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Sustainable development and urban fabric

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THE CITY AT THE HEART OF SUSTAINABLE DEVELOPMENT

Today, the objective of sustainability, urban or otherwise, must be considered in a context dominated by climate change and its impacts. It must be remembered that the construction and functioning of cities is responsible for 75% of CO_2 emissions, and the share of urban dwellers in the total population is expected to reach 70% by 2020. It is therefore fair to say that the drive to take climate change into account and to implement sustainable development will come from cities or will not come at all.

ANTICIPATING AND SUPPORTING URBANISM

How can we ensure that urban policies fully take on board this situation? How could policy guidelines for sustainable cities be drawn up? Beyond the opposition between sprawl and density, between regulation and deregulation, and an acceptance that "demiurgic" urbanism has been brought to an end through "market dictatorship", we still have to ascertain ways that populations can "live together" and to define the rules on how this is achieved. We must now consider the relationships between density, functional and social diversity, urban forms and mobility in order to anticipate, stimulate, encourage and support, through coordinated policies of urban planning and transportation, some spatial and territorial dynamics that are adaptable and sustainable.

THE GRENELLE ENVIRONMENT FORUM, AN OPPORTUNITY FOR URBAN SUSTAINABILITY?

Acts I and II of the Grenelle de l'Environnement (Grenelle Environment Forum), a major environmental initiative by the French government, are part of this framework, as their purpose is to search for a different growth model. However, based on a profusion of new categories of plans and programmes, the legal nature of which is sometimes unclear, and on a very wide range of financial and fiscal instruments, few measures are effectively and directly applicable. In addition, the process, which is non-binding and mostly optional, depends largely on the willingness of local communities. In this respect, certain neighbouring countries, such as Germany or the Netherlands, offer valuable lessons on how to re-establish urban planning at the appropriate level, i.e. that of the urban territory, and to coordinate the various aspects of urban development.

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SUMMARY

A consensus has formed around the city as a subject and an object of sustainable development, as a source of issues, problems and solutions, but also as an agent in control of its own destiny and trajectory. It is clear, however, that individual and collective responses to the challenge of sustainable urban development are insufficient compared to the issues at stake. This article therefore seeks to take stock of what is really new in urban sustainability research, and then to decipher the debates related to the institutionalisation of sustainable development in urban policies. To this end, we analyse the objectives of urban policies, particularly through the issue of urban form, and also the methods used to achieve the targets. Finally, we examine the French government's response to the issue: the Grenelle Environment Forum.

INTRODUCTION: SUSTAINABLE URBAN DEVELOPMENT - WHAT'S NEW?

A consensus has formed around the city as a subject and an object of sustainable development, as a source of issues, problems and solutions, but also as agent in control of its own destiny and trajectory. However, at the same time, a scepticism has emerged along with a denunciation of this "façade painting", and two opposing reactions have arisen: firstly, an "enough with environment" attitude; and secondly, citizens that engage in the issues autonomously from public authorities. Nearly twenty years after the Rio Earth Summit (1992), individual and collective responses to the challenge of sustainable urban development are insufficient compared the issues at stake. Clearly, being fully informed is not enough to forge a collective will to act and to change attitudes, behaviours, technologies, systems and modes of governance. What action can therefore be instigated?

Arising from the rejection of "ecodevelopment," sustainable development is clearly a concept that is deliberately "soft", balancing different imperatives (economic, environmental and social) and based on intergenerational equity. However, this concept is significant in that it is an institutionalization of the desire to preserve nature, and also since it highlights the conflicts and therefore the compromises that must be found between the three pillars of sustainability.

Different definitions of the urban application of sustainability have been proposed, revealing confusion more than a proliferation of ideas, in a similar way to that witnessed in debates, that are today somewhat out-dated, on the indicators of sustainable development. Against this backdrop of profusion, the synthesis proposed by Cyria Emelianoff[1] (1999) seems valuable because it operationalizes the different fields of action for sustainable development (individual, local, political, etc.) and moreover, by abandoning the goal of a holistic definition, it enables a dynamic and therefore adaptable "territorializable" definition. We await what is to come up behind the third definition of the sustainable development concept, i.e. the "green growth" or "green economy" (OECD, 2010).

The canonical definition of sustainable development as proposed in the Brundtland Report (1987) combines social, economic and environmental concerns to bequeath to future generations the same opportunities as we ourselves inherited. In this we find the same essential concerns that have been shared by urbanists for of a long time, for example Ildefonso Cerdá, the Spanish architect and urban planner, clearly expressed these notions nearly half a century ago in 1867 in his *General Theory of Urbanization* (*Teoría general de la urbanizacion*), which he wrote after realizing the Barcelona expansion plan.

