with its environment through the intensification of semidetached housing and pavilions, change of the structure of the economy through its integration in the overall urban economic ensemble of Lisbon.

4.2.4.2. These changes are increasing and impacting more and more on the overall development of the territory. Of the four identified zones, the North-western one is the most endangered of losing its character, while the South-eastern one is definitely becoming an

urban area more and more integrated in the greater ensemble of the capital city of Lisbon. It will progressively lose its functional connections with Sintra. The agricultural production of Sintra that was reputed in Portugal is decreasing and the identity of the territory is being lost. Moreover, the loss of quality and picturesque of its landscape and rural areas will lead to diminishing returns from tourism to the benefit of other areas close to Lisbon such as Cascais.

4.2.4.3. The industrial corridor foreseen between Sintra and Terrugem would reshape the present protection design of the World Heritage site. Moreover, this industrial corridor could expand to cover part of the tourist zone at its west and thus degrade the tourist potential of the territory.

4.2.4.4. Sintra and the Government have invested sizable amounts for the protection and conservation of the historic buildings and of the parks of Sintra as well as for the infrastructure of the territory. Would the returns from tourism diminish, these investments would lose their role in the economy while the maintenance of heritage would not be guaranteed, bringing therefore Sintra in a downward spiral. Already, the investigations conducted show a loss of image and of interest in Sintra except from visitors coming to Lisbon and in search of a one-day trip. Tourism and the development of Sintra were not based on a clear vision or strategy and the regional physical plan prepared for the territory did not integrate tourism and heritage in its proposals, though these could generate important revenues to the Municipality and to its population.

4.2.5. Methodology and Proposed Actions

4.2.5.1. From this assessment, it became evident that there was work was to be undertaken along three lines, integrating the heritage and tourism management in the physical and economic planning of Sintra to cover the whole territory. These three avenues were:

- Integration of the use of heritage and the tourism sector in the regional strategy of Sintra,
- Protection, improved presentation and harmonious use of the World Heritage site of Sintra and of all its other cultural and natural heritage,
- Developing a strategy adapted to the realities of Sintra and that takes into proper consideration its tourist potentials that is to be better integrated in the local economy.

The above set of avenues implied the adjustment of the regional strategy and the preparation of a vision and a heritage and tourism strategy, the main lines of which are presented in the following paragraphs.

4.2.5.2. The Regional Strategy

- Promoting and devising a regional protection strategy that covers all the territory and not only the World Heritage landscape, and that concentrates particularly on
 - The natural environment, notably the woods and forests,
 - The built environment,
- Within this strategy, ensure the active participation of the various stakeholders and conceive fiscal measures to encourage the development of upmarket quality agricultural activities and facilitate their marketing,
- Devise and implement urban planning regulations that would enable the control of the semi-detached and pavilions housing schemes and ensure the esthetical compatibility of the new constructions with their traditional environment,
- Undertake public investments and works to reinforce the input of tourism in the economy while ensure a better protection and an adapted use of Sintra's heritage, whether World Heritage or not.

4.2.5.3. Threats on the World Heritage Cultural Landscape. The World Heritage of Sintra is in danger of severe degradation that could obliterate all the advantages of its presence and the returns on the investments Sintra had done for the protection, conservation and management of its heritage. The risks of degradation are due to the very nature of Sintra's heritage, that of being a cultural landscape, thus dynamic and evolving. Weather and the environment affect the buildings and monuments while the uncontrolled growth of vegetation changes the perspectives; urban pressure and the change in the economic activities destroy the landscape of the buffer and transition zones; uncontrolled tourism pressure and the complexity of the protection and management institutions make it very difficult to keep to the place its intrinsic value (see 4.2.2.1 above). The first set of recommendation had to do with the management of the site:

- Revise the limits of the World Heritage Site to improve its management:
 - Enlarge the limit of the zone to adjust it to the requirements of appropriate management, coherence and integrity,
 - Enlarge the limits of the buffer zone to the South,
 - Reduce the limits of the transition zone, taking into consideration the development of the industrial corridor between Sintra and Terrugem and to adjust it as well to the limits of the Natural Park of Sintra-Cascais;
- Control and guide urban pressure:

- Watch closely the new urban development schemes in all the territory to avoid the degradation of the landscape, its hills, the coastal plain and its perspectives,
- Prevent the construction of ensembles of pavilions, of semi-detached houses and of large residential schemes,
- Develop stricter measures for the buffer zone within its new proposed limits (quality of urbanization, building typology, integration within the environment);
- Integrate heritage in a sustainable development vision and strategy for Sintra as detailed in the recommendations on the overall strategy and on tourism;
- Provide support to the development of a tourism that respects the heritage values:
 - Avoid overexploiting sites, parks and gardens by reducing the numbers of visitors at a given moment and by better distributing the visits over the day,
 - Improve the quality of visits amenities (landscaping the parking areas, displace the parking areas that are too close to the sites, reduce traffic near and around the monuments, produce a good graphic identity for the site and for signage),
 - Bring the tourist offer to the level of quality of World Heritage status in all the territory of Sintra;
- Diversify the sources of funding of heritage conservation and management:
 - Work on developing a public/private partnership particularly with those involved in tourism,
 - Replace the direct grants scheme for restoration or maintenance of houses by indirect financial help (reduction of taxes, fees, etc.),
 - Implement a hospitality tax (per night of occupancy) to cover additional promotional costs,
 - Promote the income generating reuse of heritage buildings;
- Ensure an efficient coordination between all responsible for the protection and management of heritage:
 - Reactivate the consultative scientific committee of the World Heritage site,
 - Install a consultative body of residents and owners,
 - Constitute a single unified information centre for the visitors, research, archiving and the promotion of Sintra.

4.2.5.4. *In the Tourism Sector:* detailed recommendations have been made since it is this

sector of activity that will stimulate the good use of the cultural and natural resources of the region and that could bring improvements to the reallocation of resources within the region. A fragile and unique cultural landscape, its conservation and restoration are costly and difficult but, if well used, could generate important resources for Sintra. To do so, its tourism potential should be maximized while taking the following into consideration:

- Tourism use should not destroy the World Heritage Cultural landscape of Sintra;
- Tourism and its economic returns must be disseminated as much as possible in all the territory of Sintra.

To do so, Sintra should be promoted in target markets of potential visitors that meet the specific conditions of Sintra must be identified and covered. These target markets are:

- Upmarket tourists with a high spending potential and who would serve as an example to the other and less wealthy categories to come and visit Sintra,
- The group of visitors situated just below the upmarket one, but above the average visitor represent an important source of visitors and expenditures,
- The average category visitors is not the priority target of Sintra, but can become a solid clientele that will contribute to the returns of tourism in the rural areas of the territory.

Together with these three categories, Sintra has various assets to attract special clienteles that would enhance its image and reinforce its specificity while increasing its tourism revenues and disseminating these in its region:

- Artists, writers and their clients and amateurs,
- Golf players, already coming to Sintra, but in limited numbers,
- Hikers looking for easily accessible hikes from Lisbon,
- Horseback riders (thanks to the presence in Queluz of the internationally reputed Portuguese School of Equestrian Art)
- Surfers thanks to the favourable beaches of Sintra.

The image of Sintra and its place in the world of tourism should be improved through a prospective marketing policy. This requires the preparation of a tourism strategy the priority of which should be the enhancement of Sintra's comparative advantage: its World Heritage Cultural Landscape. Increasing visitors satisfaction and experience requires making the Landscape more attractive and picturesque and increasing the average duration of stay. In this respect, establishing a "Sintra Pass" is a must.

