

RESPONDER

Linking SCP and Growth Debates

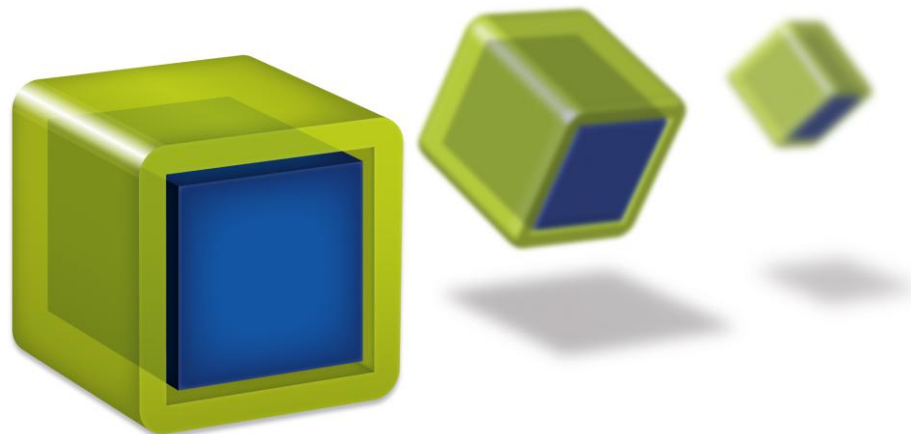
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Background Paper on Sustainable Housing and Growth

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RESPONDER - linking **RE**search and **PO**licy making for managing the contradictions of
sustai**N**able consumption and **E**conomic **g**rowth

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1 Executive summary

After a brief presentation of the RESPONDER project, dedicated to the understanding of the contradictions between Sustainable consumption and economic growth, a few initiatives related to policy making or research are presented either in favour of green growth, questioning economic growth as usual, developing alternative indicators, and searching solutions outside the growth paradigm.

We choose a definition of sustainable housing which is not limited to the house and its life-cycle but includes its surroundings and its implications on lifestyle patterns. The next parts focus on the different visions of sustainability as it applies to housing. The soft interpretation of sustainable housing takes growth of the housing sector as granted, while the strong interpretation questions it. The two different interpretations are related to divergent perspectives on environmental, social and economic sustainability. With regards to environmental sustainability, houses are responsible of one third of energy use, but also of material use, and have a high impact on land use. Social impacts are not limited to lack of quality houses for poor people, but include problems related to prices levels, indebtedness, inequality and de-socialisation. "More houses" is not always the proper solution, especially with the high existing stock. This leads to the question of economic sustainability. The growth of housing cannot be seen as the only approach, as past growth has led to very important economic crises. In Europe there has been a trend of one-person and lower occupancy dwellings, with many unoccupied houses and an important increase of floor space of the newly built stock. Policy proposals towards sustainable housing are then presented based on regulatory, economic or socio-cultural interventions for improving efficiency or for reducing consumption. Proposals in the frame of post-growth/degrowth are also presented, together with the idea that some structural changes are likely needed. Finally we present three contradictions between sustainable housing and growth. First we present how the use of houses as financial assets profited to growth until 2008 but affected the landscape and people's lives. Second the efficiency focus, with substitution of gains, has been good for economic growth, but led also to a failure to reduce absolute energy consumption in housing. Finally, we present the apparent contradiction between the expansion of the city following the rational model of separation of functions, and lately social division, and the goal of sustainable city.

2 The RESPONDER project

The overall aim of RESPONDER is to promote sustainable consumption by exploring novel ways of knowledge brokerage that help to improve the management of potential political, social and economic contradictions with economic growth.

The challenge is not just to bridge the gap between science and policy, but also to improve the mutual understanding -or possibly understand the irreconcilable point of view- between the “pro-growth community” (i.e. economists and policy makers oriented towards growth as an overarching policy goal) and the “beyond-growth community” (i.e. scientists oriented towards the limits to growth debate or de-growth).