1. Cyria Emelianoff defines a sustainable city as 1) (minimal definition) a sustainable city, able to renew itself, which allows an expansion of the field of vision beyond the short term, from the perspective of urban trajectory (sustainable is to time as global is to space); 2) (practical definition) quality of life in all places and weaker differentials between the living environments, which requires a social and functional mixture, or failing that, strategies to promote the expression of new proximities; 3) (programmatic definition) a city that takes back a political and collective project, "equitable on an ecological and social level vis-à-vis the territory and the planet."

So what is really new in the search for urban sustainability? Firstly, of course, climate change, which is mainly a consequence of human activity, has opened many new perspectives. The construction and functioning of cities is responsible for 75% of CO_2 emissions. Secondly, the majority of humanity now lives in cities, particularly in developing countries, with the share of urban dwellers in the total population expected to reach 70% by 2020. It is therefore fair to say that the drive to take climate change into account will come from cities or will not come at all. It is known that urban energy consumption, and also therefore its reduction, depends on usages/lifestyles, technologies and the functional spatial organisation of cities. Finally, beyond the issue of climate change that currently monopolizes attention, it should be emphasised that great progress has been made in the institutionalization[2] of biodiversity conservation (for example the Green and Blue Corridors of the Grenelle Environment Forum) and in the way handicap has been taken on board.

In parallel, what can be said about those subjects that are not new but remain linked to crucial issues such as sustainable development, or to concerns that featured highly on earlier agendas, such as social cohesion or the fight against urban sprawl (in France, to preserve usable agricultural area [UAA] or for technical and economic reasons given the higher costs of uncontrolled sprawl)? Firstly, while previous efforts might have resolved certain cyclical aspects of the crisis, they have certainly not altered their fundamental structure. This illustrates the need for a directional change but also the difficulty that such a move would entail because major modifications would be required to the business models currently in place. Secondly, it is evident that policies are necessary to properly tackle the engine of this unwanted dynamic, i.e. the processes involved in building cities. Thirdly, the length of time that these themes have been under discussion suggests that much research has already been conducted in these areas. The purpose of this article therefore is to help bring this knowledge back onto the table and to learn from it.

So what can be done? What could be the guidelines of a policy for sustainable cities? In the following sections, the consequences of the institutionalization of sustainable development in urban policies are explored. Direct attention is not given to the policies and instruments for reducing greenhouse gas emissions, as the intention here is not to contribute to the discussion panel of a specific urban subject, namely as a source of pollution. Instead we position the city as a political object that must be considered both globally and collectively.

In the first section we untangle the debate related to the institutionalization of sustainable development in urban policies. Thus, we initially discuss the objectives of policies that aim to produce a specific type of urban form, such as: the "ideal city" (does it really exist?), a sprawling town ("ugly" outward urban spread), etc. Subsequently we analyze the means to accomplish these ambitions and also the opposition between deregulation advocates on one side and, on the other, the advocates for a return to tighter regulations for planning, land and housing markets and metropolitan governance.

In the second section, we analyze the response that the French government intends to give after almost three years of debate: the Grennelle Environment Forum, which constitutes an interesting stage in French city administration because planning legislation, which is traditionally responsible for spatial organisation, will be assigned the task of managing societal problems of a much more global nature. In the current crisis situation, we can immediately highlight a certain dichotomy in ongoing policies due to: on one side, the temptation to accelerate construction developments, which is a clear aspect of the French recovery plan, particularly the provision aimed at restructuring the planning code and its loosening by ordinance (removal of regulatory and procedural barriers for rapid construction approval); and, on the other side, the specific objectives of the Grenelle II Act, which introduces a number of new constraints, especially in urban planning, such as territorial coherence schemes (*Schéma de cohérence territoriale* - SCOT) and local development plans (*Plan Local d'Urbanisme* - PLU) to which the Grennelle Act adds a new set of planning documents.

This article focuses mainly on the French context but also draws on international examples and discussions.

1. SUSTAINABLE DEVELOPMENT AND URBAN POLICY

The tools at the disposal of municipalities to influence the spatial development of a city and reduce the need for citizen transportation are limited; and, in principle, are the same in both the Northern and Southern hemispheres. They can be grouped into four categories: investments in primary infrastructure (networks); regulation of land use; public intervention on land and housing markets (as in several Scandinavian countries); and property taxation (Renard, 2001).

