ANNALISA CICERCHIA

INDICATORS FOR THE MEASUREMENT OF THE QUALITY OF URBAN LIFE

What Is the Appropriate Territorial Dimension?

ABSTRACT. In the wealth of studies on measuring the quality of life, an autonomous 'urban' trend has been progressively distinguishing itself, namely the extension of urban conditions of life to an ever higher percentage of the world's population. From the concept of city understood as a negation of environmental values, we have passed, thanks to a long multidisciplinary evolution, to the concept of the urban ecosystem and to that of the ecological city. What type of indicators may be used for the measurement of the quality of life in the urban environment? And what is their most appropriate ambit of application? An Italian experience in environmental planning (the Ten-Year Plan for the Environment – DECAMB, and the Territorial Frame of Reference – QUADROTER, for the Ministry of the Environment) may offer starting points for a research programme. Concepts such as land supply and demand; territorial loading; equilibrium and spill-over of urban systems; critical population mass, are used to introduce an initial experimental set of (objective and subjective) indicators of the quality of life orientated towards planning, both as regards the provision of services, and for participatory and symbolic aspects.

> But if a place is meaningless without a subject, so too a person removed from his own place is a man of uncertain identity.
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> D. Ley, Social Geography and the Taken-For-Granted World, in S. Gale and G. Olsson (eds), *Philosophy in Geography*, 1979

1. SOME RECENT DEVELOPMENTS

Social research into the quality of life and criteria for measuring well-being have certainly entered a mature phase, even if they have not yet managed to question the primacy of the strictly economic (macroeconomic) systems of accounting and diagnosis of a country's state of health.[1] Perhaps today its status is lower, both in public opinion, and in more specialised opinion, than its supporters would like. Undoubtedly, that part of research which is least bound to social reporting and more planning-oriented, has suffered from a definite loss of confidence, if not from actual hostility towards planning, which characterised the period between the end of the 1970s and the

whole of the 1980s, both in countries with a market economy and in the ex-socialist countries.

Today, on the contrary, planning may aspire to come back into favour, if only for the failure of deregulation and neo-liberalism, in those countries, which had become 'spiritual guides', and thanks also to the remarkable success of systems – like the Japanese one – which have been able to impart a mixed character to the economy in a framework of indicative planning. Based upon an analysis of such symptoms and orientations, Stuart Holland has recently (1992) dealt in a very stimulating manner with the theme of a possible, next 'ascendant phase' of planning.

Another sphere in which research into the measurement of the quality of life has maintained a policy-oriented frame of reference is represented by environmental policies, which, by their very nature, are conceived as medium- and long-term plans for the correction of current trends. If left unchecked, these trends would produce, as everyone knows, disastrous results for the current generation.[2] In this area, nevertheless, the basic conflict between environmental demands and development demands has not failed to produce contradictions which can only be overcome with a great deal of rethinking and adjustment (See Lichfield, 1992 for a stimulating treatment of the innate conflict in the expression 'sustainable development').

1.1 *Population*

Another important element of the context within which research into the quality of life operates today is represented by the profound transformation which has been taking place in the social subjects concerning such quality. Aspirations, levels of satisfaction, and material and non-material needs of the population, have in fact undergone an evolution about which too little is known. And yet this transformation does not fail to show itself, firstly in the 'welfare' countries which are relatively limited on a world scale, but also elsewhere: in the new and tormented democracies of Eastern Europe, and in many countries of the so-called Third World.

On this subject, the research carried out by international organisations must be mentioned in particular, which has been encouraged by the enduring problems of Third World development, which has had as its goal the identification of so-called 'basic needs'. The experts who have dealt with the question of basic needs (among others Galtung,

Green, Miles and Streeten can be mentioned) have attempted to create tables covering all the essential dimensions of individual, social, material and non-material life. Their work has offered an important contribution to the determination of a minimum threshold of satisfaction of needs below which we should never go. But the same idea of basic need is questioned by the profound changes in aspirations which characterise the present.

As yet, little is known about the impact of these new aspirations on other phenomena of structural transformation, such as the economic crisis, the reduction of labour, demographic ageing in most industrialised countries, the collapse of the ex-socialist economies, the duration and worsening of underdevelopment in the countries of the 'South'. Albeit still largely unknown, this impact presents elements of serious risk (for peace and democracy in the most acute cases, as the examples of the CIS and ex-Yugoslavia demonstrate, and for the environment in any case), and constitutes a phenomenology of a complexity which is difficult to grasp, let alone manage. I will limit myself here to recalling it briefly, and to referring to other mainly sociological considerations.[3] Here it will be enough to recall the consequences which this complicated transformation on a global scale produces:

a) *from an 'objective' point of view*, on the formulation of reference standards of the most diverse social indicators, which are tending, on the whole, to rise: it will suffice to recall that in Italy, whilst in the mid-1960s the 'critical population mass' that could express a demand for urban services of the superior type and sustain relative consumption,[4] thus engendering an 'urban effect', was estimated at a threshold value of one million, at the beginning of the 1980s it had gone down to around 700,000. Such a change is justified above all on the basis of criteria relating to a notable increase not only in income, but also in the average level of education (Archibugi, 1986, 1993);

b) *from a subjective point of view*, in a similar and corresponding way, aspirations, levels of satisfaction and lifestyles of reference are subject to continuous upheavals, favoured among other things by the increasingly intense globalisation of communication and by the contemporary (and contradictory at first sight) strengthening of forms of religious fundamentalism and

neo-traditionalism; even ecologically oriented: 'well-being', understood subjectively, in short, obeys criteria with which the experts have little familiarity, and the theory needs yet to be updated.

Furthermore, in reference to this last point, it must be pointed out how the proliferation of ethnic and cultural identifies and claims for 'a distinctive status' by subjects who no longer recognise themselves in a vague definition of 'population' (women, homosexuals, children, the young, the elderly, the handicapped, etc., as well as ethnic and religious minorities) have progressively become more aware of the fact that there is more to it than only one quality of life being indistinctly valid for all. This has made the need more urgent for applying correctives that can 'calibrate' the indicators in such a way that they, on the one hand, lose their general character which can undermine their representativeness in comparison to special population categories (or that, worse, transforms them sometimes into stereotypes or into other forms of the projective thought), without, on the other hand, losing the characteristics of generality which make them meaningful at greater levels of abstraction.[5]

What I have in mind, and will try to suggest in this paper, is that an *appropriate territorial dimensioning* of indicators could satisfactorily take charge of the diverse calls for 'adjustment'. This leads us to discussing the notion of 'setting'.

1.2 *The Setting*

Another trend in studies on the quality of life, and on the criteria for measuring it, which has been developed in an interesting way, arises from the attempt to give a context to the same concept of the quality of life, i.e. to conceive it in relation to a setting, a significant size, in a relationship of reciprocal variability with respect to the concept of spatiality, both physical and social. Initially, studies on the quality of life have always had a spatial or geographical referent, or at least, they have always had the possibility of being used in such a way as to produce descriptions which are geographically or spatially oriented. Alternatively, research aimed at the construction of a system of 'universal' measurement, for comparison, has always had, on the other hand, the problem of 'freeing' itself from the local (national, regional, etc.) variables in order to tend towards a model

valid in any circumstance (see, for instance, the studies promoted in the 1960s and 1970s by Unrisd and in particular the contribution by Drewnowski and Scott of 1966).

In other words, quality of life has been measured in its various manifestations, within a given geographical or territorial context, in order to show up the diversification of behaviour in the variables selected in different spatial ambits, attempting as much as possible to select such variables in such a way that their whole constitutes a prejudicial projection of locally determined social models. In these cases, the territorial component is an external modality of application to the indicator and does not concern its internal composition. To give an example, geographical and territorial levels of application of indicators can be changed indifferently, like the relationship between hospital beds and population; the relationship between enrolment in university and withdrawals, the average number of cubic metres constructed for residential purposes available per head; the number of square metres of equipped greenery per inhabitant, the relationship between judiciary personnel and pending trials etc. The point is that space used as a reference is often 'empty' or merely defined by administrative concepts. It does not convey any of its functions and dynamics, meanings and uses for people who fill it.