Related resources should be developed as well. If its the monument and the picturesque that

attract the visitor, the related resources are what make the visitor wanting to stay longer and come back. The cultural resources of Sintra deserve to be modernized and improved: hotels and rooms, restaurants and cafés, souvenirs, local products, cultural amenities and events, night life and others, all deserve to be worked on.

Rural Tourism is useful to open up those parts of the Municipality that remain untouched by the economic development taking place in Sintra. Rural tourism can benefit from the hikers, horseback riders, bed and breakfast system, small inns and camping tourism. This rural tourism can also contribute to revitalize a certain type of agricultural activities.

4.2.5.5. Global Recommendations

- To implement the above, we recommended the following set of recommendations:
 - Reinforce the tourist board of the Municipality of Sintra
 - Adopt a tourism development plan
 - Man and equip a technical directorate for tourism
 - Reinforce the role of the tourism office of the Municipality
 - Install a hospitality tax
- Improve the marketing of the tourism offer of Sintra and its visibility through
 - Direct participation of Sintra in tourism fairs and exhibitions in Portugal and abroad rather thzn through the national institutions
 - The inclusion of Sintra as an independent site in the tourism guides published in Portugal and abroad
 - Devise a multilingual public relations policy
 - Produce professional quality CD Roms and DVDs on Sintra presenting the tourism and cultural amenities of the place
 - Reshape and improve the web site.

5. Conclusion

Since its inception in the Greek antiquity, the concept of heritage has followed several directions, all with an economic component. Cultural heritage – and natural heritage – were conceived after the Renaissance period and came to life under the French Revolution. In the 19th century, begun the thinking on universality that has brought the notion of World Heritage in the 1970s. This increased visibility and the appropriation of and quest for World beauty and picturesque have propelled the World Heritage in the arena of tourism and of market

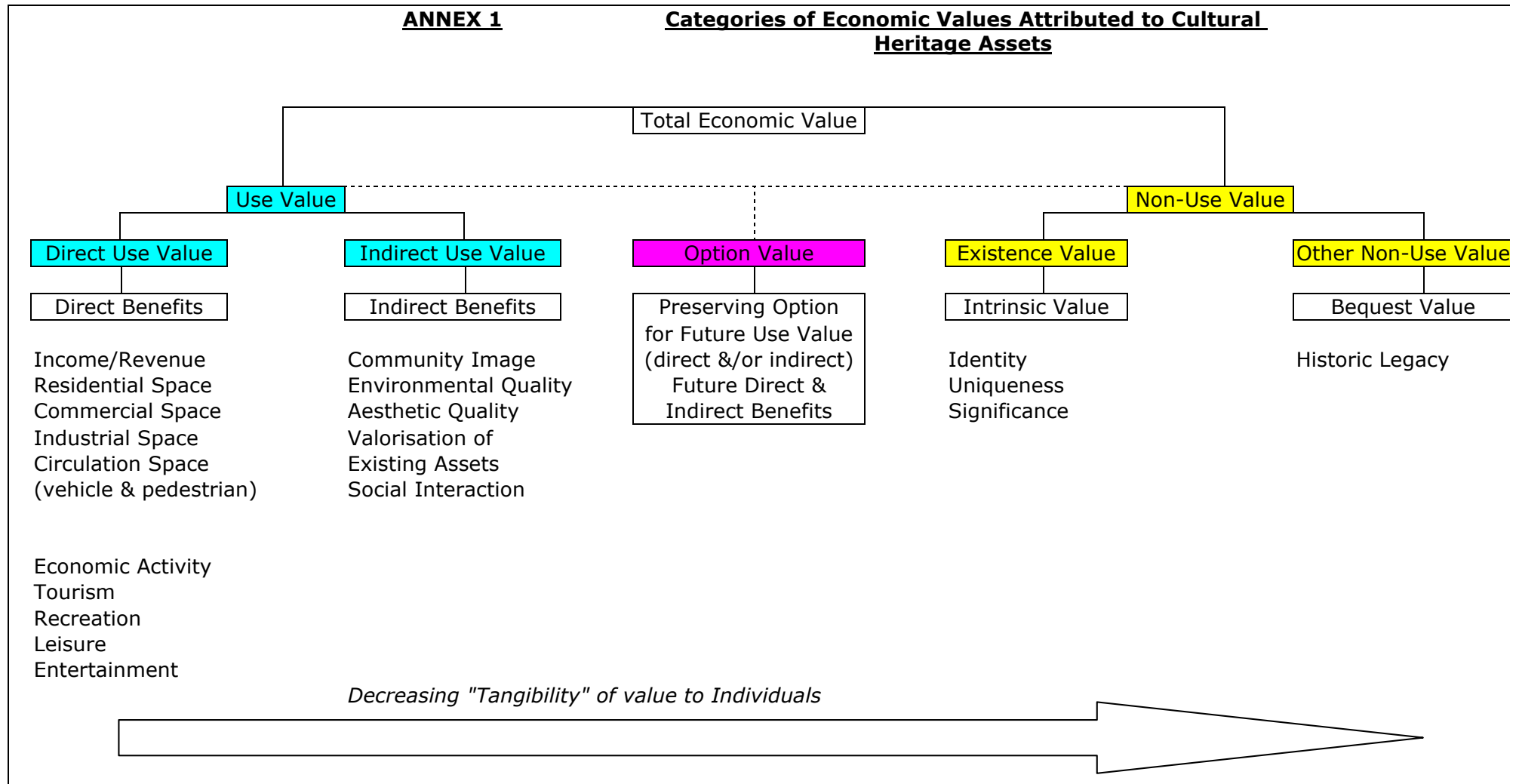
economics. If before, it was natural to consider that cultural heritage, placed under the protection and management of the State, was a social good that the State had to protect and restore at all costs for the benefit of the citizen, it has become a market commodity that is sold, rented and consumed by the visitors and that is considered as an income generating commodity.

While this important change in its nature and role does not and should not obliterate the historical, social and cultural functions of cultural heritage, it imposes on us the use of a different method of economic analysis to enable us better protect it and use it without destroying its intrinsic values.