2. Even if today this remains a stated intention in a law that awaits completion.

1.1. Urban form

There is a contradiction in public policy between a professed readiness to "tighten" the city, to proceed with urban renewal, to create more compact and dense cities (The Solidarity and Urban Renewal Law [*Solidarité et Renouvellement Urbains* – SRU], Grenelle I and II etc.), and on the opposite side the active pursuit of suburban sprawl. There are three main reasons for this inconsistency. Firstly, "diffuse" housing or "separate housing units" make up a dominant proportion of new housing developments: 60% of total annual housing development falls into this category, while housing itself represents two thirds of new construction. Secondly, many major cities, particularly Paris, lack social housing. The "solution" for some house hunters is to build their own low-cost homes (which is possible for under €80,000, or even under €600 for a "nano-house" from India's Tata Group) on cheap land, i.e. land that is far from infrastructure and public transport in particular. The consequences of such a trend, in terms of ecological footprint, are significant and inevitable. The third reason is due to a governance problem: the building permit remains the ultimate weapon in urban planning, the control of which is in the hands of local mayors; and striving for mixed urban housing or the densification of their territories is not generally one of the main priorities for mayors. Many reports (Corfee-Morlot et al., 2009), including the Balladur report (March 2009), call for this responsibility to be raised to a higher territorial level, so that potential building developments can be considered on the basis of whole conurbations. However, many of the elected officials currently in control of building permits have a very localized constituency and do not wish to lose this power.

1.1.1. The ideal city

City experts have long sought to define an ideal urban sustainable form. Different models of urban development, giving priority to one or other of the three pillars of sustainability, have clashed throughout the history of urban planning theory: the "Garden City" (Howard), "New Harmony" (Owen), the "Industrial City" (Garnier), the "Linear City" (Soria y Mata), the "Broadacre City" (Wright), the "Radiant City" (Le Corbusier) and community and pacifist organisations such as Fourier's phalanxes or Cabet's Icaria, etc., have all been proposed as models of an ideal urban form (Ragon, 1991).

The rapid increase in energy consumption associated with urban transport also leads to the temptation to define an ideal urban form that would minimize the energy requirements and emissions from urban commuting. The planning of energy efficient urban developments has been the subject of lively debate, particularly during the 1990s, and can be summarized somewhat schematically as a conflict between supporters and opponents of the "compact city" concept. The term "compact city" is used to encompass the range of urban planning approaches that emphasize the advantages of stemming urban sprawl.

The supporting arguments for the compact city have convinced many state administrations to advocate, at least formally in official announcements, urban renewal policies in preference to further urban sprawl. For example, the French government's 1977 "anti-sprawl" policy and its "Solidarity and Urban Renewal" law of 13 December 2000; or the implementation of the Roger's report "Towards an Urban Renaissance" in London in October 2000.

The European Commission (1990, 1992) has encouraged European cities to move towards a greater level of compactness on the basis of environmental and quality of life objectives. And the British government has placed the compact city at the core of its sustainable development policy (Department of the Environment, 1993), which was presented at the UN Commission on Sustainable Development in 1994. Similarly, the governments of the Netherlands (National Physical Planning Agency, 1991), Australia (Newman, 1992) and North America (Wachs, 1990; Chinitz, 1990) are attempting to reverse their traditions of urban sprawl.

Other experts (Breheny, 1994) consider that the benefits of compact cities are far from proven. There are no studies that definitively reveal the direct and indirect costs of compactness. The concentration of millions of inhabitants and economic activities can lead to serious problems of congestion and quality of life, and also reduce city access for the poorest people, thus hindering the environmental, economic and social objectives of sustainability.

The proponents of "new urbanism" raise an alternative approach (Talen, 2005), which supports an intermediate thesis: the polycentric city with "decentralized concentration", in which facilities that are usually concentrated into a city's main centre are scattered between several sub-centres, forming nuclei that are connected by a high performance public transport network.

A critical analysis of the debate on optimum sustainable urban form, which spans through the history of urban planning theories, shows that the search for an exemplary urban model is futile. The search for a perfect urban model that limits

energy consumption related to the movement of citizens, and the replication of this model in various contexts, is an outdated objective that is part of a "demiurgic" urbanism that has been brought to an end through "market dictatorship" (Renard, 2003). On top of this, the main focus actually needs to be shifted onto existing urban structures, since it is estimated that 70% to 80% of the building stock of 2050 will be buildings that are already in existence today.

1.1.2. 19th century utopias and 21st century endeavours

The current debate on sustainable cities (where the examples of Vauban in Germany, BedZED in the UK and Masdar City in Abu Dhabi are often cited) often gives the impression of a desire to return to the utopias laid out during the nineteenth century, that are well described in Michel Ragon's work. Despite perhaps a warm feeling of nostalgia generated by that such musings, it is ultimately disappointing if 21st century solutions have to be recycled from two century old utopian visions, and would suggest that current thinking on the subject is rather weak. There is clearly therefore a need for more forward thinkers with new utopian ideas for the city.