That which appears, on the other hand, new and typical in the trend being discussed, is that the spatial (or territorial) component enters into the same construction as the indicator of a meaningful relationship between a certain unit of territory, which is socially meaningful as well, and a certain social phenomenon. Before discussing this point, allow me to recall again the planning-oriented approach that characterises my reflections here.

Karl Fox's work represents this direction well, on which may converge (ex-post) contributions like those of Doxiadis, E.T. Hall, Rau and Wooten, Archibugi,[6] to mention but a few, from experiences which are independent of each other. Their common feature is a focus on the 'proper' setting being used to explain, predict or interpret social phenomena that are relevant for planning purposes.

1.2.1 *Behaviour settings*
Karl Fox was the author, in 1973, of a well known proposal for the territorial reorganisation of the United States according to Functional Economic Areas (FEA), each defined as a relatively self-contained

labour market in the short term, whose residents may acquire, within the limits of the area, an almost complete range of consumer goods and profit from a complete range of public services at a local level.

Such a functional and systemic view of the organisation of the territory may constitute a good basis for the construction of indicators, the content of which is intrinsically pertinent to the structure and function of the territorial system and its performance. Subsequently, Fox's research turned to the measurement of well-being according to not strictly economic modalities, and arrived at a definition of the concept of behaviour setting as a sphere of application of social indicators such as those suggested by the OECD in 1982. Fox's research on behaviour settings represents one of the most advanced attempts to bring sociological and psychological-social contributions together in a discipline which is able to link social indicators and economic indicators for social accounting and planning and, naturally, for use in the framework of the strategies for an increase in welfare.

A behaviour setting is a unit of the environment that is relevant to behaviour, which coerces people and things to conform to its spatial-temporal pattern. Every environment has a programme. The behaviour settings are rated on five behaviour mechanisms: affective behaviour, gross motor activity, manipulation, talking and thinking. The psychologist Roger Barker (1978), from whom Fox drew many elements for his theory, identifies a further eleven action patterns for rating behaviour settings: aesthetics, business, education, government, nutrition, personal appearance, physical health, professionalism, recreation, religion and social contact.

According to Barker and Wright (1955), "behaviour settings are prominent units of extra-individual behaviour identified with a high degree of agreement by independent observers". A behaviour setting, therefore, is not a unit established in a completely conventional way by the scholar. Fox (1985) has in fact demonstrated a notable rate of coincidence between some behaviour settings in the sector of private enterprise and the census units in force in the United States.

If the system of behaviour settings is extended, an accounting system can be created which embraces all living time. Each individual, in each behaviour setting, has a role. If two or more individuals are involved in a behaviour setting, 'transactions' occur. It can be postulated therefore that a 'rational personality' (with

Rawls' meaning) will allocate his or her time among combinations of behaviour settings and roles so as to maximise their (expected) total utility.

The significance of Fox's contribution resides in the fact that the behaviour setting has its own qualities which precede the application of indicators and, as we saw synthetically, influence the behaviour, transactions, and 'reward' enjoyed by the individual.

1.2.2 *Ekistics*

Ekistics was founded by C. Doxiadis. It brings together several disciplines in a unitary science concerning the optimal type of settlement in form and functions, which are reconciled with constraints produced by the physical environment and by human physiology, and allows the maximum disposition of social, cultural and relational possibilities. A specific contribution by Doxiadis should be pointed out on the delimitation of territorial systems: the idea of a *Daily Urban System*, i.e. the multi-functional system of social and economic relationships which are carried out within an isochrone of 12 hours. Archibugi (1986 and 1993) has further elaborated this concept of a Daily Urban System, and in particular the questions of mobility and accessibility of goods and services constituting a satisfactory level of quality of life. This view as well interacts from the inside with the construction of the indicators of the quality of life, because assessing accessibility – to give an example – according to appropriate isochrones, is more than indicating the mere presence (distribution) of a certain variable indicator, and contributes to remapping, in a significant, dynamic and not only physical way, the spatial dimension of reference. The practical consequences are quite obvious: the quality of life in the two urban systems which are similar in the relationship between number of inhabitants and number of recreational services may differ greatly wherever the values which describe the access to such services differ. We will come back to this point later.

1.2.3 *Proxemics*

The American anthropologist Edward T. Hall has dealt at length with the way in which various organisations of space and time, typical of a culture, influence individual well-being, above all in contexts characterised in a growing manner by multi-culturalism. 'Proxemics'

is the term he coined for observations and theories concerning
people's use of space, intended as a specific cultural elaboration.
Much of Hall's work was to produce systems for empirical collection
and measurement of various space 'qualities' (pre-ordered, semi-
determined, informal), distance qualities (intimate, personal, social,
public), as well as various divisions, such as inside/outside, etc.
Hall's contribution may be considered particularly useful for the
construction of indicators of a subjective type relative to well-being
in the organised space, both on a reduced scale (a working environ-
ment, a school, a hospital), and on a larger scale, which takes into
consideration the variability of attitudes to the organisation of urban
space and its meanings. His indications about the symbolic value of
organised (codified) space are particularly promising for the study of
the urban condition. Hall's approach, used at micro scale, is in some
respects echoed by the adopted one, for the construction of urban
environment indicators, by a group of researchers at the University
of Montreal Faculty of Town Planning in 1988. This point will later
be taken up again in more detail.

1.3 A Few Methodological Remarks

A few problems in indicators building (there is a huge amount of
literature on this methodology) concern our subject closely.

Back in 1966, A. Biderman stressed some apparently 'technical'
problems, that were in reality 'social' in the use of indicators. The
most frequent were:

- *Invalidity* (unsatisfactory correspondence of the index with the
  conception of its phenomenological meaning that figures in
  inference and judgement);
- *Inaccuracy* (errors of measurement, sampling, enumeration and
  so forth);
- *Conflicting indicators* (this often provides a ready basis for
  examining divergent social perspectives toward a phenomenon);
- *Lack of data* (this may reveal that ideas about the importance
  of a given phenomenon are not influential enough to generate
  indicators of that phenomenon);
- *Incompatible models* (since each indicator must relate to a
  concept about society that is part of an explicit or implicit theory
  of society, that is one between contending theories);

- *Value consensus* (limited agreement on preference, standards, tastes, etc., on which conditions are good and bad, better or worse).[7]

All these problems could acquire a different value with the addition of the spatial dimension. Thus, for example, one could note about invalidity that the phenomenological meaning of the index could require space or territory-oriented correspondence rules; adopting inappropriate territorial reference units could result in inaccuracy (as is often the case when one refers to administrative territorial units rather than to functional, physical or cultural units); automatic prevalence of spatial-territorial assumptions of an administrative type also leads to those contradictions that Biderman ascribes to conflicting models, and so on.

Among the open methodological questions that are relevant when discussing the appropriate dimension for building quality of life indicators, – especially when policy or planning oriented, – the following are worth recalling:

- Relationship between indicators' typology and the information they convey;
- Problems of ambiguity and internal consistency;
- Problems of comparison and therefore, weighting;
- Limiting of alleged neutrality;
- Objective and subjective dimension of the spatial dimension.[8]

1.3.1 *Typology*

To explore the literature on different kinds of indicators' typology would fill a book by itself. My concern here is with indicators one generally resorts to for planning purposes. In this sub-group, we can mention the following types, along with the observation that to confuse them means to increase ambiguity – sometimes serious ambiguity – in the meaning of the information they convey:

- *State indicators*, that describe a 'frozen' situation without any intervention to alter present trends;
- *Standard, need and lag* indicators: the former assess the situation according to specific parameters; the latter quantify needs or lag according to the chosen reference system. Differing territorial scales of these indicators could produce significant variations of meaning;

- *Goal indicators*, that quantify choices by the decision maker, with the given current constraints and bearing the preference function(s) in mind;
- *Input indicators*, that refer to resources involved in goals attainment; they *should never* be confused with *output indicators* (this often happens, however, in government social reporting: see Carley (1981)), that measure results compared to goals;
- *Throughput*, i.e. *process indicators*, that measure 'internal' phenomena in the procedure of goals' attainment, as working load, efficiency, effectiveness, etc.