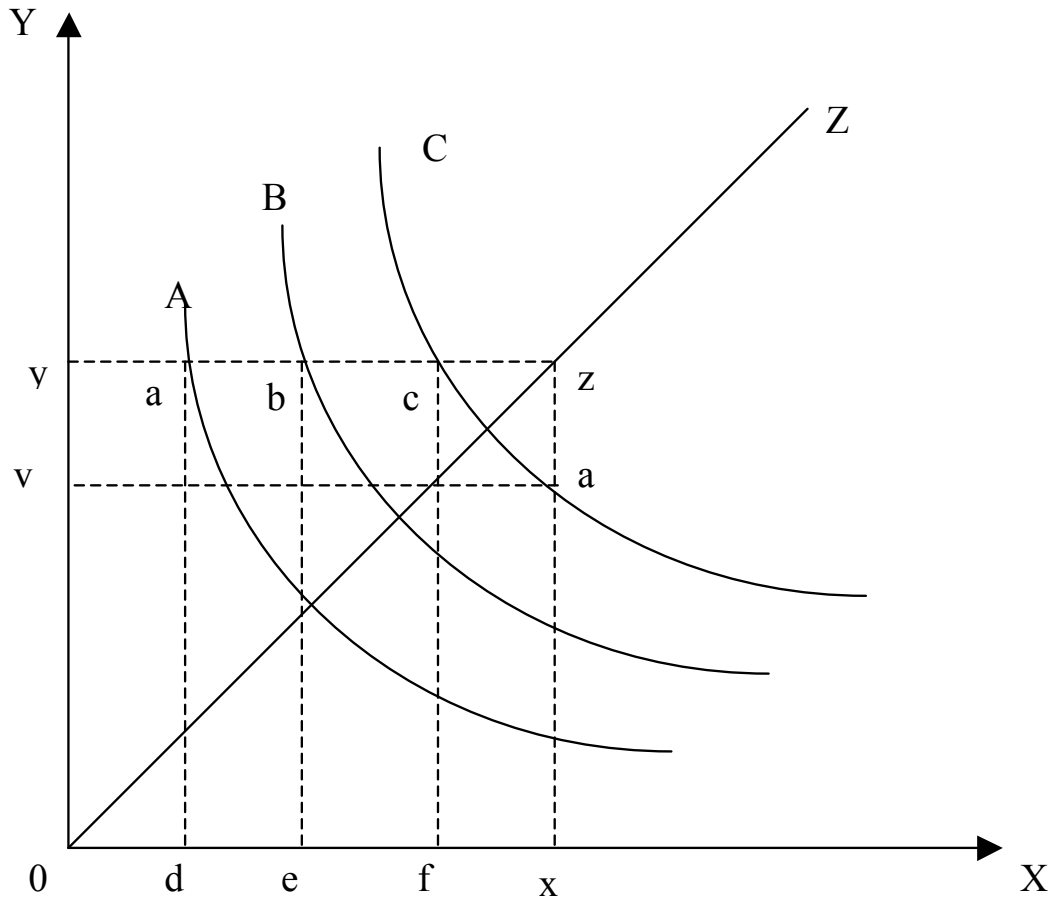
ANNEXES

ANNEX 1

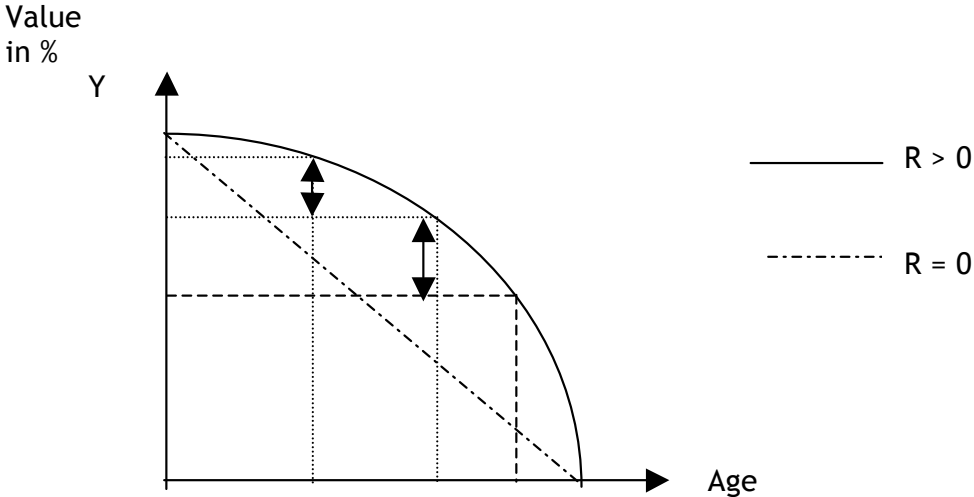
Categories of Economic Values Attributed to Cultural Heritage Assets



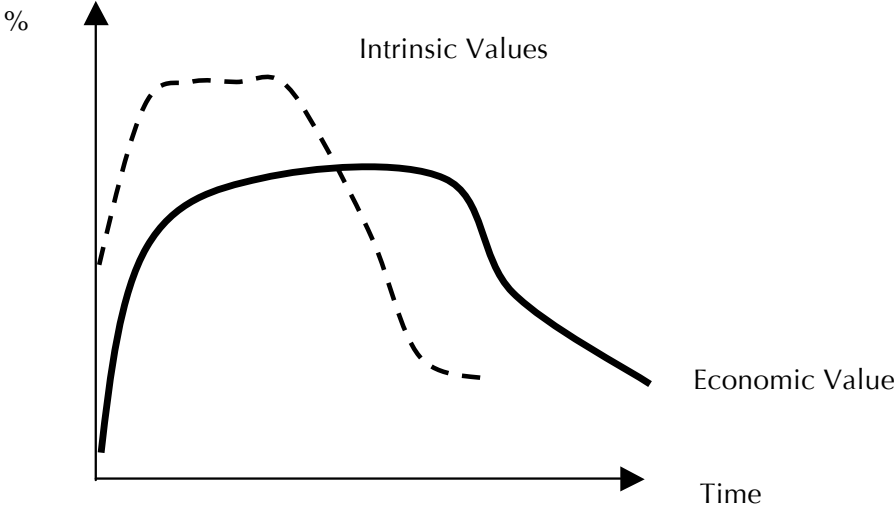
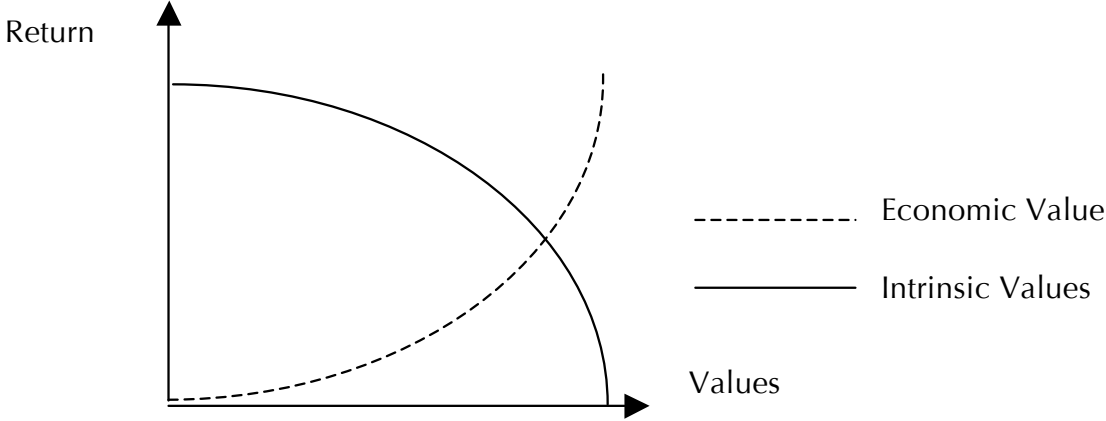
ANNEX 2 - Relationship between Fragility, Return and Life of Heritage