RESPONDER aims to improve the understanding and knowledge transfer between these groups by using participatory systems mapping as a core methodology. So-called system maps serve as the basis for systematising empirical findings, questioning different model assumptions, analysing the effects of different policy options and identifying new research questions. Knowledge brokerage means that the project will not conduct new research in this area, but exploit existing research by new integrative modalities of linking research results to policy-making. In synthesis, RESPONDER:

- Links the sustainable consumption and growth debates: its overall aim is to promote sustainable consumption by exploring novel ways of knowledge brokerage;
- Links four communities: research, policy, pro-growth, and beyond growth;
- Aims to improve mutual understanding and knowledge transfer between these groups by using participatory systems mapping, in a series of Multinational Knowledge Brokerage Events on five sectoral policy areas – food, housing, household electronics, mobility and private savings/debts.

3 Reconciling economics and sustainability

A number of initiatives, at all levels of policymaking and research support sustainable economic growth or sustainable economic degrowth to ensure that it does not jeopardise the well-being of the planet and of future generations. This section briefly outlines some of the key messages presented in a selection of recent initiatives promoted by the UN, OECD, EU individual EU Member States or independent initiatives. Not all of these proposals address the topic of sustainable consumption at great length. Nevertheless, most of them acknowledge that technological solutions are unlikely to solve the sustainability challenge and that behavioural change and alternative lifestyles will have to play major roles.

3.1 Initiative favouring sustainable economic growth

3.1.1 UNEP Green Economy Initiative

Launched in late 2008, the UNEP-led Green Economy Initiative aims to provide the analysis and policy support for investing in green sectors and in greening environmentally unfriendly sectors. UNEP defines a green economy as one that results in “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities” (UNEP, 2011:16). In short, a green economy values and invests in natural capital, being low carbon, resource efficient and socially inclusive. In

the report Towards a Green Economy “sustainable consumption” is linked to increased resource efficiency in consumption patterns and the purchase of green goods and services. A case is made to invest two per cent of global GDP in greening ten key sectors of the global economy in order to shift development and unleash public and private capital flows onto a low-carbon, resource-efficient path. The Green Economy report shows how *a green economy presents a new engine of growth*; how it generates new decent jobs; how it can reduce persistent poverty across a range of important sectors; and how this shift can be achieved. The report seeks to motivate policy makers to create the enabling conditions for increased investments in a transition to a green economy. UNEP’s concept of a green economy does not replace sustainable development; moving towards green economies should unleash potentials to achieve sustainable development and poverty eradication on a scale and at a speed not seen before.

3.1.2 OECD Green Growth Strategy

At the OECD Ministerial Council Meeting in June 2009, Ministers acknowledged that “green” and “growth” policies can go hand-in-hand, and asked the OECD to develop a Green Growth Strategy that brings together economic, environmental, social, technological, and development dimensions into a comprehensive framework. The publications “Towards Green Growth” and “Towards Green Growth – Monitoring Progress: OECD Indicators”, published in May 2011, provide an operational and flexible framework for governments in developed and developing countries on how economic growth and environmental protection can be achieved. The overarching goal is to establish incentives or institutions that foster innovation, investment and competition that can *give rise to new sources of economic growth that is consistent with resilient ecosystems* – with the ultimate goal to increase well-being. The strategy explicitly calls for new production and consumption modes in order to sustain and raise living standards. Equity concerns are acknowledged but it is recommended to tackle them in separate initiatives together with other social issues of sustainable development agenda. Overall, green growth is considered as a subset of sustainable development, rather than as a replacement.

3.1.3 Europe 2020

Europe 2020 has been launched in 2010 as a successor agenda of the Lisbon strategy. Proposed by the European Commission and endorsed by the European Council as a ten-year strategy of smart, sustainable and inclusive growth, it follows a consistent approach to converge the wide range of economic, social and environmental policies the EU is striving for. Five headline targets have been agreed for the whole EU for 2020 – regarding employment, R&D/innovation, climate change and energy, education and poverty/social exclusion. Similarly to the Lisbon strategy, the new strategy highlights the need to decouple economic growth from the use of natural resources, thus achieving “sustainable growth”. This reconciliation is tackled under the Flagship initiative “Resource-efficient Europe”. Equity issues are addressed by the Flagship initiative “European platform against poverty”, but not explicitly targeted. Europe 2020 and the flagship initiatives serve as the umbrella of the European Sustainable Consumption and Production Policies..