1.3.2 *Ambiguity and internal consistency*

It may occur that the same indicator is used at times with opposite values or conflicting meanings.[9] There are cases where one of the two uses may be considered wrong, but in other cases, as A. Michalos reminds us (1992), we enter the category of 'ambiguous indicators', in the sense that:

a) most people will not be willing or able to say whether bigger indicator-values indicate a better or worse state of affairs, e.g. welfare payments, or b) there is serious disagreement about whether bigger indicator-values indicate a better or worse state of affairs, e.g. divorce rates. In the case of welfare payments, one does not know what to say because as the values increase there may be an increase of people in need of such assistance, which is bad; while, at the same time, there is an increase in the amount of assistance given, which is good. In the case of divorce rates, on the other hand, many people know exactly what they want to say, and they happen to disagree with what some other people want to say.

1.3.3 *Comparability and weighting*

Few questions are as old and complex as that of how to compare data concerning quality of life measurement. Being unable to go any further in this direction, here two points worth reflecting upon will be mentioned, concerning the theme of standardisation:

a) In a *comparative perspective*, a higher aggregation of indicators may correspond to increased qualitative and semantic difficulty in comparing data; conversely, a higher disaggregation may coincide with increased quantitative difficulties (e.g. unavailability of data or sources);

b) In particular for *synthetic indexes*, the problem of comparison appears also with how to *weight internally* the indicators that

compose them, as well a with weighting spatial and territorial variability.

1.3.4 *Limits of alleged neutrality*

This point might appear in contradiction with the previous one, that stressed the theme of *standardisation*. Sometimes an excessive 'neutrality' of the indicators implies losing information on a certain extent. In this respect, two subjects (among the many possible) deserve special attention in the context of our theme.

a) *Special populations*: as I hinted in the first paragraph, my suggestion is that the territorial dimension, intended in the sense I hope I have helped to clarify, represents a way to go beyond another kind of neutrality that, at given levels, hides important information.

b) Measures of central tendency. As in Michalos (1992), "While most researchers work with measures of central tendency (means, medians or modes), measures of distribution, variation and inequalities are very important." In a planning perspective of social indicator use, aimed at allocating scarce resources among competing agents/sectors/regions, assessing differences (see above about need and lag indicators) is even more strategically relevant than record uniformity.

1.3.5 *Objective and subjective aspects of the spatial dimension*

Spatial problems must be considered at least under two aspects. The first is related to the fact that the 'objective' significance of an indicator and the information it is able to convey vary in certain cases, and especially in cases of planning-oriented use of indicators, as the reference territorial dimension varies. Maybe the most classic example of this is the introduction of an urban-rural modality in the research on social welfare in American counties by the US Dept. of Agriculture (Ross et al., 1979).[10] The second aspect, that is more subjective (but very important when one aims to measure quality of life), refers to the problem of how to define (again following Michalos, 1992) a "place of resistance so that it captures the real living space of a population", bridging the gap "between virtually all features of what researchers might call their 'objective circumstances' and their perceived circumstances", but also, and more

simply, taking into account that "people's living space is usually
much greater than the town, suburb, city or even metropolitan area
containing their home."

When one uses indicators in a planning perspective, the territorial
dimension – the *appropriate* territorial dimension – becomes essen-
tial, because it represents the *scale* of intervention, the indispensable
frame of reference for maintaining co-ordination, consistency and
continuity.

1.4 *The Urban Dimension*

It is not difficult to note the more or less explicit urban connota-
tions which characterise the systems of indicators that have been
mentioned up to this point as examples of formulations in which the
spatial components has a decisive weight. Before going on, there-
fore, it is worth dwelling on the reason for this urban attribute and
on that of the apparent progressive superimposition of quality of life
and quality of urban life.

Much has been written, said and thought against the city. It has
been claimed that, with their chaotic and clumsy development, urban
agglomerates, with more than a million inhabitants, are a living
negation of the concept of 'good quality of life'. In spite of this, our
present, and even more our future, is urban. The short-lived belief
that signs of de-urbanisation could be glimpsed in some European
countries has been rethought. Above all, it is not possible to have any
illusions about the direction assumed by the ever greater migratory
phenomena within developing countries and from these towards the
'North'. A recent study by Janice Perlman[11] documented the failure
of any type of attempted counter-urbanisation policies, with different
degrees of cogency, in Africa, Asia and Latin America. And certainly,
as Archibugi (1982 and 1986) has claimed, there exists a widespread
and legitimate aspiration on the part of people to have access to a
number of goods and services which are more and more necessary,
and the place where such access is virtually easier and more open is
still – in spite of the progress of telematics and telecommunications
– the urban environment, even where it is not identified with a city
traditionally defined, but with an urban organisation of the territory.
Archibugi writes:

The basic principle for a policy to maximise territorial functionality is *to grant
goods and services to all community members.*

A territorial policy inspired by this principle could therefore be articulated in specific objectives based upon the following points:

a) *maximum spatial freedom of individuals*, i.e. wide, free, fast and equal access to the territorial, historical, cultural, natural, productive, and urban organisation resources;

b) *enhancing physical and aesthetic environmental values*, i.e. restoration or creation of urban and metropolitan structures based not on the present conflicts of competing hierarchy (among individuals and groups, between centre and periphery, city and the countryside, metropolitan areas and small towns), but on the *parity* of actual settlement conditions, on community solidarity at varying territorial levels and the actual capacity of these communities to affect the national community's decisions;

c) *opening the national community to the external world*, by adopting particular objectives and solutions about guidelines and localisation of relevant settlements and infrastructures at a regional or international scale (Archibugi, 1982).

Further on I will be able to emphasise why, in spite of appearances, the urban choice is a real choice, and not a forced one, or a form of resignation and forced acceptance of an inevitable ill. I will begin to do this by examining a concept which seems a contradiction in terms: that of the *urban ecosystem*.

2. THE CONCEPT OF URBAN ECOSYSTEM

The ecosystem approach to the city has evolved around varied and heterogenous material. It is an 'approach', that is somewhat closer to an orientation than to a school or even a thought stream. Its boundaries are not sharply defined.

There is no doubt that the systemic perspective has played a significant part in this approach. It represents a key assumption for the ecosystemic approach, despite occasional excess or lapses into ontology, and manifests itself, on the one hand, in the perception of relations existing among elements and systems at a different scale, tending sometimes to balance, co-ordination and consistency, and on the other, in a unitary view of settlements (the formal and functional optimality sought for in Doxiadis' wake) where constraints on the physical environment and human physiology are reconciled, allowing the maximum expression of man's social, cultural and relational possibilities.

Other concepts are useful in order to specify the components of this systemic territorial frame of reference: for instance, those of

'*environmental load*' (see the Handbook on environmental impact by Rau and Wooten, 1980) and '*carrying capacity*' (W.R. Catton, 1982), the latter related to the limit-notion of *overshoot*, that occurs when, at a given time, the carrying capacity of a system is overrun.