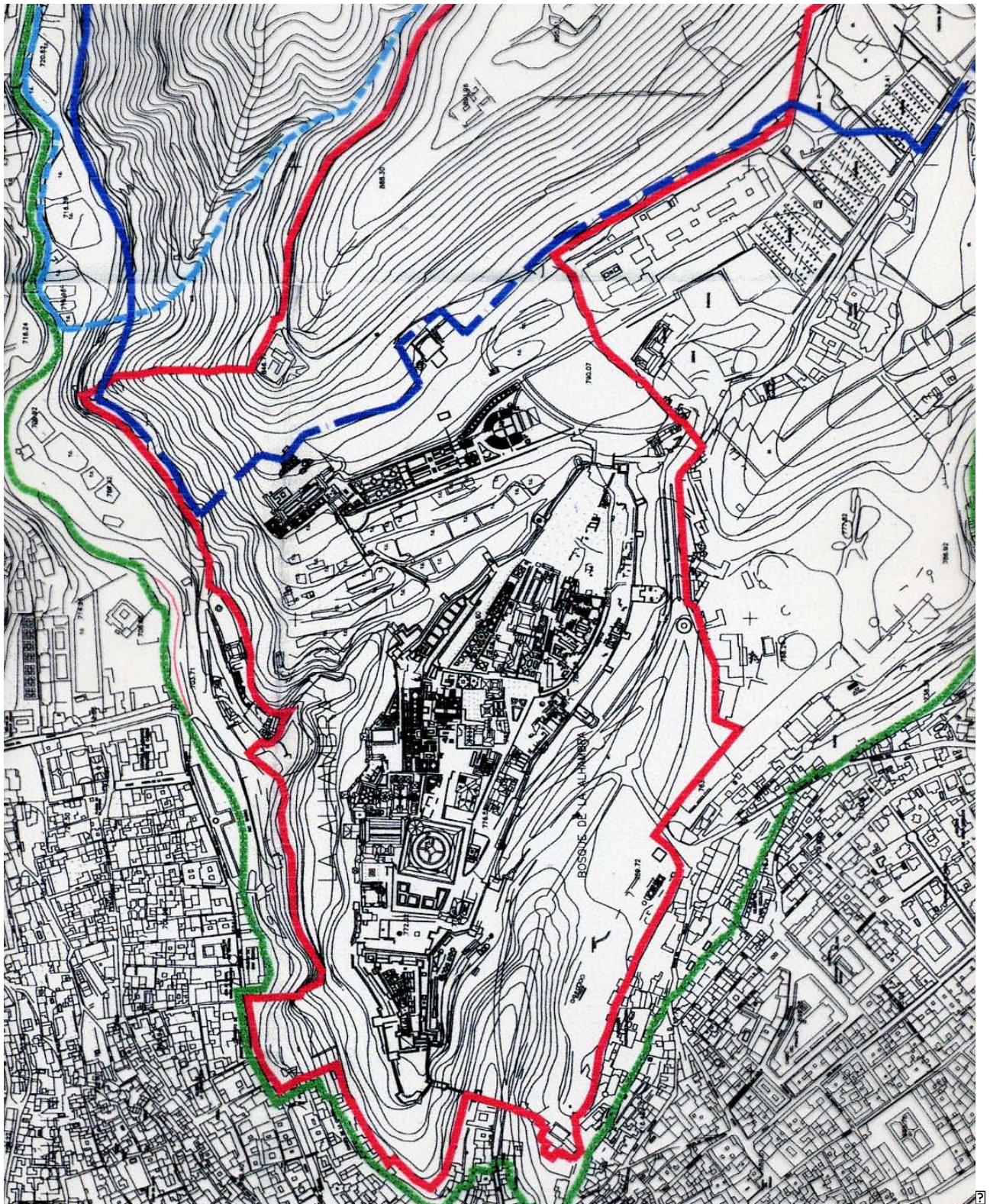
ANNEX 3 - Amortization process



ANNEX 4 - Economic Values versus Intrinsic Values



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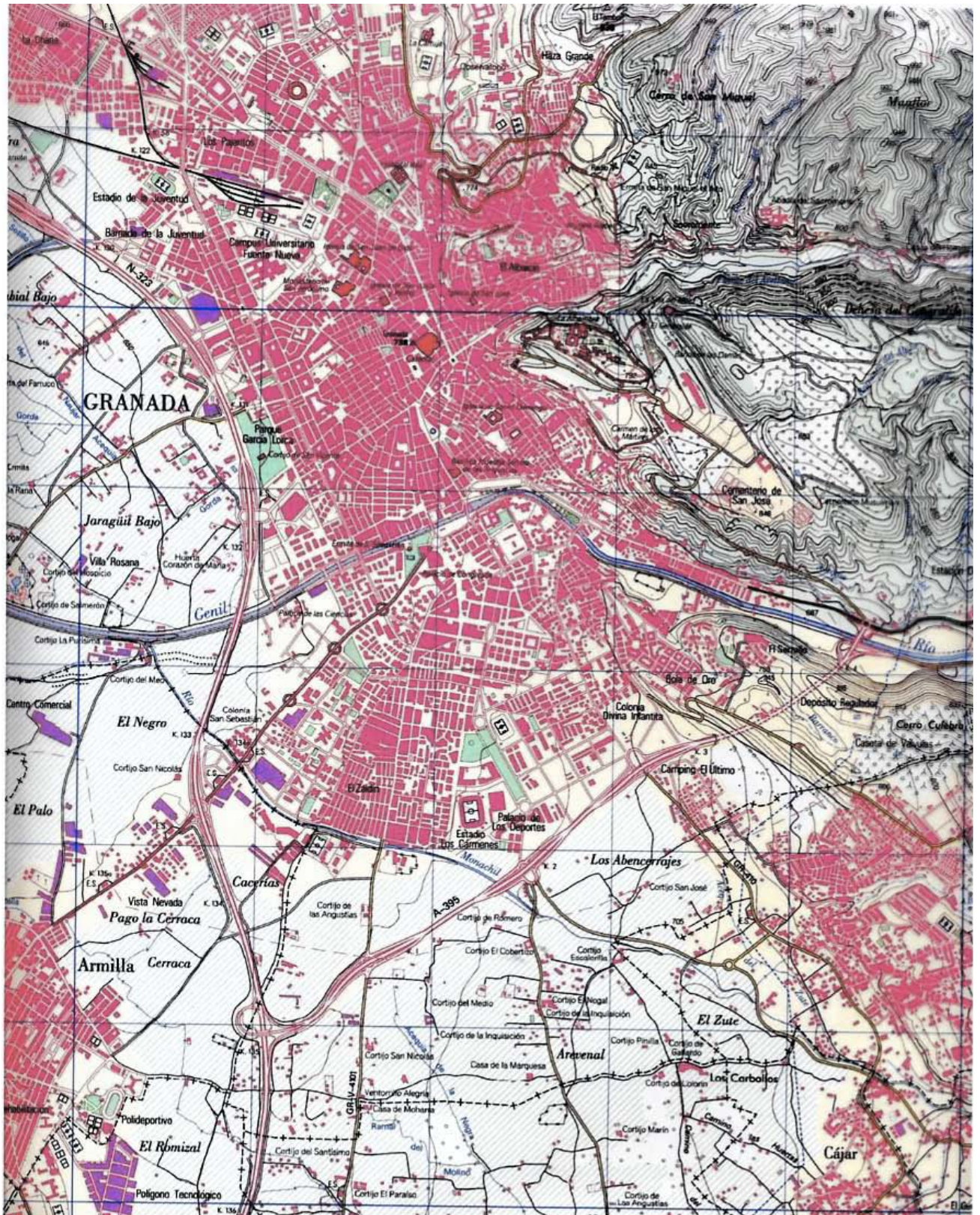
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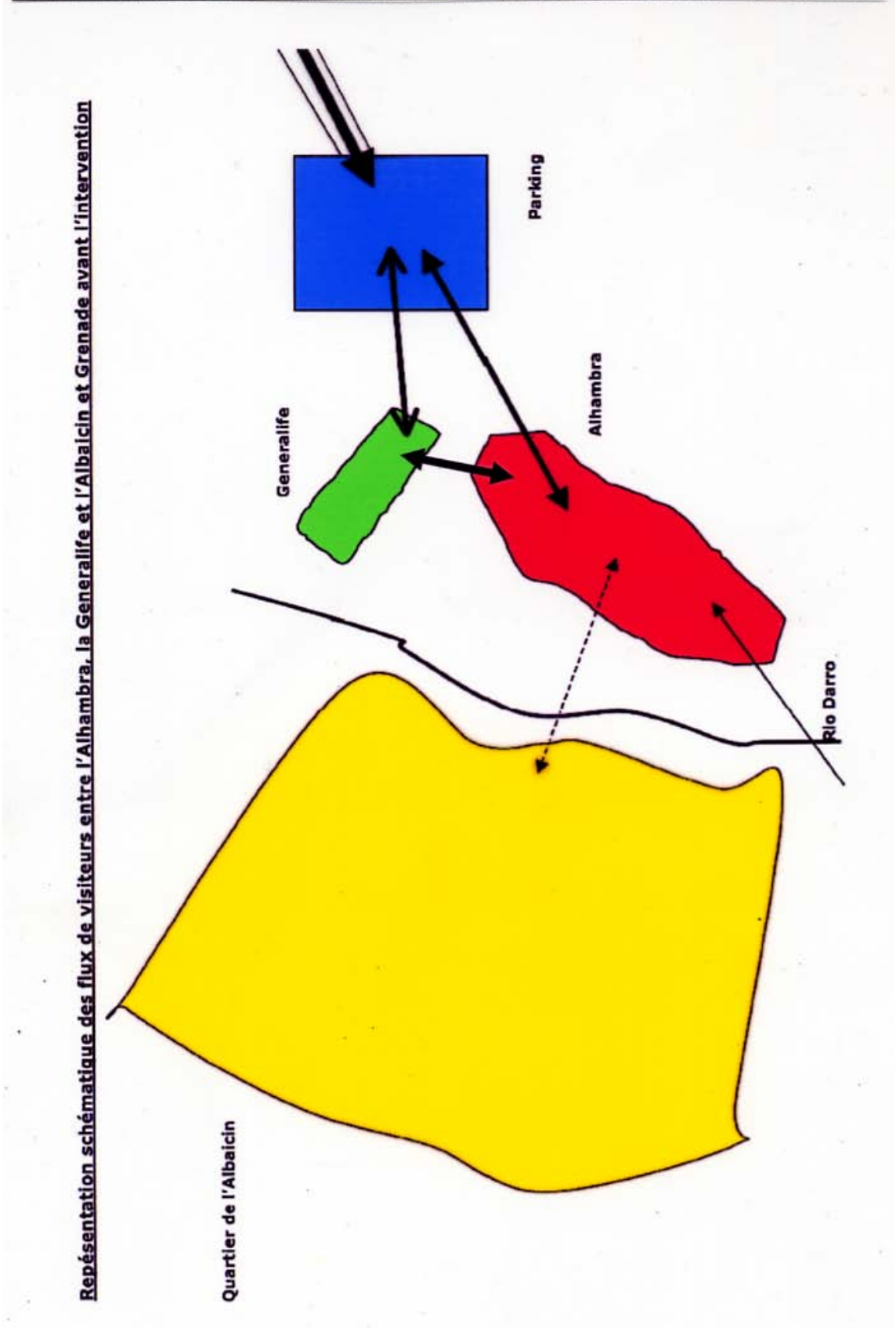
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ANNEX 6 – The Changing Pattern of Accesibility