In the same way that car companies are striving to entice their last customers, there are those that imagine a future for the "city à la carte" concept, the emergence of which is due to the development of new technologies. Here the user-inhabitant is the central figure that, through his decisions and purchasing habits, creates his own city within a city. New energy technologies in the car industry and information technology in city services could provide the business models of tomorrow, but we still have to work out how people will "live together" and define the rules for this to happen.

With regard to ecodistricts, there remains much doubt about their relevance and quality, along with the criteria by which their quality is assessed. On closer scrutiny, it appears that ecodistricts solve nothing, although they may have an application if used at all and if used correctly as a means to understand and test innovative "full size" solutions for sustainable development. In the management of sustainable urban development, as for any economic or technological transition, the learning process is key. What's important is not whether one ecodistrict is better than another, but to answer the question: "what have we learned?" Furthermore, ecodistricts carry the risk of the "yuppification" of urban areas, which only serves to reinforce the social divisions already in place, by focusing on certain districts at the expense of the rest of a city.

1.2. Guiding urban development

1.2.1. Market *versus* planning

In many countries today, a consensus is emerging regarding the perceived excess and over complexity of land use regulations and the many consequences for the building sector in terms of delays, costs and legal uncertainties (Renard, 2003). The proliferation, complexity and occasional inconsistencies of regulations can constitute an obstacle for controlled development, inducing uncertainty along with strategies to find loopholes and circumvent the rules. Without doubt, simplification and clarification of the regulations is long overdue and this constitutes an important issue. However, beyond this requirement, such concerns open up an important debate on the need for land use regulations and its modalities.

Proponents of deregulation believe that land use regulations are often the main cause of urban sprawl, which may seem paradoxical since this type of development is not the explicit objective of regulations. However, this is a straightforward argument, since regulations often impose minimum plot sizes, maximum densities and land occupation coefficients, while very rarely enforcing opposite standards. Consequently, regulations require households to utilize more land than they otherwise would, if they were allowed a free choice about how much land they wanted. Poorer households can only access land property through smaller amounts of land than the middle classes. And regulations that specify minimum land usage for new housing plots push the poorest people further out towards the periphery, where land prices are consistent with legal density, or instead towards central slums, that are very limited in area but are not encompassed by the regulations. Similarly, for more affluent people, high inner city property prices encourage a preference to live in the suburbs, where the lower land prices allow them to live in more spacious homes, compensating for their increased amount of travel time. These converging trends increase the need for mobility. Thus, urban sprawl can be explained by the increase in land prices due to insufficient supply, itself a consequence of the rules restricting the right to build (Lefèvre, 2010).

In the framework of policies aimed at curbing soaring land and property prices and uncontrolled sprawl, some private sector "property supply" strategies, based on a deregulation of land rights, have been conducted in various countries. Such policies have repeatedly delivered disappointing results or were actually counter productive (Renard, 2002).

In particular, deregulation in urban peripheries has not proved to be the right tool for preventing development on protected land or for limiting uncontrolled urban sprawl. It is important to note that following many trials in suburban areas, pure and simple deregulation to reduce prices and promote access to land and property markets for the poor, not only fails but can also lead to inefficient urban sprawl, resulting in higher prices for the provision of basic urban services (roads, water, sanitation, electricity, etc.) and increased dependence on individual transport (Arnaud, 2004).

Various recent implementations of "property supply policies" (during the late 1980s in France, in the early 1980s in the UK and the early 21st century in Spain) provide a good illustration of the counter productive side of these policies of property deregulation.

It seems preferable that outright deregulation should be replaced by "property production" policies, which "set the stage" for urbanization. This approach means that public agencies, or private operators under contract, anticipate urban extensions and plan for them by providing a minimum amount of basic infrastructure (planning future roads and land drainage) ahead of the arrival of networks and the subsequent definition of the building permits.

Moreover, it seems clear that minimum plot size limits and low population density regulations, for example the Land Cover Coefficient in France (*Coefficient d' occupation du sol* - COS) can be an obstacle to an intensification and diversification of land use in the city centre. While in areas of high accessibility, the modification of these regulations and the adoption of land use plans, for example the French Plan of Land Occupation (*Plan d'occupation des sols* – POS) in order to facilitate functional diversity would enable the concentration of private investment and therefore the origins and destinations of daily commuting.

Analysis of the implementation of these policy tools highlight the wide gap that often exists between "official" public policy and local practices, where nimbyism (intolerance of pollution in its immediate environment) or Malthusianism often exists.