2.1 *Formulation of the Concept*

The urban environment is defined on the basis of the notion of the ecosystem. The ecosystem is the system, constituted by the set of living and non-living elements and of the mechanisms which exist within these elements and between them which is inscribed in space and time (See Amato et al., 1986).[12]

Archibugi, Cicerchia e Salvatori (1995) propose the following ideas for an operational definition of the urban ecosystem as an element for bringing territorial policy in line with a sound environmental policy (see also Archibugi, 1966):

In a perspective of territorial policy aimed at rebalancing territory demand and supply in a new functionality, it is necessary to single out the optimal setting for assessing the anthropic ecosystemic relationship activity/environment, that is the setting where one can manage that relationship all "within", without discharging outside possible imbalances (i.e. altering other balances). Most human activities, that produce pressures on both territory and environment, are tied to the urban environment, have an urban nature and have cities as their only area of impact.

However this setting, the urban environment, must be conceived in a different way than the physical idea of urban continuum that characterises, especially in Europe, the idea of "city". It must be conceived as a "system" of function – none excluded – that take place daily ad produce what may be called "the urban effect". The concept and the physical delimitation of urban environment also include a large part of nature and natural values, that constitute a function of the citizens' urban well-being.

Moreover, since people achieve this integrated socio-economic and environmental (functional) well-being essentially in the "urban life" – that includes built environment and nature – settings that represent the appropriate territorial level for well-being oriented socio-economic planning for local population come to coincide with the same settings of ecosystemic balance.

In this way, so-called land use planning and so-called environmental planning become identical.

The identification of such settings, and such appropriate territorial units of a potential urban-natural ecological balance represents therefore the fundamental premise of a correct and durable territorial policy, that is also a correct and durable environmental policy.

3. THE URBAN DIMENSION AS A TERRITORIAL POINT OF REFERENCE FOR INDICATORS OF THE QUALITY OF LIFE: VARIOUS EXPERIENCES

Up until now we have seen, contrary to what was believed for a long time, how discussion about an environmental quality of life is not a nonsense or contradiction in terms, but in fact constitutes, on the contrary, a field of enquiry which has been little explored and promises a great deal.

The reason why it is promising has already been highlighted: in the first place, to be realistic, since the urban condition, with all its problems and pathologies (overloading, oversizing, ungovernability, etc.) appears to be shared by a growing majority of the world's population and is still seen as preferable, notwithstanding the most varied policies of de-urbanisation put into action in the last two decades (Perlman, cit.). And although this realism should not lead to resignation, I have nevertheless emphasised how the urban condition (which is a relational condition, and is not identified with a given configuration of the 'built-up' area) represents in effect a desirable condition for its greater access to material and immaterial goods and services: this means that the 'urban formula' may be accepted, not as an inevitable ill, but as the object of a planning strategy which aims at achieving optimality.[13] The field of research constituted by the urban dimension of the quality of life is valid in other ways as well, since it can be a determining factor in the creation of better calibrated instruments for enquiry and intervention with regard to contemporary needs.

The urban dimension does not only exist and spread. It is more than the legitimate object of planning policies for the maximisation of well-being. As far as we are concerned here, the urban dimension gives a specific significance to the measurement of the quality of life, both when this measurement has a descriptive or diagnostic aim, and when it aims at reaching policy-oriented objectives.

But let us follow again Archibugi's words of caution (1994):

Nevertheless a certain feeling remains that [the convergence of the environmental problem with the urban one], arising from cultural and political pressure, has taken place with too much attention being given to the object of the problem (cities and the environment) and not enough to an appropriate *method of organisation* or of *approach* to the problem. In other words, much has been said about 'urban ecology', 'the ecological city', the 'sustainable city', and a myriad critical factors

which are found at the junction of the two basic concepts (environment and city), but not enough work has been done on the basic concepts through which action can be effectively 'organised', and thus from which to begin for a good, scientifically suitable, treatment of the question.

If correctly established, this research adds an important coordinate for some categories of social indicators, which should not, in order to provide really necessary information, be neutral from the point of view of the territorial setting. Interesting experiences have been recently made in this direction and are still going on in many countries. This section is devoted to them.

3.1 *The Montreal Experience, or How to Conceive the City Ecologically*

In 1988, the Town Planning Institute of the University of Montreal presented to the Ministry of the Environment a report entitled: *Les indicateurs d'environnement urbain* (Institut d'Urbanisme, Université de Montréal, 1988), which begins with a definition of the urban environment in the following terms:

The urban environment is a system made up to actions and controls on certain resources, transformed and otherwise, which are situated in a defined territory, with the aim of achieving aims concerning the present and future of the human population, of the animal and vegetable population and of the artificial, natural and non-living physical elements which inhabit this territory

The text dwells at length on the process of the construction of indicators of the environmental quality of urban life, emphasising the continuity between general levels of more and more specific aims and objectives. Bearing in mind the methodological interest of such an operation, I will briefly summarise the procedure.

From the elements which make up the definition of urban environment (welfare of the human population, welfare of the animal and vegetable population; the equilibrium of non-living physical elements; the relationship of the human population with the urban ecosystem), are drawn four *classes of aims*:

1. Aims directly concerning the welfare characteristics of the human population:

    health
    safety
    comfort

   pleasure
   mobility
   accessibility
   minimisation of stress
   conviviality

   In the articulation of the first class of aims it can be noted that
'objective' and 'subjective' welfare factors co-exist.

 2. Aims which concern the animal and vegetable population, for
    the conservation of the urban ecosystem:

    variety
    adaptability

 3. Aims which concern the non-living physical (natural and artifi-
    cial) elements, for the internal equilibrium of the ecosystem:

    healthiness
    sustainability
    development
    openness
    equity
    equilibrium and stability
    identity and transparency
    symbolic meaning

 4. Aims relative to the relationship of the human population with
    the urban ecosystem, which express the capacity for control and
    responsibility:

    control
    responsibility
    information

   For each aim a set of statements clarifies the ideal state to be
achieved, and therefore the actions, direct or of control to be under-
taken. Each statement is made up of an element 'action' or an element
'resource' in relation to an aim. The statements clarify the privileged
field or setting for dealing with the aim. Fields and settings have
been chosen because they are the object of collective or institutional
concerns, because they are identifiable and because they involve
measured and measurable elements.

Each statement involves the construction of one or more indicators which, nevertheless, may be referred to one or more statements.

By way of example, I will give here the statements referring to five classes of aims.

(**Statement No. 2**): In order to ensure the safety of the human populations, an environment must:
2.1 be planned in such a way as to ensure protection against natural risks (floods, landslides, etc.);
2.2 be organised and constructed in such a way as to ensure protection against risks associated with the built-up area (fires, the collapse of buildings, etc.);
2.3 be organised in such a way as to discourage attacks against people and goods (theft, rape, etc.);
2.4 be provided with adequate services of policing, fire protection, etc.;
2.5 be provided with emergency assistance services in case of environmental disasters.

(**Statement No. 3**): In order to ensure the comfort of the human population, an environment must:
3.1 offer suitable protection against bad weather conditions and suitable isolation;
3.2 offer a suitable noise level with little variation;
3.3 offer pleasant smells and minimise unpleasant ones;
3.4 be provided with suitable public lighting;
3.5 be provided with public places and provide these with suitable urban structures.

(**Statement No. 4**): In order to ensure the pleasure of the human population, a human environment must:
4.1 be provided with trees, flowers, decorative elements;
4.2 offer a variety of landscapes;
4.3 offer elements of surprise and amusement;
4.4 offer a variety of public places (for amusement, relaxation, etc.).

(**Statement No. 16**): In order to ensure equilibrium and stability, an urban environment must:
16.1 have little variation in intensity between adjacent sector;
16.2 have a growth rate which is suitable and offers an equilibrium between various functions;

16.3 renew and replace its stock of housing, work places etc.;
16.4 demonstrate a suitable relationship among its built-up parts and preserve and respect its natural spaces.

(**Statement No. 18**): In order to offer the inhabiting human population a symbolic meaning, an urban environment must:
18.1 be the object of actions promoting historical events and other types which give it its symbolic meaning.