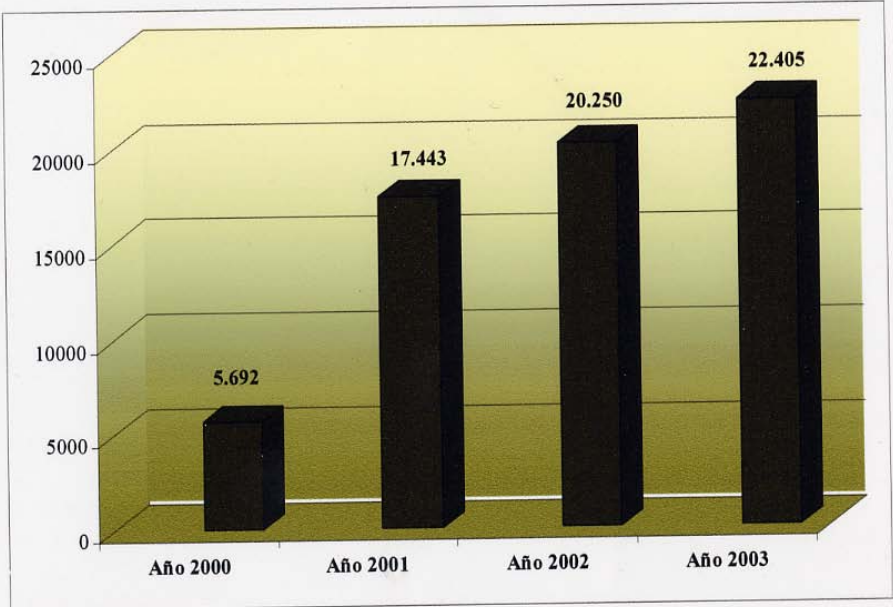
ANNEX 7 - Flows of Visitors between the City, the Monumental Site and the Albaicin

Flux des visites dans l'Alhambra et entre l'Alhambra et la ville de Grenade



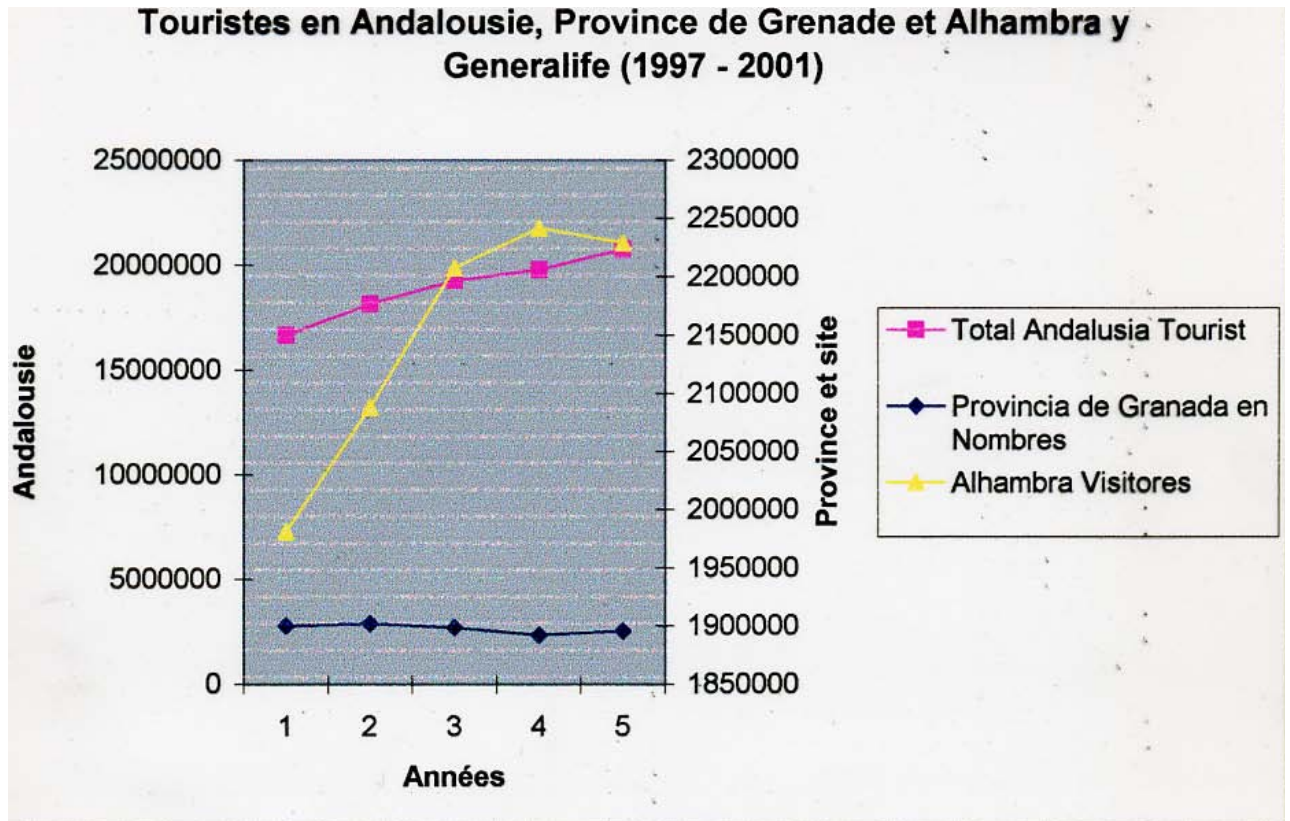
ANNEX 8 – Evolution of the Use of the Single Tourist Ticket (Bono Turístico)