1.2.2. Anticipating and supporting urban planning

For several decades, a belief has gradually taken root among a majority of experts that market forces are so dominant in terms of land use that it is not only very difficult for local authorities to confront and oppose them, but also very ineffective. Thus, a consensus has formed on the notion that traditional European-style urbanism has ended ("the end of the demiurge," Haeringer, 2000), i.e. a type of urbanism based on detailed prior planning, the major intervention of local authorities regarding land use, and special funding for construction. Due to the overall economic conditions (a redefinition of the boundaries between states and markets), and to the very limited financial resources of local authorities (especially in emerging countries) to intervene directly with rapidly increasing land prices or even speculative bubbles in many "global cities", "demiurge" urban planning is succeeded by an "anticipation and support" type of urbanism, which by definition is more focused on spontaneous dynamics. Here we touch upon what Tribillon (Tribillon, 2002) referred to as "Realurbanism"[3].

This type of urban planning involves the interpretation of the models through which the current dominant urban cultures produce and reproduce their living space. Land and property markets, both formal and informal, send signals that reflect the dynamics of urban structuration that legislators must take into account. The aim is to obtain a better understanding of the phenomena of intensification - concentration and extension - in a given city (because local context is essential) along with the dilution of urban forms and the effects of improving accessibility with MRT (Mass Rapid Transit) systems that create new polarities. In short, the goal is to understand the factors that determine the locations where households and businesses become established. In practical terms, this approach involves public intervention that is designed to support and influence most urban development strategies and, if possible, improve them (Lefevre, 2010).

The priority in this form of urban planning is not therefore to design an ideal city but, more modestly, to redesign existing cities, through anticipation and support, which means controlling spontaneous urban development. Rather than searching for static models of sustainable urban forms, it is necessary to identify the complex paths through which different urban forms and their related infrastructures will be able to demonstrate sustainability. We must consider the relationships between density, functional and social diversity, urban forms and mobility, to stimulate and encourage, through coordinated urban planning and transport policies, spatial dynamics that generate modalities of sustainable mobility. A perspective such as this

3. Tribillon chose this term as a transposition of Realpolitik, the German neologism, meaning "a system of politics or principles based on practical rather than moral or ideological considerations", according to the Oxford Dictionary (Tribillon, 2002).

leads to a rethink on the tools and modalities of the use and application of public policies. But the current direction is clearly not towards such a move: the set of stakeholders has become more complex, while there is little understanding on how to assess the effect of various incentive systems, which are often unstable and too rarely subject to evaluation. Examples of such systems include: tax exemption systems for rental investment, incentives for establishing businesses in given locations, promoting changes in the financing of housing etc.; such a variety of schemes makes anticipation more difficult.

1.2.3. Sprawl

The first question concerns individual preferences. While the demand for individual housing remains very high, surveys are showing a gradual trend reversal and a return to favour for city centre apartments. As demonstrated in a recent international survey by the Veolia Observatory of Urban Lifestyles and Julien Damon (2011), when density is properly presented - with its corollaries of centrality and intensity - respondents show a clear preference for multi-unit rather than remote housing. This observation led Eric Charmes (2010) to accurately point out that when we cross reference this information with property prices, we expose an acute and unsatisfied demand for central apartments served by public transport, which needs to be met as soon as possible, especially since this demand is consistent (if not inherently) with sustainability objectives.

We should not fight against this demand, but instead manage this impetus so that it can be of constructive help. France, however, is at odds with this impetus, with a category of people that can be defined as "relatively poor", that are limited to buying land that is far from public transport, jobs and urban amenities, on which they construct a house at the lowest possible price. In the Île-de-France department, for example, those seeking social housing are faced with a waiting list of 300,000 applicants, equating to a long delay of about 10 to 15 years. Therefore, many people are forced to move further and further away from city centres, thus increasing their dependency on the private car. This raises the question of who will help bail out these individuals when oil prices become too high, and when, by extension as a "knock-on consequence", their houses are worth nothing?

1.2.4. Density depends on compensatory benefits

The debate on urban density has been blown out of proportion. From the outset, people were intimidated by foreboding tower blocks and an inhuman urbanism. The questions that should have been addressed are: What density level should we aim for? What urban designs would be most suitable? And what are the characteristics of these designs?

For most French cities, it is clear that densification does not apply to centres, but rather to the immediate suburbs that have an amount of available land or vacant plots that are served by public transport and exist in continuity with the city centre, but whose owners may exhibit "retention" behaviour.

The real problem is not land availability (in immediate suburbs and beyond) or the acceptability of densification (which people find desirable if it implies accessibility and a greater quality of life), but the financing (who pays for what?) and the business and governance models that need to be implemented. And since urban renewal is the objective, we have to face facts: the bill will be steep.