A brief comment is required. In the work of the University of Montreal, as mentioned, references to the systemic conception of the city are numerous (the whole and the parts; the concept of 'stock'; the mentions of functional and structural equilibria between the variously understood 'parts', etc.) and contribute to emphasising an articulate urban environmental quality which goes beyond and into more depth than the more traditional surveys (for example, the undoubtedly classic ones carried out by the OECD in 1978[14]).

However, at the level of the statements, a certain vagueness cannot go unmissed with regard to the part which tends to define the optimal configuration of objectives in comparison to aims: 'suitable services', 'sufficient quantity', 'suitable relationship among the built-up parts', etc. In our opinion this vagueness (which, as will be seen, will not be completely resolved even when the actual indicators are established, which refer to rather general parameters) is due to having granted less studied indicators to the territorial dimension of the conceptual construction than those used for the ecosystemic aspect.

Each indicator is presented according to a standard format: the aim to which the indicator is linked is recalled. The indicator is described briefly. Comment is made on the measured aspect which refers to the relevant statement. Spatial and temporal fields of application are identified. The method of data collection is suggested, and where possible, the source is proposed.

The indicators measure, even if only partially, the distance between the reality and the objective expressed by the aim and statement. They are objective indicators (they do not imply subjective evaluations: some of them, however, as will be seen, aim to objectively represent a series of important subjective aspects of urban welfare). They may be direct or indirect. They are territorialised

(prevalently in a communal dimension) and constructed in relation to the population, to the collective, and to institutions. They were conceived in order to apply annually.

Whilst on the whole the indicators reflect an ecosystemic vision of the urban system, the question of territoriality appears not to be resolved, but, on the contrary, taken for granted and accepted as it presents itself. Indicators like 'Number of specialist doctors per 1000 inhabitants', described in reference to statement 1.2,[15] do produce information about the existence of certain services, but it is made too uniform, since the resulting report says nothing about the actual distribution in the territory of these specialists, and therefore nothing about the accessibility of the service, which is almost as significant for the quality of life as its actual presence.

Likewise, the indicator reported in relation to statement 2.2[16] gives information about the percentage of insalubrious and unsafe habitations in comparison to the municipal total, but does not manage to complete this information with more precise territorial references such as, for example, highlighting the existence of more degraded zones or zones that need restructuring.[17]

It is to be noted also that the Montreal experiment, – whose overall innovatory worth is beyond doubt, – tends to treat goods and services in an undifferentiated manner, i.e. without making a distinction between 'basic' urban goods and services and 'higher' good and services. The distribution of water with good bacteriological quality, can be an example of the first type of services, whilst the presence of university structures, opera theatres, etc. can be an example of the second. The lack of perception of this difference, which corresponds moreover to different distributive services for the various types of more or less rare services, is probably to be sought in the limited weight attributed in this study, however important, to the systemic-territorial aspect. This limited weight is also responsible, in our opinion, for the fact that, in the report by B. Blanc and colleagues, the municipal unit ends up seeming like an island, or like a closed system with no links to the outside world which are in some way significant for the determination of the environment quality of urban life.

The ecosystemic and territorial prospect is instead fundamental in the work carried out in Italy by F. Archibugi and his collabo-

rators, in two experiences in support of planning: the Quadroter, and the Ten Year Plan for the Environment (Decamb), which will be illustrated in the following paragraphs. Neither of the two Italian works has yet reached a level of detail in the description of indicators equal to that reached by the Montreal study, although in depth examination is currently being carried out by the Group on Man-Environment systems of the Italian National Research Council. Nevertheless, Quadroter and Decamb can offer a meaningful foundation to clarify important elements in the basic question being dealt with here, i.e. what is the appropriate territorial dimension for indicators of the quality of urban life.

3.2 *The Quadroter Experience: The Italian Territory According to an Ecosystemic Perspective*[18]

The Quadroter Project[19] aims at the construction of a 'Territorial frame of reference for environmental planning' in Italy. It is an instrument of territorial and urban policy, conceived as an orienting support for programming. It is intended to address any future operation of land use by private or public agencies. Quadroter, – open to continuous verification and correction, – is an instrument for fostering dialogue and negotiation among the different subjects who are interested in land use planning.

   Quadroter proposes an ecosystemic, programme-oriented reading of the Italian territory. The Italian case presents at the same time areas that are imbalanced because of an overload of activities[20] and largely unemployed areas, some of which risk degradation just because of their conditions of abandonment.

   The launching document of the Project (1989) states that "the role of Quadroter is essentially to express goals for land use (and therefore environmental resources) in such a way that socio-economic activities (actions, interventions, projects, works, both public and private) that concern it will always comply with those goals, and that their importance and expected results, – in terms of environmental damage or even benefit, – are assessed having those same goals as permanent reference" (mentioned in Archibugi, 1992).

   Having stressed the planning-oriented nature of the Quadroter Project, I shall proceed now to a brief sketch of some of its characteristics that I think make it relevant in order to provide an appropriate territorial dimension for the construction of quality of life indicators.

3.2.1 *Conceptual building blocks*

Equilibrium between supply and demand for territory, – notes Archibugi (1994), – cannot ignore spatial constraints: i.e. it is meaningless to construct it outside a reference to the territory whose scale is dictated by the nature of land use and by the spatial extent of this impact on the available supply. The problem thus arises of the appropriate spatial unit of measurement of the equilibrium, and thus of evaluation, planning and decision-making.

The identification of the appropriate territorial settings to handle the balance between territory demand (use needs) and its supply (geo-physical characteristics, pre-existence, etc.) represents an indispensable starting condition in order to control the territory in an environmentally sound way and to proceed to feasible and rational planning, the essence of which – as stressed by Archibugi (1992) – is exactly to balance demand and supply of territory in the medium and long period.[21]

The appropriate territorial setting, i.e. that where most activities and pressure factors impact (and therefore the appropriate dimension to assess and manage this impact) appeared to the researchers of the Quadroter Project to be the **urban** one (in Italy, but also elsewhere): except a few industries or energy activities, or those related to tourist consumption of territory, Archibugi notes, *almost all human activities are related to the urban life of the citizen, that is daily life, and are functionally contained within a 12 hours span.*[22] *They take place in the urban basin* (italics mine). If this is true, then not only as things stand now, but also as future trends of those areas where demographic growth is highest, the appropriate setting to measure, assess and manage impact phenomena coincides with the impact area of the city. It is necessary to specify, however, that with 'urban basin' the project authors do not mean the simple physical delimitation of urban built area, – although they note that naturally also space occupation plays a significant role in producing ecological imbalances, – but they rather refer to the **functions** citizens carry out in the city. The space these functions occupy is then larger than the built continuum, although it has, as a theoretical limit, the daily acceptable commuting that is expressed in a given temporal distance or access isochrone.[23] Archibugi therefore suggests (1992a) that this system of urban functions, – or more simply this urban system – which is

a system of relationships, represents the appropriate space to look for to measure, assess and manage the demand of territory on the part of urban activities, as well as the pressures on it. The search for balance of the urban functions on the territory is then identical with the search for balance between demand and supply of territory of the urban functions; the urban system is seen as an 'ecological urban systems', an 'urban ecosystem'. And therefore, physical planning comes to coincide with environmental planning, and vice versa.

The Quadroter project starts by defining the urban ecosystem as a set of a given community's functional relationships that develop on the territory according to the daily living patterns of the citizen. The project's basic hypothesis is that one cannot produce any welfare condition, nor the necessary balance among such a set of relationships without creating an urban system or placing whatever human settlement into an urban system.

The project then analyses factors of urban well-being: social relationships, physical and economic access to goods and services, job opportunities and working conditions, opportunities for recreation and culture, physical and environmental conditions. Urban well-being is a function of the right mix of these factors, that are sometimes incompatible and must be regulated by some sort of trade-off.