Evolución Interanual del Bono Turístico



Fuente: Elaboración propia. Datos obtenidos del Sistema Informático de Gestión y Venta de Entradas a la Alhambra (BBVA y Venta Directa).

ANNEX 9 – Flows of Visitors in Andalusia and at the Alhambra y Generalife



ANNEX 10 – Matrix of Areas by Functions

Propiedades	Superficie	Función	Superficie	Uso y tipo	Superficie	subtipo	Superficie	Superficies											
								Superficie total	Cerradas	Parcial	Abiertas								
ÁREAS	5.142.699,80	PATRIMONIAL	208.169,62	MONUMENTOS	100.007,16	na	na	Muy Frágil	12.677,45	2.415,59	4.098,97	6.162,89							
								Frágil	72.423,75	36.059,11	30.527,60	5.837,04							
								Poco Frágil	14.905,96	3.194,54	1.523,48	10.187,94							
								Muy Frágil	7.592,74	7.317,16	0	275,58							
								Frágil	0	0	0	0							
								Poco Frágil	0	0	0	0							
								Muy Frágil	0	0	0	0							
								Frágil	25.660,89	23.666,86	0	1.994,01							
								Poco Frágil	24.782,83	12.181,45	0	12.601,38							
								JARDINES	50.443,72										
								JARDINES	100.569,72										
								HUERTOS LEGUMBRES	50.126,00										
								CALLES Y CARRETERAS	35.596,95										
								PÚBLICO	5.142.699,80	URBANAS	57.868,68								
												CAMINOS PEATONALES Y SENDEROS	22.071,73						
												PARQUES INTERIORES AL BIC	178.567,63						
										ZONAS VERDES	4.903.292,30								
												PARQUES EXTERIORES AL BIC	4.724.724,67						
										ADMINISTRACIÓN	32.424,15	OFICINAS	798,36						
												TALLERES	10.901,59						
		INFRAESTRUCTURAS	20.724,20	BIBLIOTECA	7.760														
				LIBRERIA ALHAMBRA	100,9														
				APARCAMIENTO	16.824,00														
				TAQUILLA	469,28														
				MUSEOS	1.971,10														
				OTROS SEVICIOS	887,92														
		RELIGIOSOS	1.393,28																
	14.931,74	RESIDENCIAL	2.302,78	HOTELES	9.756,78														
	y 478 mt.			RESTAURANTES	577,9														
		COMERCIAL	11.235,68	TIENDAS	901,00														
			y 478 m	FACHADAS PRIVADAS	478 metros														

ANNEX 11 – Distribution of Spaces Open to the Visits by Type of Visits

**SUPERFICIE TOTAL DE LAS DISTINTAS ZONAS VISITABLES DEL
RECINTO MONUMENTAL**

VISITA DE PAGO

VISITA DE PAGO	
ZONAS	Nº. VISITANTES
PALACIOS NAZARÍES	6.286 m2
ALCAZABA	5.950 m2
GENERALIFE	37.928 m2
PARTAL Y PASEO DE LAS TORRES	19.468 m2
SECANO	4.516 m2
TOTAL	74.148 m2

VISITA GRATUITA

VISITA GRATUITA	
ZONAS	Nº. DE VISITANTES
PALACIO DE CARLOS V	
C/ REAL	
PLAZA DE LOS ALJIBES	
MUSEO DE LA ALHAMBRA	
TOTAL 1	18.915 m2
BOSQUE DE GOMÉREZ	54.412 m2
CARMEN DE LOS CATALANES	19.280 m2
CUESTA DE LOS CHINOS	8.857 m2
ALIZARES	130.039 m2
PALACIO DE DARALARUSA	32.262 m2
CASTILLO DE SANTA ELENA	2.913
TOTAL 2	247.763 m2
TOTAL	266.678 m2

ANNEX 12 – Allocation of Budgetary Resources by Type of Space
(Euro/Sq.m.)

Propiedades	Funcion	Uso y tipo	subtipo	Superficies						
				Euros total	Cerradas	Parcial	Abiertas			
PUBLICO	URBANAS	PATRIMONIAL	MONUMENTOS	Muy Frágil	13,48 €	7,17 €	18,48 €	14,10 €		
				Fragil	6,78 €	6,03 €	5,49 €	14,36 €		
				Poco Frágil	11,19 €	6,13 €	18,02 €	14,70 €		
				Muy frágil	3,86 €	3,84 €		4,37 €		
				Medio						
				Poco Frágil						
				Muy Frágil						
				Medio	6,79 €	4,72 €		6,29 €		
				Poco Frágil	4,14 €	2,87 €		5,76 €		
				JARDINES	4,62 €	JARDINES	5,40 €			
						HUERTOS DE LEGUMBRES	4,00 €			
				CALLES Y CARRETERAS	5,84 €					
				CAMINOS PEATONALES Y SENDEROS	5,74 €					
				PARQUES INTERIORES AL BIC	2,05 €					
				ZONAS VERDES	0,18 €					
PARQUES EXTERIORES AL BIC	0,83 €									
ADMINISTRACION	1,49 €	OFICINAS	15,90 €							
		TALLERES	3,26 €							
		BIBLIOTECA	12,69 €							
INFRAESTRUCTURAS	20,69 €	LIBRERIA ALHAMBRA	92,13 €							
		APARCAMIENTO	1,27 €							
		TAQUILLA	308,11 €							
		MUSEOS	27,95 €							
		OTROS SERVICIOS	112,54 €							
PRIVADO	RESIDENCIAL	RELIGIOSOS	2,11 €							
		HOTELES								
		RESTAURANTES								
		TIENDAS								
		FACHADAS PRIVADAS								