3.2 Initiatives questioning economic growth as usual

3.2.1 German Study Commission on Growth, Wellbeing and Quality of Life

The Study Commission of the German Parliament on “Growth, Prosperity, Quality of Life – Toward Sustainable Development and Social Progress in the Social Market Economy” is expected to determine the importance of economic growth in the economy and society with the aim of developing a holistic well-being and progress indicator. It also aims to investigate the possibilities and limits of decoupling growth, resource use and technological progress. Final results are expected by the end of the legislative period in 2013. The study commission consists of 34 members, including 17 members of parliament and the same number of external experts, appointed by the political groups according to the majority.

3.2.2 Growth in Transition

“Growth in Transition” is an Austrian initiative, which brings forward the question on what kind of growth is desirable for the future and which goals are targeted with it. Formed in 2008 by the Austrian Ministry of Agriculture, Forestry, Environment and Water Management as a stakeholder dialogue, the initiative intends to trigger a dialogue among institutions and people about how we can shape a transformation process towards sustainability. It also aims at contributing to current EU and international processes and at informing the Austrian public. The initiative covers different institutions that organise activities focusing on the same core issue but from different angles. It currently consists of 15 partner organisations – seven Austrian ministries, three Austrian provinces, Social Partners, companies, Oesterreichische Nationalbank and organisations from the civil society. Sustainable consumption has played an explicit role in an international conference with more than 550 participants held in January 2010. Findings exist from a workshop series 2009/2010, the conference and current work on a Policy-Science-Stakeholder Dialogue.

3.3 Policy initiatives to better measure progress

3.3.1 Beyond GDP

In 2007, the European Commission initiated “Beyond GDP” – a process that led to the adoption of a communication in 2009 with a concrete roadmap for developing new environmental and social indicators to measure the prosperity and well-being beyond GDP. The roadmap suggests five key actions to improve indicators of progress in ways that provide an improved basis for public discussion and policy-making: complementing GDP with environmental and social indicators; near real-time information for decision-making; more accurate reporting on distribution and inequalities; developing a European Sustainable Development Scoreboard; and extending National Accounts to environmental and social issues.

3.3.2 Commission on the Measurement of Economic Performance and Social Progress

French President Nicolas Sarkozy set up this high-level Commission in 2008, chaired by Joseph Stiglitz, recipient of the 2001 Nobel Prize in Economics. The Commission’s final report was published in September 2009 and contains chapters on classical GDP issues (e.g. addressing the importance of improving existing measures of economic performance before going beyond GDP); quality of Life (e.g. emphasising the importance to complement measures of market activity with measures of people’s wellbeing); and Sustainable Development and Environment (e.g. following the logic of a “wealth” or “stock-based” ap-

proach to capture sustainability). The report provides a general overview of the state-of-the art in the respective areas and comes up with 12 key recommendations.

3.3.3 OECD's Project on Measuring Progress of Societies and the Better Life Initiative

The OECD initiated a global project on "Measuring the Progress of Societies" in 2004 to foster the development of key economic, social and environmental indicators in order to provide a comprehensive picture of how the well-being of a society is evolving. The project aims to encourage the use of indicator sets to inform and promote evidence-based decision-making, within and across the public, private and citizen sectors. The Better Life Initiative, launched in 2011, follows a similar objective of understanding what drives well-being of people and nations and what needs to be done to achieve greater progress for all.

3.4 "Prosperity without Growth" and Degrowth

3.4.1 New arguments for a steady-state economy

In 2008 and 2009, Peter Victor and Tim Jackson presented the foundations of an ecological macroeconomics without growth. In *Managing without Growth* and *Prosperity without Growth* they attempted to show how a non-growing economy could be stabilised in terms of stable employment levels, external trade accounts, and decreasing indebtedness. They built on the previous debate on a steady-state economy going back to Herman Daly's Steady State Economy of the early 1970s.