But an indispensable requirement in order to single out the optimal characteristics of the urban system is to identify their dimensions in terms of area, users, activities. With respect to this the concept of 'critical mass of users' is very important, i.e. that users area (the limits of which are marked by access isochrones of other constraints) that just makes it possible for given services ('higher services', according to Archibugi) to exist: those services that produce the 'urban effect'. Below that critical mass, one cannot produce any urban effect; beyond an upper threshold, one finds congestion and overload. In this second case, in order to lighten the extra burden, it is necessary to develop alternative centres that should be endowed with the indispensable 'critical mass' conditions if they are to produce an urban effect of their own.

3.2.2 The Quadroter proposal for the Italian territory

Moving from the conceptual premises sketched in the previous section, the Quadroter research analysed the Italian territory in order to identify urban settlements' distribution and their relative density,

the territorial distribution of higher urban services (those producing urban effect), and a reorganisation of settlements that would:

a) avoid further concentration in already overburdened (metropolitan) areas;

b) allow a redistribution of higher urban services, taking into account basic requirements in terms of 'critical mass', 'users threshold' and time accessibility.

For overburdened metropolitan areas, the reorganisation strategy consists of creating alternative polarisations to monocentrism. For sparsely settled areas (intermediate urban centres) the strategy is to create polarisations that are able to retain, – once the necessary thresholds are reached, – users otherwise attracted by metropolitan areas. Finally, for those non-urban areas (very numerous in Italy) that are particularly interesting from an historical, artistic or cultural point of view, the strategy acquires conservation-protection characteristics.

These strategies represent the basis for the policy of urban environment in the programme devoted to it in the Ten-year Plan for the Environment (Decamb, Piano Decennale per l'Ambiente, that will be dealt with in the following section). In this perspective, the Quadroter research suggested a mid-long term reorganisation of the urban network, based upon:

a) Reorganisation of *10 metropolitan cities* (Roman, Milan, Turin, Genoa, Bologna, Florence, Naples, Bari, Palermo and Catania) with corresponding plans of environmental and territorial recovery, including the creation of alternative centres to the single existing one;

b) Creation of *26* additional *systems of cities*, where small and intermediate towns (that alone would never reach the necessary 'urban effect') will gather and integrate, thanks also to an appropriate strategy for transportation and service distribution;

c) organisation of a number of 'territorial units for environmental, historical and cultural retrieval' that would refer to urban systems sub a) and b) for the higher urban services needed.

3.3.3 A few implications in terms of social indicators

It is not difficult to grasp how the reading offered by the Quadroter project of the interactions between demand and supply of territory could represent a good reference for building social indicators. In such indicators, the territorial dimension would not be a simple 'adjustment', added at the end of the building process, it would rather be an essential component. I will therefore limit myself to observe that:

- Measurement of the *urban effect* requires working out appropriate indicators, that should be both objective and subjective (especially with regard to communication and the symbolic values of cities);
- Indicators for measuring the *load (carrying) capacity* of a given territory begin with a hypothetical assessment of the amount of human activities that are sustainable in a system endowed with specific physical characteristics;
- *Strategic goods and services* for producing the urban effect should be measured in such a way as to assess the amount of service and its quality compared to need; its accessibility, its optimal dimension in relation to population, for each given territory (urban ecosystem);
- Assuming a *planning perspective* for the use of indicators increases the need, however much present, to refer to standard values of territorial optimality;
- Adopting *functional units of territorial reference* rather than administrative units entails, however, heavier problems of data availability (disaggregate statistics etc.) and requires remarkable efforts in order to have access to basic information that is homogeneous, consistent and correctly comparable.

3.4 The Decamb Experience: Possible Sectors and Topics for Formulating Indicators in a Programmatic Context

In 1992 the Minister for the Environment presented in Italy a Ten-Year Plan (Decamb), to constitute a systematic guide for government actions.[24] In this perspective, the Plan was conceived as an instrument: "to establish reliable and measurement targets, to globally evaluate problems of mutual balance and consistency in the various

actions that had been identified and promoted, to establish priorities among needs, to organise instruments and their intervention."[25]

The Plan includes 15 sectoral Programmes,[26] that, in turn, are taxonomically structured into three decreasingly general operative levels: goals, programmes of actions, and actions.

The first place among the 15 programmes that make up Decamb is devoted (a rather uncommon thing for environmental planning) to *urban environment* "The urban environment programme – writes Decamb Coordinator, Franco Archibugi (1992a) – features a particular factor of urban environmental quality: land-use and territorial arrangement. This factor is acknowledged to be by far more decisive than others for regaining urban environment quality in the mid-long term . . . The setting where a balance could best be reached among land-use needs produced by necessary anthropic activities and the very protection of environment is the same setting where man mostly lives and operates, and where he can find – in the daily dimension – the main factors of his environmental well-being. This setting is the urban environment." Urban environment represents therefore, also in this document, the most appropriate territorial unit for analysing the ecological balance between anthropic activities and environmental conservation.

3.4.1 *Aims and action programmes of the Urban Environment Programme*

The general aims of the Urban Environment Programme are two, namely:

1. General factors of a good urban environment quality;
2. Territorial management for a good urban environment quality.

Related action programmes are:

- With regard to n. 1, *General factors of a good urban environment quality*:

    a) To reach urban effect standards in the field of urban services endowment;

    b) To reach urban effect standards in the field of interpersonal, social and political relations.

- With regard to n. 2, *Territorial management for a good urban environment quality*:

a) Interventions in the metropolitan areas:[27] design of alternative centres to the only historical centre of the area; requalification of urban periphery; planning and management of urban traffic in accordance with a depolarising strategy for metropolitan areas; urban restoration of historical centres.
b) Interventions in declining urban areas; actions aimed at creating new systems of cities as urban ecosystems.[28]
c) Interventions in non-urban areas, by means of building and design of "Territorial Units for Environmental and Historical-Cultural Retrieval".[29]

3.4.2 Decamb's programme indicators for the urban environment

As mentioned, the Ten-Year Plan for the Environment has not yet reached the stage of elaboration of a full set of programme indicators aimed at measuring the status quo, reference standards, intermediate and final targets, and validity of the chosen instruments.

An initial work however, was carried out to gather from international literature indicators of urban environment quality (Cicerchia, 1992). This review is organised according to the aims and action programmes in the Decamb's Urban Environment Programme, and can be summarised as follows.

> Aim n. 1, action programme n. 1
>
> General factors of a good urban environment quality – urban effect based upon services endowment

Indicators – all of an *objective* kind – fitting this heading can be divided into 11 groups, namely:

1. Health care services (infrastructures, human resources, kind of population served);
2. Quality of air and water (population served, chemical indicators, polluting agents, quantitative data on services, human resources and kind/number of protective actions taken by authorities);
3. Citizens' security (physical housing security, quantitative data on protection services, accident statistics);
4. Social defence (quantitative data on services, crime statistics)
5. Networks of infrastructures (electricity, gas, water, phone, waste disposal, etc.);

6. Housing (quantitative data, density, rate of change, housing quality, housing policy);
7. Transportation (public transportation, roads, traffic speed, physical accessibility, pedestrian infrastructures);
8. Acoustic environment (levels of noise, actions and sanctions);
9. Recreational and cultural services (sport, culture and social areas);
10. Urban landscape and protected wildlife (green areas, protected areas, urban park, decoration and protection of the built environment);
11. Urban mix (shops, infrastructures and services mix).

> Aim n. 1, action programme n. 2
>
> General factors of a good urban environment quality – urban effect based upon interpersonal, social and political relations

Indicators under this label are divided into five groups:

1. Conviviality (urban space and time devoted to sharing play or celebration);
2. Participation (includes community associations of cultural, social and political nature);
3. Environmental education and support to ecologist actions;
4. Responsibility-sharing and solidarity;
5. Symbolic meanings (events, places and actions to strengthen the symbolic meaning and identity of the urban environment).