It is interesting to note that one of the densest cities in the world, Shanghai, has just been reprimanded by the Chinese central government for the overuse of densification as a source of funding for the municipality. An exception that proves the rule.

1.2.5. Housing

While the construction of social housing has increased over the last three years (2007 to 2010), it still falls well short of meeting the needs in a number of pressurized areas, and the outlook for the coming years is bleak. Thus, low-income families facing a wait of several years for public housing may opt for the "economic" solution that is the purchase of housing on cheap land, far from public transport and the city centre. In France, those forced into taking this route are looking at an average price of between 80,000 and 100,000 euros for the land and a 75m² house. With a 20-year mortgage, the householder's repayment burden is similar to that of renting a two or three bedroomed social house.

So, where does the system fail? Clearly, the source of the problem is myopic and disastrous decision-making at all levels, but especially with regard to the energy costs of remote locations, for the household as well as for the community as a whole. Such households are "condemned" to a reliance on private cars. Of course, petrol pump prices are now cheaper in real terms than in the late 1970s, but this situation will not last indefinitely. It is worth remembering that two thirds of individual houses built each year are "diffuse" or "discrete", or in other words, beyond comprehensive infrastructure and public transport in particular.

The scarcity of land is one argument often given to account for the present status quo - hence the debate on property production and supply - but in the more central suburbs and beyond, this scarcity is often economic, not absolute: land is simply not

put onto the market. Without a strong incentive or obligation, land only comes onto the market due to external events (death, divorce, business failure, etc.). Thus, much criticized "land holding" is nothing more than rational economic behaviour, showing "prudence and responsibility".

Social diversity is managed like a game of cards. When inclusion of the poor becomes an issue, PLUs are blocked. But can we really blame mayors for pursuing this course of action when, once again, their motives are economically rational? There are electoral dividends in resisting SRU laws (regarding solidarity and urban renewal) as well as the coming Grenelle legislation. The challenge of reforming the governance of our cities is clear, the inconsistencies in the current system, with its out-dated objectives, are obvious. However, members of Parliament, often dependent on their local mandate and electorate, are generally unwilling to relinquish any authority.

1.2.6. Governance

Today, there is a clear contradiction between supporters of a relaxation in the regulations and those who advocate the tightening of rules, with both sides proclaiming support for sustainable development.

Recently, this contradiction was vividly illustrated: following flooding in the Vendée (March 2010) and Var (mid-June 2010) regions of France, a tightening of planning rules was solemnly announced, as well as the immediate and rigorous implementation of flood protection plans; alongside which, in a context of new developments declining, an emphasis was placed on the liberalization of the construction sector.

It can be said that the management of space is a complicated subject that has no room for ideologies, however the assertion of priorities and clearly defined arbitration terms for general and special interests is an absolute prerequisite.

The organisation of local authorities, particularly those sections with land use power is a central element. Although in France, there is an additional specificity: an extraordinary fragmentation of planning power; a fact that has been well known for decades, but change is slow. There are three decisive weapons available in this context: the local urban plan, the building permit and the right of first refusal. With few exceptions, and it is always the same ones, this power remains largely devolved to municipalities, which are numerous in France (more than 36,000 communes).

The Grenelle II bill left the door ajar with the systematization of the role of inter-communality in the development and approval of PLUs. Parliament did not vote for this bill due to a broad political consensus between the right and left. The power of communities therefore remains at the heart of urban development mechanisms in France, with the "Grand Paris" project providing a striking illustration of this fact.

2. GRENELLE ENVIRONMENT FORUM

In Autumn 2007, the "Grenelle Environment Forum" conference was held in Paris, which was important for many reasons including its duration, content, the number of participants and their representativeness. The different working groups of the conference produced an extensive legislative work, including the first "Grenelle I" Act that was voted for on 3 August 2009, which laid down the basic principles, and was then followed by the Grenelle II Act, adopted by parliament on 12 July 2010, which translated the objectives into a number of rules and constraints of different types. This has been a gradual process, which is not unreasonable given the issues, but difficulties have occurred in terms of practical application, particularly in the face of strong opposition from major lobbies that have watered (and still are watering) down the original text to a considerable extent (Lefèvre, 2011).

The goal of these laws is the search for a different mode of growth. To this end, the 257 articles of the "Law of national commitment to the environment" changed 19 legislative codes, including many chapters of the Environment Code, the first part of the Town Planning Code, and around twenty non-codified texts (Jegouzo, 2010).