3.4.2 Degrowth movement

The degrowth movement goes further. It is capturing part of the growth-sceptical debate searching for solutions in the context of voluntary shrinking of production and consumption in developed societies for social justice and ecological sustainability. The economist Nicholas Georgescu-Roegen is considered as the creator of the concept of degrowth already in the 1970s, although in his view degrowth was not conceived as a voluntary societal idea, as put forward by the degrowth movement since 2001. The degrowth movement has been experiencing a popular upswing in recent years and is particularly active in France ("décroissance"), Spain ("decrecimiento") and Italy ("decrescita"). It comprises scientists as well as activists, who advocate an equitable downscaling of the economic system in order to increase human wellbeing and enhance ecological conditions at the local and global level, in the short and long term (Schneider et al., 2010). Reduction of consumption and production is not supposed to imply a decrease in well-being. Well-being can rather be achieved through non-consumptive means, such as work sharing, more time for friends, family, culture and the community. Research & Degrowth launched the first international Degrowth Conference that took place in April 2008 in Paris and the second one in March 2010 in Barcelona. The third one is planned for early 2012 in Venice. Several books and special issues have been published recently (also in English). The proposal of degrowth puts emphasis on the non merchandized relations, the good life, sharing, the respect for cultures, making equality possible in the world, and deeper democracy.

4 Sustainable housing¹

4.1 One main message: Is there housing overcapacity in Europe?

Given the trends in population growth (with European population likely to peak by before 2040, (Scherbov et al. (2011))), slight depopulation will become a permanent feature of many European regions, as it has happened in Japan. Longer life expectancies will compensate only to some extent the under-replacement birth rates. What migration trends will be is difficult to predict.

Slight depopulation supports the view, argued below, that in general there is in Europe an excess of housing space. At the same time many people are poorly housed. There is excess housing capacity compared to needs, and at the same time low capacity utilization.

A social and environmental “urban reform” is required in many European regions based on local initiatives but also on large scale public policies.

The environmental aspects are linked not only to housing but also to urbanisation patterns. Below we consider statistics on energy use. We mention counterproductive rebound effects that arise from efficiency improvements (as emphasized by the degrowth literature). We insist on the environmentally-costly pattern of car driven urban sprawl (often resting ideologically still in Le Corbusier’s separation of functions). We notice the unused excessive number of secondary houses, and also the absurd building booms and infrastructure development in some European countries that have contributed to financial crises. Debts then stimulate further calls for growth, and therefore for more buildings, more cars, more landscape destruction, more energy use.

4.2 Definition of sustainable housing

A commonly agreed definition for sustainable housing does not exist.

Housing may be seen as individual homes taking into account the construction, design and technical functioning of dwellings and the use of environmentally benign building materials. This approach fails to take into account the integration of housing in its surroundings and the wide implication of the housing design to lifestyle patterns on the long-term. We will choose here a broader definition, relating to the problem of housing in general. This broader definition considers the role of dwellings in the urban environment and the way people live in and around their homes. Such wider perspective is taken, for instance, in a statement of the Irish government: “Sustainable communities have a high quality natural and built environment, with a dynamic and innovative economy, good transport, supportive community and voluntary services, and are environmentally sound” and “they meet the diverse needs of existing and future residents, are sensitive to their environment and contribute to a high quality of life” (Department of Environment, Heritage and Local Government, 2007).

¹ This chapter is partly based on “CORPUS Discussion Paper 1 on Sustainable Housing” (Strandbakken, 2011).

There is the question of what the Irish government meant by a dynamic and innovative economy, good transport and high quality of life, this leads us to the next point.

The question of soft (or weak) or strong sustainable housing is at the heart of the contradictions that we intend to address in RESPONDER. In the soft version of sustainable housing, economic growth is an immovable goal that cannot be challenged, and in this line the building sector and housing consumption need to increase in order to reach sustainability while changing its nature. In the strong version of sustainability, economic sustainability is disconnected from the need for economic growth. But in all cases the goal of sustainable housing includes general social, ecological and economic well-being but these goals are usually understood differently.

4.3 Environmental issues with housing

In the housing sector, energy is one of the key sustainability issues – in various ways: electricity consumed to run household appliances and energy used for space and water heating. Energy consumption in buildings – for space heating, water heating and use of electric appliances – represents approximately 40 % of total final energy consumption and 36 % of CO₂ emissions in Europe (EEA, 2010). Space heating accounts for 67 % of household energy consumption in the EU 27, followed by water heating and appliances/lighting. Hence, the reduction of energy consumption in and through the built environment is a paramount objective in the housing sector. Important strategies to accomplish this goal are energy saving and energy efficiency improvements on the demand side.