> Aim n. 2, action programme n. 1
>
> Territorial management for a good urban environment quality: Interventions in the metropolitan areas
>
> Action n. 1: Design of alternative centres to the only historical centre of the area

Indicators collected about this theme are divided into six groups:

1. Quantitative characteristics of metropolitan areas;
2. Economic characteristics of metropolitan areas;
3. Housing conditions;
4. Services availability and functioning;
5. Land management;

6. Public control of territory.

> Aim n. 2, action programme n. 1
>
> Action n. 2: Requalification of metropolitan peripheral areas

There are three groups of indicators about this point:

1. Social and health care services;
2. Land and built space use;
3. Accessibility and equity in service distribution.

> Aim n. 2, action programme n. 1
>
> Action n. 3: Planning and management of urban traffic in accordance with a strategy of depolarisation for metropolitan areas

Indicators under this heading normally correlate settlement with key features of mobility: average traffic speed, average day trips, vehicle load per area, etc.

> Aim n. 2, action programme n. 1
>
> Action n. 4: Urban restoration of historical centres

Indicators are divided here into two groups:

1. Housing condition of dwellers in historical centres;
2. Historical and artistic patrimony tutelage.

> Aim n. 2, action programme n. 2: Interventions in declining urban areas
>
> Action n. 1: Creation of new "Systems of cities" as urban ecosystems

Indicators here concern mainly access and transportation.

> Aim n. 2, action programme n. 2
>
> Action n. 2: Restoration of historical centres in intermediate cities and new systems of cities

Indicators are divided, as for metropolitan centres, into two groups:

1. Housing conditions of dwellers in historical centres;
2. Historical and artistic patrimony tutelage.

Aim n. 2, action programme n. 3: Interventions in non-urban areas

Action n. 1: Constitution and design of "Territorial Units for Environmental and Historical-Cultural Retrieval"

Indicators are divided into two main groups. The first includes measurement of actions for territorial protection. The second concerns authorities' control, and is further subdivided as follows:

– Measures of territory protection;
– Forms of territorial and environmental control by various authorities.

4. CONCLUSION

The addition of as clear an idea as possible of appropriate 'setting', 'milieu', 'environment' to the notion of quality of life could improve the difficult task of its measurement, especially when one is planning its increase. This would be an addition in both a quantitative and qualitative sense. Quantitatively, it means looking for the appropriate dimension of quality of life indicators, i.e. where they produce the most meaningful and necessary information. This entails that over-standardisation should be avoided. Qualitatively, it means redefining 'living spaces', for individuals and communities, according to functional rather than administrative criteria. This could lead (as in the experience of K. Fox, or in that of Quadroter) to re-mapping territories so as to balance them in terms of supply and demand of goods, services and other resources.

This is of course no more than a suggestion, but it seems at least worth trying as an exercise in indicator-building, of both the subjective and objective kind.

As a final remark, my observations concern mainly program, or planning-oriented indicators, and refer to an operational concept of the quality of life that is supposed to be somehow determined by a decision maker's preference function(s). In other words, it is an arbitrary and conventional construction, admittedly so for practical and pragmatic aims. For this reason, indicators of such a nature bear a clear instrumental mark. They are tools for a policy-making activity, in view of which they must be conceived and adjusted to their appropriate dimension.

NOTES

[1] See, for instance, the World Bank's annual Reports series on world development.

[2] A factor which has urged on the planning initiative in the environmental sphere is definitely constituted by the 'Bruntland Report' produced by the World Commission for Development and the Environment in 1987 and by the following Rio Conference, the main outcomes of which are summarised in the Agenda 21. Many countries, between the end of the 1980s and the beginning of the 1990s, expressed their intentions with various national environment plans, setting themselves a ten-year time horizon, i.e. until the year 2000 and beyond. Japan presented in December 1986 a Long-term Plan for Environmental Protection which followed on from a previous long-term programme for environmental conservation in 1977, which had fixed 1985 as its objective year. The goals of the later document are the promotion of fundamental measures for environmental protection, the control of possible pollution sources, the application of measures for nature conservation, the formation of an environment able to provide man-nature contact, the efficient management of environmental resources, the promotion of an environmental policy based on an international perspective, and the development of environmental policy infrastructures. In May 1990 the Netherlands presented its National Environmental Policy Plan (NEPP), which contains a medium-term strategy directed at the achievement of sustainable development. The NEPP is constructed on a set of ideas elaborated in the 'Pluriennial Indicative Programmes for the Environment' of previous years, which hinge on the attention given to the long-term effects for future generations, on the framing of large-scale global environmental problems, and on the reciprocal dependence between the quality of the environment and socio-economic development. The NEPP concerns the period 1990–1994. In 1990 the government prepared the NEPP Plus, containing integrative measures of the preceding plan. The three strategic lines of the NEPP are aimed at reducing the uncertainty linked to the economic effects of environmental resources; selecting themes of environmental acidification, eutrophication, diffusion of harmful substances, waste disposal, physical disturbance, dehydration, squandering of environmental resources): and developing the instruments and forms of collaboration necessary for environmental policy.

The National Plan for the Environment of the French Government was produced in June 1980, and has a five-year duration. Among its goals are the maintenance of international pledges, the conservation of the inheritance, the protection of health and safety, the strength of the economy, social solidarity and international cooperation.

The British government prepared a White Book on the Environment which was presented to Parliament in September 1990. The areas of intervention concern the green house effect, the city and national territory, pollution control, awareness and organisation, the environment in Scotland, Wales, and Northern Ireland, Europe, and the global environment.

At the end of 1990 the Canadian government presented its Green Plan, which is characterised by a system of wide consultation with the public, and divided into sectors (water, air and soil purity; the sustainable development of renewable resources, the protection of animal and plant species, preserving the integrity of the North, global environmental safety, decision-making responsibility in environ-

mental matters, national organisation, minimisation of the impact of environmental emergencies) which are further split into a plurality of goals.

As far as Italy is concerned, the 'Ten-Year Plan for the Environment' was launched in 1992 (Decamb), which will be discussed later.

[3] I started to deal with this theme in an article entitled *Quantità, qualità e catastrofe* [Quantity, Quality and Catastrophe], in: Democrazia Diretta, No. 4, 1991. See also G. Quaranta, *L'era dello sviluppo*, Angeli, Milano, 1986, M. Maffesoli, *Le temps des tribus*, 1990 and D. Harvey, *The Condition of Post-modernity*, 1990. Among the topics which would deserve further reflection, in my opinion, there is that of the potential growth of the split between the 'objective' and 'subjective' definitions of the quality of life, owing to the likewise divergent movement, on the one hand, of constraints (it suffices to consider those of an environmental and economic nature in a wide sense) which are exercised at various levels on the former and, on the other hand, of a mix of styles of a model-life amongst which these inspired by a 'Western' pattern of life with high consumption are dominant, in Eastern Europe and in the Third World.

[4] The case mentioned in this point represents only an example of how the modification, in a quantitative and quantitative sense, of some basic population characteristics, has an influence on the fixing of standards. We will look more closely at the concepts of critical mass and urban services later in this paper.

[5] The traditional controversy is well known concerning the members of 'self-conscious' minorities with regard to the 'official statistics' and the way such statistics ignore or deform the non-homogeneous groups in relation to political or social, cultural or religious, and demographic or sexual standards. Leaving aside the more profound forms of 'epistemological revolt' discussed by P. Berger and H. Kellener in *Sociology Reinterpreted* (1981), there have been interesting experiments in alternative Social Reporting or in the redefinition of the systems of social indicators starting from various points of view. The African-Americans, for example, have a long-standing tradition of social reporting concentrated on their own minority which has progressively brought to light more focussed indicators than those used in national statistics: the best known case is tied to associations such as the National Urban League or the National Association for the Advancement of the Colored People. Suffice to mention the yearly series *The State of Black America*. As far as 'special populations' are concerned, A. Michalos is the author of a very stimulating essay on a 'feminist' view of social indicators: *Social Indicators Research from a Feminist Perspective*, written for the Seminar on Social Indicators sponsored by the Instituto de la Mujer, Ministerio de Asuntos Sociales, Madrid, Spain, September 1992. All this notwithstanding, the rationale of calling for the 'egalitarian' need for standards is best evident when indicators pertain to a planning perspective, rather than the descriptive or diagnostic one.