In terms of urbanism, the Grenelle I and II Acts have started a profound transformation of planning law, allowing it to evolve from a limited law for spatial organisation, towards a law that serves major societal goals. This trend had already started with the French SRU, where for the first time the term "sustainable development" emerged, alongside the idea of an urban project supported by a long-term vision.

2.1. The feasibility of a reform of such magnitude

Given the level of ambition, the feasibility of a reform of this magnitude is open to question (Jegouzo, 2010). The risk of relapse, to revert to papering over the cracks, is high; which would constitute a significant precedent and, in addition to the "Copenhagen syndrome", would serve to strengthen the views of those sceptical of all moves towards sustainability. This would result in a further weakening of manoeuvre

room for proponents of sustainable development and advocates for a change in the development trajectory.

A first element to consider is the profusion of new plans and programmes with a legal nature that is sometimes unclear (Baffert, 2010). The previous territorial directives on planning (*directive territoriale d'aménagement* - DTA) are thus duplicated by the territorial directives on development and sustainable development (*directive territoriale d'aménagement et de développement durables* - DTADD), the contents of which have expanded as they now have to ensure "consistency of ecological continuity", "improvement of energy performance" and "reduction of greenhouse gas emissions". The natural risks prevention plans (*plans de prévention des risques naturels* - PPRN) that are maintained, are reinforced by the new flood management plans, which must define, beyond the easement that affects PPRN territories, all prevention, early warning and response measures. As for innovations, there are the regional ecological coherence schemes, framework documents for the protection of ecological continuity ("green corridor" and "blue corridor"), regional wind power schemes, the sewerage schemes and, most importantly, the territorial climate-energy plans (*Plans Climat-Energie Territoriaux* - PCET) and the territorial sustainable development projects. The PCET will have to be adopted before 31 December 2012 – an imminent deadline – by regions (if they have not yet adopted regional climate and energy schemes), departments, urban communities and conurbations of more than 50,000 inhabitants. Since PCET define planned objectives and actions in the fight against climate change, they must to be taken into account by planning documents. As we can see, the development of plans and programmes will take many years, mobilizing many urban fabric stakeholders (Jacquot, Lebreton, 2010).

Similarly, the Grenelle II Act mobilizes a broad range of financial and fiscal instruments. While many of these instruments already exist, the Act will enable their modification towards environmental goals. Thus, taxes and fees for refuse collection may be adjusted according to environmental criteria. Urban agglomerations (of more than 300,000 inhabitants, with an approved urban mobility plan that allows the realization of clean public transport) will be able to implement congestion charging (on an experimental basis) to improve the local air quality and/or reduce greenhouse gas emissions, etc. One major innovation is the possibility of urban transport authorities collecting a flat rate tax on land and property capital gains generated by the building of clean public transport infrastructure.

A crucial issue is the proliferation of perimeters and the independence of the various plans: SCOT, PLU, the urban mobility plan (*plan de déplacement urbain* - PDU), the local housing programme (*programme local de l'habitat* - PLH), etc. (Baffert, 2010). Certain neighbouring countries, such as Germany or the Netherlands, offer valuable lessons on how to re-establish urban planning at the appropriate level, i.e. that of the city, and to coordinate the various aspects of urban development. The issue of urban governance is a prerequisite to reconstructing urban planning and integrating the notion of sustainable development.

Finally, the Grenelle II Act greatly extends the procedural requirements of evaluation, information and public participation (Jacquot, Lebreton, 2010).

It is clear that enforcement of the Grenelle II Act will be spread out over time, since it is complex and costly, and, secondly, that its success depends largely on the willingness of local authorities to seize the new opportunities it brings. Firstly, only a few measures of the Grenelle II Act will be directly applicable. About 180 Council of State or simple decrees are planned so that most of the new provisions can be applied. Secondly, the law imposes assessment and consultation procedures for the development of new instruments, plans and programmes, and for the modification of existing ones, which will necessarily take a long time. For example, the PLUs, created in 2000 by the SRU law to replace the POS, cover only some of the French municipalities. We were previously in a situation where PLU and POS coexisted, whereas we have now entered an era where a number of POSs, SRU-type PLUs and Grenelle-type PLUs will exist side by side. Finally, it is important to keep in mind that, with rare exceptions, it is on an optional basis that the Grenelle II Act introduces these new procedures and grants these new skills to municipalities. For example, local authorities were supposed to adopt their PCETs before 31 December 2010, but no penalties are imposed for non-compliance.

In France, a country of lawyers, where law becomes more complex every day, a proliferation of "litigation pitfalls" may enhance the fear of rising legal uncertainty, which is a plague on controlled urbanism and a blessing for legal firms.

As Montesquieu pointed out, the issue is not so much to have laws that are well made, but to have laws that are actually applied.