ANNEX 13 – Budget, Expenditures and Results of the Site

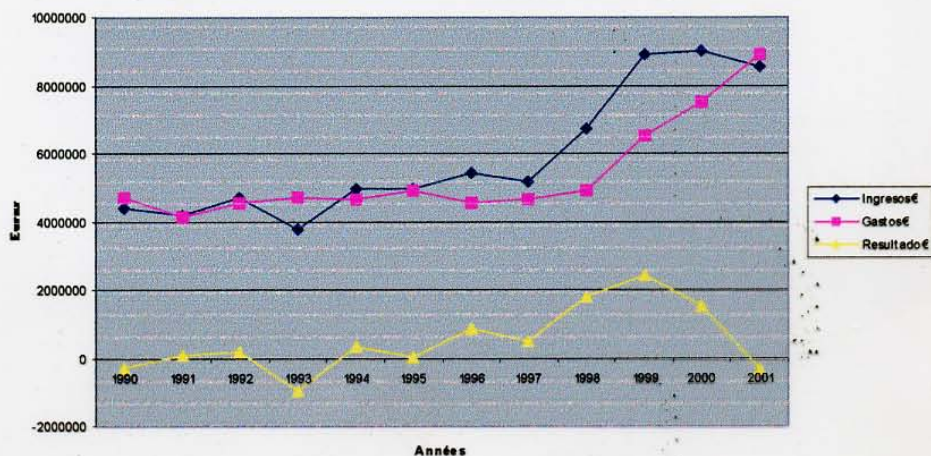
(Euros constantes de 1990)

	Entradas		Publicaciones		Consejería		Otros		Total	
	€	% anual	€	% anual	€	% anual	€	% anual	€	% anual
990	3 360 280	n.a.	1 943	n.a.	95 1208	n.a.	87 247	n.a.	4 400 679	n.a.
991	3 371 088	0,32	3 424	76,17	710 086	-25,35	90 761	4,03	4 175 359	-5,12
992	4 082 396	21,10	2 657	-22,39	362 362	-48,97	249 396	174,78	4 696 811	12,49
993	3 732 106	-8,58	8 003	201,20	4 442	-98,77	10 077	-95,96	3 754 628	-20,06
994	4 269 692	14,40	7 180	-10,29	378 082	8411,08	305 577	2932,44	4 960 531	32,12
995	4 258 047	-0,27	30 902	330,41	654 758	73,18	22 101	-92,77	4 965 808	0,11
996	4 408 125	3,52	79 914	158,61	611 182	-6,66	328 798	1387,69	5 428 020	9,31
997	5 086 967	15,40	12 479	-84,38	0	-100,00	47 773	-85,47	5 147 220	-5,17
998	6 628 510	30,30	3 247	-73,98	49 422	n.a.	36 653	-23,28	6 717 832	30,51
999	8 842 484	33,40	1 573	-51,56	0	-100,00	87 073	137,56	8 931 131	32,95
000	8 717 224	-1,42	39 815	2431,64	0	n.a.	274 930	215,75	9031 969	1,13
001	8 372 138	-3,96	46 274	16,22	0	n.a.	139 967	-49,09	8 558 378	-5,24
002										

Tableau 5 - Evolucion global de los Ingresos, Gastos, Resultado y Resultado brutos (€ constantes de 1990)

	Ingresos €	Gastos €	Resultado €	Rendimiento %
1990	4 400 679	4 677 175	-276 496	-0,06
1991	4 423 125	4 352 592	70 533	0,02
1992	5 270 339	5 078 950	191 390	0,04
1993	4 405 568	5 532 974	-1 127 405	-0,26
1994	6 095 203	5 696 169	399 034	0,07
1995	6 386 874	6 323 393	63 481	0,01
1996	7 229 797	6 073 423	1 156 374	0,16
1997	6 990 902	6 348 725	642 177	9,19
1998	9 291 500	6 811 989	2 479 511	26,69
1999	12 638 086	9 248 867	3 389 219	26,82
2000	13 219 642	10 971 255	2 248 387	17,01
2001	12 976 127	13 471 249	-495122	-3,82
2002				

Evolution des résultats bruts en Euros constants de 1990

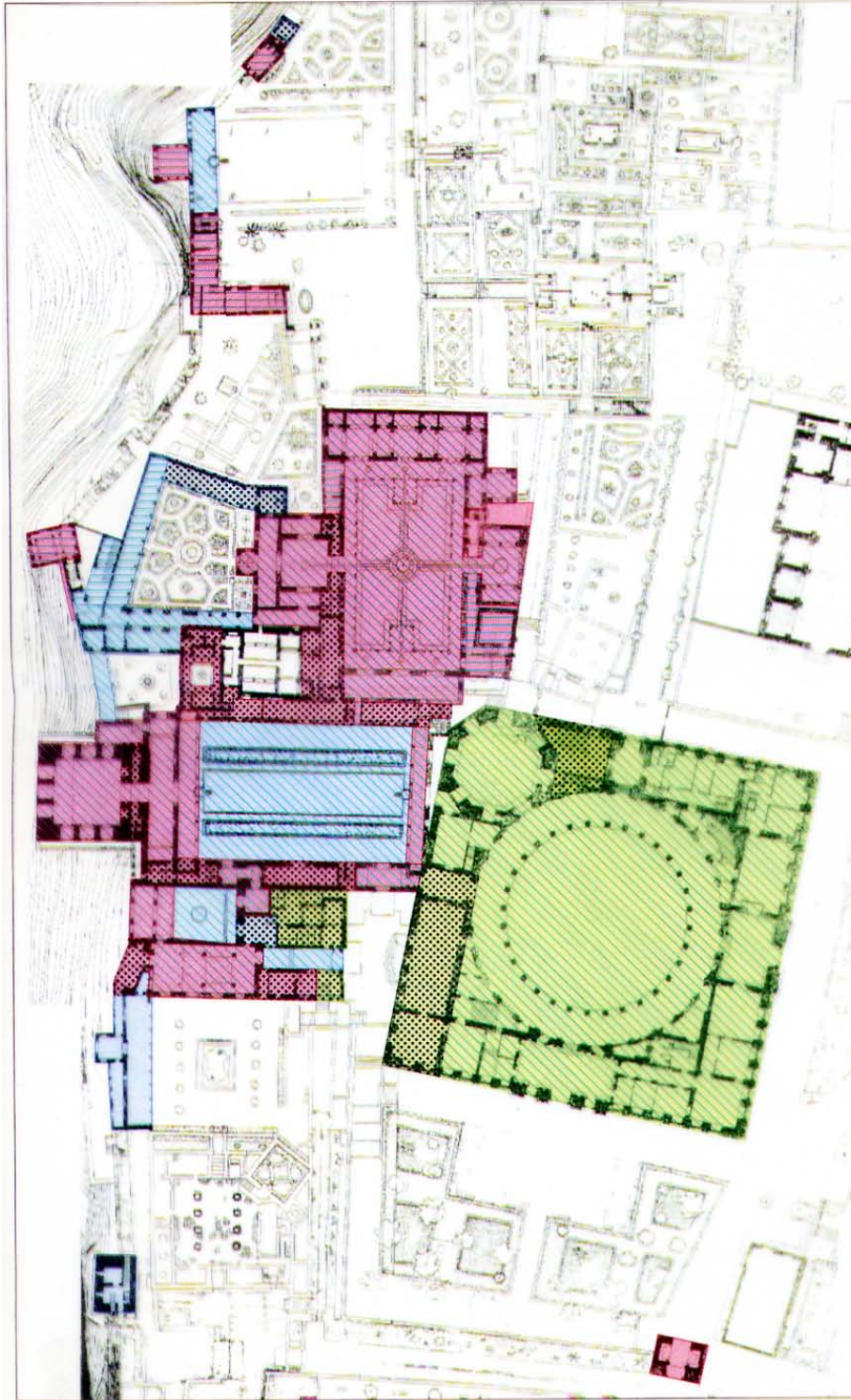


ANNEX 14 – Revenues from Tourism in the Site and in the City

DENTRO DEL RECINTO				FUERA DEL RECINTO				TOTAL
ENTRADAS		OTROS GASTOS		EMPRESAS		OTROS MONUMENTOS		
Tipos	Valor €	Tipos	Valor €	Tipos	Valor €	Tipos	Valor €	
Billete Entrada	10.673.071 €	Comida	1.821.950 €	Alojamiento	34.034.482 €	Catedral	3.967.520 €	
Bono Turístico	6.037.835 €	Souvenir	1.950.851 €	Restauración	30.148.432 €	Capilla Real	2.297.304 €	
Excursiones Organizadas	28.821.252 €	Librería	1.133.888 €	Compras y ocio	13.118.376 €	Centro Histórico	3.601.047 €	
		Audioguías	1.373.343 €	Transporte	18.700.000 €	Albaycin	3.383.158 €	
		Otros Gastos	676.107 €	AAVV	23.445.282 €	Sacromonte	1.852.921 €	
						Cartuja /San Jeronimo	1.189.791 €	
						Parque de las Ciencias	522.581 €	
						Otros lugares	41.683 €	
TOTAL	45.532.158 €	TOTAL	6.956.139 €	TOTAL	119.446.572 €	TOTAL	16.856.005 €	188.790.874 €