[6] The following sections are devoted to a more detailed discussion of these contributions.

[7] Biderman mentions other factors which determine the availability of indicators: *measurement technology* (the susceptibility of the phenomenon to accurate measurement); *social observability* (not in the sense of available statistical techniques, but in that of the organisation of the social phenomena involved, which can be favourable to such measurement, or, conversely, hinder it); *data-agency perspective* (the point of view that is typical of the human group responsible for producing indicators).

[8] These arguments, related to building territorial indicators as tools for policies of resource allocation, were discussed in Di Palma e Cicerchia, 1994. Here I will limit myself to very brief explanations.

[9] I have in mind a recent Italian case: how is one to judge a high and increasing number of formal complaints about inefficiency of the public health care system? Is it a (negative) indicator of disservice or a (positive) indicator of increased transparency in the procedures for protecting citizens' rights?

[10] It is widely known that this research uses a four-fold classification of metropolitan counties, or SMSAs: three classes according to dimension and one based on the dichotomy central city/suburb area, and a six-folded classification of nonmetropolitan counties on the basis of an urbanised rural-urban continuum, and on their being or not being close to SMSAs and not having an urban population.

[11] Perlman J., 'Migration and Population Distribution Trends and Policies and the Urban Future,' in: Belotti, M., A. Cicerchia, L. d'Andrea, *Urban-Rural Relationship in the Framework of Development Processes*, Officina, Roma 1987.

[12] Bernadette Blanc and the other authors of the report: *Les indicateurs d'environnement urbain* (1988) describe the "urban environment as an environment created by man". It is an artificial environment, more so than any other, and in principal, is totally so, because in the production of the urban there is the idea of controlling the urban space in a total and systematic way: "the artificialisation, control and production by man are part of the same essence of the urban phenomenon", built as a "model to be inhabited". Furthermore, the urban environment is developing, and is characterised by change and defined from within by actions which generate a dynamic of development, growth, and expansion. "The urban environment – one reads in the same report – is a territorialised ecosystem, which involves a configuration of objects and networks ordered in some way. It moreover depends on distant territories for its supplying, and this dependency is relative and multi-dimensional, whilst the arrangement of the spatial system assumes by necessity a limited and relatively closed configuration." It can be observed also that the actions which characterise the urban environment and which orientate its development are neither arbitrary, or inscribed in the nature of things: they are motivated by equilibria and disequilibria which derive from the relations between the elements and especially form social relations and social formation.

[13] It is again Franco Archibugi who expresses (1992a) this concept concisely: "The crisis in the urban system (...) is more serious both because today the overwhelming majority of humankind who live and work, live and work in cities (at least in the Western countries); and also because it is reasonable to expect (and by the way also desirable, in a political conception of equalising social and economic conditions of the citizen) that soon the totality of populations (...) will live in cities, that is in 'urban' conditions of life."

[14] As will be remembered, in order to describe the state of the urban environment by means of indicators, the OECD proposed an articulation into four components:

1) housing (internal space, external space, comfort and sanitary elements, safety of inhabitation;

2) services and employment, accessibility and quality of commercial services, accessibility and quality of sanitary services, accessibility and quality of educational services, etc.);

   3) environment and resources, air quality, water quality, exposure to noise,
   elimination of solid waste, etc.;
   4) social and cultural environment, social integration, organisation of the collec-
   tive etc.

These are indicators of state, which are different therefore from those of perfor-
mance and those of quality, which have more to do with the social perception of
the quality of the environment and life.
[15]   Statement 1.2: "To guarantee the health of the inhabiting population, an envi-
ronment must be supplied with health services and structures able to serve the
whole and parts of the population."
[16]   Statement 2.2: "To guarantee the health of the inhabiting population, an envi-
ronment must be organised and constructed in such a way as to ensure protection
against the risk associated with the built-up area (fires, the collapse of buildings,
etc.)
Indicator: Proportion of unsafe, insalubrious or abandoned dwellings.
Measured aspect: the urban environment must ensure protection against risks
associated with the built-up area (fires, the collapse of buildings, etc.). The safety
of people living in unsafe housing is seriously undermined. The indicator proposes
to evaluate the amount of unsafe or insalubrious housing.
Data sources: Council surveys.
Composition: 1) Establishment by the council services standards of housing safety
and salubrity, and the inventory of abandoned housing, 2) Number of housing units
declared unsafe, unhealthy, or abandoned. 3) Total number of housing units in the
council area. 4) Calculation $2/3 \times 100$.
[17]   A further observation concerns a certain flattening of the indications made by
the University of Montreal about the 'public' nature of the goods and services
supplied and considered as determining factors for a good standard of urban envi-
ronmental quality. Although, in reality, the great part played by the 'public hand'
in guaranteeing a high level of such quality cannot be denied, it is nevertheless
likewise undeniable that 'welfare' is the result of the concourse of a number of
agents, some of which are private, and others of which belong to the private-social
sector (associationism, voluntary work, etc.) which, on the other hand, seems to
recognise a part of the indicators. An inclusion of the private dimension in the
supply of relevant goods and services could lead to an interesting extension of the
set of indicators presented for each 'statement'.
[18]   For this section, I found inspiring a synthetic and comprehensive presenta-
tion of the Quadroter project by Archibugi (1992): *Il progetto Quadroter: una
lettura ecosistemica del territorio italiano*. This was presented at the conference
on: 'Aspetti ecologici della pianificazione del territorio' (*Ecological aspects in
land-use planning*), Politecnico di Milano, Facoltà di Architetura, Milano, 12–13
November 1992.
[19]   It is a 'strategic project' by the National Research Council, in collaboration
with the Ministry for the Environment, the Final Report of which was published
in 1991.
[20]   Note the similarity with the ecosystemic concepts of carrying capacity (Catton)
and load capacity (Rau and Wotten), mentioned in par. n. 2.
[21]   See on these same themes, also by Archibugi, 1988 and 1991.

[22] These points recall the ideas of Functional Economic Area (Fox) and Daily Urban System (Doxiadis) in par. 1.2.

[23] The background studies for the first Italian effort to nationally articulate the urban systems (called then 'Metropolitan'), the Progetto '80, established such isochrone not to exceed sixty minutes per day.

[24] The Italian political scene has changed greatly since 1992, and the present establishment, as I write, (Governo Berlusconi) has shown itself, – despite the European Community's orientations and pressures, – to be particularly hostile concerning environmental protection, let alone giving such protection the dignity of a plan. Although therefore the Decamb's political feasibility has been almost reduced to zero by an adverse fate, the document still retains its technical and methodological validity. With this spirit and the heartfelt wish of a rosier future, this section is devoted to Decamb.

[25] From page one of the Plan text.

[26] Such programmes concern:
Urban Environment
Nature Protection
Atmosphere
Water
Soil Conservation
Waste
Forests
Coasts
Industrial Hazards
Agriculture
Chemical Industry
Transportation
Energy
Environmental Education
Environmental Information

[27] That is, the ten metropolitan areas identified by the Quadroter research: Rome, Milan, Turin, Geona, Bologna, Florence, Naples, Bari, Palermo and Catania.

[28] This aspect is also stressed in Quadroter. Newly designed urban ecosystems are now 26: 11 in the North, 5 in the Centre, 6 in the South and 4 in the main Islands.

[29] At a first examination, Quadroter identified over 270 such areas.

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