2.2. The building sector

The most significant part of the proposed or implemented reforms perhaps concerns the building

sector, with the enactment of emission standards per m² of construction. In new buildings, the "low consumption building" (Bâtiment basse consommation [BBC], which uses less than 50 kWh per m² per year) standards will apply to all buildings from late 2012 (and it is anticipated for public and commercial buildings by the end of 2010).

We must not forget that new urban development is only a small percentage: about 1%, of the French housing stock. Therefore, the main focus clearly needs to be shifted onto existing urban structures, since it is estimated that 70% to 80% of the building stock of 2050 will be buildings that are already in existence today.

The upgrading of the building stock (more than 30 million homes) could be very expensive – a figure of 600 billion euros has been suggested – generating, of course, a significant construction backlog and jobs initially, and then tax revenue later on. However, investors to get the process started still need to be found. We know that public budgets are severely restricted for the coming years. While in terms of the general public, it may be noted that it is generally the lowest income households that live in the most energy inefficient housing, often located far from public transport.

2.3. Urban planning

As the main regulatory document for land use that is enforceable through the issuing of planning permission, the PLU is an obligatory passing point for the achievement of the Grenelle Environment Forum's goals. In this, the Grenelle II Act reform of the PLU is characterized primarily by the need to pursue new goals, to be compatible or to take into account new documents, and to comply with new rules. In particular, the PLU must consider two documents created by the Grenelle II Act: regional patterns of ecological coherence and climate-energy plans. The PLU does not need to be compatible with these new documents; it only needs to take them into account.

The need to comply with new rules is primarily a result of changes to SCOTs. As summarized by Michel Piron, co-chairman of the Operating Committee No. 9 (urban planning) of the Grenelle Environment Forum, "either the SCOT becomes more prescriptive or the PLU focuses more at the inter-community level." The Grenelle II Act has made the SCOT the inter-communal reference strategic document, with which the communal or inter-communal PLU must comply. Thus, PLUs that are encompassed by a SCOT will have to be exclusively compatible with it. This SCOT must, depending on the case, be "compatible with" or "take into account" the superior documents. On the other hand, the prescriptive characteristic of SCOTs is reinforced in a number of areas, including: minimum density, parking supply, architectural standards, rules of conditional urbanization space usage, energy and environmental performance, etc. In principle, PLU and SCOT are always compatible. However, in these areas, the SCOT can impose specific standards on the PLU that are particularly restrictive.

The Grenelle II Act thus initiates a process of consolidation of normative documents and those clarifying the hierarchy of norms. The essential role attributed to the SCOT led to legislative measures to provide a strong incentive to the generalization of these schemes: from 1 January 2017, the creation of new urban developments in areas that are not covered by a SCOT will be prohibited.

Clearly, the objective of sustainable development is a real opportunity to give back to urban planning a solidity and a relevance that has been diminished, whether at the level of SCOTs, which are struggling to emerge, or that of the PLUs, the volatility of which is often high, and for which the principle of inter-communality was rejected by the Parliament. It is hoped that sustainable development will not pay the price for this declining trend of comprehensive urban planning.

CONCLUSION

While a consensus has formed around the idea of a city as a major issue for sustainable development, but also an agent in control of its own fate, it is clear, however, that the responses to the challenge have been insufficient. In France, we even see a level of schizophrenia between the two approaches that remain difficult to reconcile: the Grenelle approach on one side and urban planning by ordinance on the other. Enthusiasm for environmental goals is confronted with an immediate need to "distribute building permits" and "to create GDP".

It then appears useful to consider what is really new in the search for urban sustainability. We have shown that new opportunities have been presented by climate change, the need to preserve biodiversity and the way in which these constraints have been dealt with. But beyond these issues, it is clear that the objective of sustainable development is a real opportunity to give back to urban planning a solidity and relevance that have been much diminished.

Here it is important to take note of the changing context in which sustainable development policies are discussed. This applies to both urban issues and other areas of human activity. Indeed, it appears that the debate on sustainable development

policies seems to have recently assumed a less consensual and more confrontational rationale, pointing to the inevitable trade-offs between environment and growth, and between environment and employment. This development is normal and not only related to the economic crisis. Sustainable development is primarily a system of tensions between three criteria: economic growth, social cohesion and preserving the natural environment, even if the Brundtland report showed that it was useful to seek compatibility between these three pillars. These three perspectives certainly reveal synergies, but also bring conflict. This re-tensioning of sustainable development is also the result of the identification of operational problems and is therefore conducive to a real conceptual recovery that is also pragmatic. The current work on green urban growth, aimed at classifying the conflict and the operationalization of synergies, thus carries the torch of hope.

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