T= 2000-2002

ANNEX 15 – The Monumental Site of the Alhambra



**SUPERFICIE TOTAL PALACIO CARLOS V
PLANTA BAJA**
superficie 3.819,25 M2.

- ESPACIOS MENOS FRAGILES
superficie 3.819,25 M2,100%
- VISITA PUBLICA DIARIA
superficie 3.357,93 M2,86,25%
- CERRADO A VISITA PUBLICA
superficie 461,62 M2,11,74%

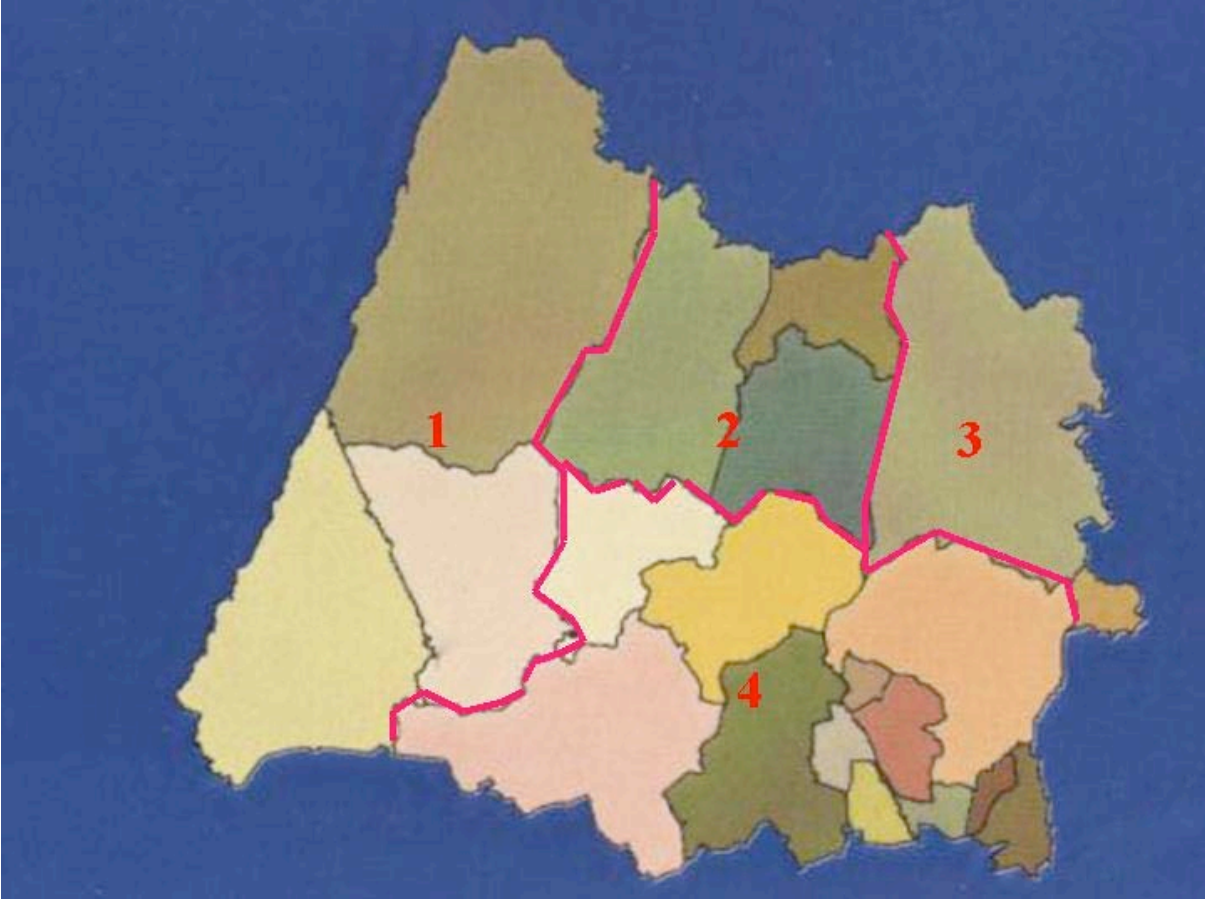
**PALACIOS NAZARIES
SUPERFICIE TOTAL PLANTA PRINCIPAL**
superficie 5.368,97 M2.

- ESPACIOS MENOS FRAGILES
superficie 159,16 M2,2,95%
- CERRADO A VISITA PUBLICA
superficie 133,19 M2,2,48%

- ESPACIOS DE FRAGILIDAD MEDIA
superficie 1.570,91 M2,29,12%
- VISITA PUBLICA DIARIA
superficie 1.289,14 M2,23,76%
- VISITA RESTRINGIDA/PEQUEÑOS GRUPOS
superficie 150,53 M2,2,79%
- CERRADO A VISITA PUBLICA
superficie 140,22 M2,2,60%

- ESPACIOS MUY FRAGILES
superficie 5.663,89 M2,97,67%
- VISITA PUBLICA DIARIA
superficie 2.257,75 M2,39,81%
- VISITA RESTRINGIDA/PEQUEÑOS GRUPOS
superficie 426,33 M2,7,41%
- CERRADO A VISITA PUBLICA
superficie 706,80 M2,12,15%

ANNEX 16 – Regional Differences in Sintra



ANNEX 17 – Main Characteristics of the Zones in Sintra

	1960	1970	1981	1991	2001
1. Coastal Plain					
	6.160	7.563	10.520	12.863	14.782
% de Sintra	19%	16%	13%	11%	9%
		2,3%	3,9%	2,2%	1,5%
Densité	0,5	0,6	0,9	1,1	1,3
Terrains développés				1.172	960
2. Central Zone					
	2.877	3.366	4.856	5.385	6.105
% de Sintra	15%	13%	10%	8%	6%
		1.7%	4,4%	1,1%	1,3%
Densité	0,7	0,9	1,2	1,4	1,6
Terrains développés				119	202
3. North Eastern Zone					
	1.811	2.203	3.106	3.894	7.883
% de Sintra	2%	2%	1%	1%	2%
	0,9%	02,2%	4,1%	2,5%	10,2%
Densité	0,4	0,5	0,7	0,9	1,8
Terrains développés				578	623
4. South-Eastern Zone					
	19.181	30.862	61.903	91313	137.923
% de Sintra	60%	68%	74%	78%	81%
		6,1%	9,1%	4,8%	5,1%
Densité	1,2	2,3	4,8	7,2	11,3
Terrains développés				618	1,487