According to the European Environment Agency (EEA), between 1990 and 2008, household final energy consumption increased by 13.0 % in EU-27.² This increase was due to rising personal incomes permitting higher standards of living, an increase in comfort levels and broader ownership of domestic appliances. About two thirds of household energy demand stems from space heating and cooling, which can vary substantially from year to year depending on climatic variations. The demand for electricity from appliances and lighting has increased most rapidly in percentage terms in recent years – from a share of 13% to 16% of final household energy consumption (Lapillone et al., 2011). A growing demand for single households and a decreasing occupancy rate per dwelling in all EU-27 (Dutch Ministry of Interior, 2010) further enhance the demand for energy in the housing sector.

Dwellings themselves have become more efficient. The average energy consumption per dwelling was reduced in 2/3 of European countries, in particular in most new member states (Lapillone et al., 2011). However, efficiency improvements have not led to an absolute decrease in energy demand due to a growing number of dwellings (ibid.) and to new forms of consumption. The main reasons behind the increase in electricity consumption are the steady increases in the numbers of appliances (TV sets, dishwashers, consumer electronics and information and communication equipment – and a rising demand for air conditioning and cooling technologies, especially in the Mediterranean countries). The share of renewable is slowly increasing. In 2005 the share of renewable energy in the overall production of en-

² See <http://www.eea.europa.eu/data-and-maps/indicators/final-energy-consumption-by-sector-1/final-energy-consumption-by-sector-6> (last accessed 15 February, 2012).

ergy in the EU-27 was 8.5 %, and in 2010 was 11,6 % (Beurskens et al., 2011). This was deemed in line with the EU-27 “2020 policy” target that aims to achieve a minimum 20% share of renewable energy by 2020 in the overall energy consumption. Renewable energies include photovoltaic, solar panels, wind turbines, hydropower and bio-fuels. However the inclusion of large scale hydropower, and furthermore agro-fuel is questionable. Agro-fuels are often produced in ecological sensitive areas and reduce space for agricultural land. They have a low EROI (energy yield) and they increase the HANPP (human appropriation of net primary production of biomass) to the detriment of the needs of other species.

In general the replacement by renewable energy sources would not be feasible or have important impacts if consumption patterns remain high in housing.

Apart from direct energy consumption in homes sustainable housing covers other ecological issues, such as:

- Indirect or embedded energy: consumption of energy through the production of houses/building structures and their transport of the heavy materials until the site of construction has important impacts on energy consumption. Cement production is for instance an important energy consumer. Indirect impacts of housing have increased.
- Material use. Housing is responsible of very high material flows. Around one third of total material use in Europe is for housing — mainly construction material — with consequent negative impacts on land and biodiversity from mining and waste disposal. Although construction and demolition waste in the EU is increasingly recycled, the resulting savings only substitute a fraction of construction resource use. In Denmark where more than 90 % of construction and demolition waste is recycled, this still only contributes around 6 % of the materials used in new construction (EEA 2010). Cement is said to generate 5% of CO₂ emissions in the world³. The design of the house will induce hard infrastructure, especially if it is outside the already existing energy and public transport network. Calculations of social metabolism (MEFA, materials and energy flow analysis) from the building and infrastructure sectors should become ingredients of public debates and policies. For instance, the Spanish anomaly until 2007 of material flows in excess of 20 t/cap/year should have become a matter of public debate and policy intervention. It is also interesting, for a better policy, to heed the complaints of citizens’ groups in some regions of Europe against what they perceive as excessive pressure from quarries and the cement industry on the environment and on their own rights and welfare as citizens. Often, the authorities still dismiss such resource extraction (and waste disposal) conflicts as NIMBY phenomena, when they are better interpreted as very relevant harbingers of the future. Environmental movements are strong forces for sustainability.
- Landscape deprivation. In 2006, 4% of land is sealed in Europe. Housebuilding, especially diffuse residential sprawl, vacation homes, and related infrastructure are responsible for a high share of land-take in Europe. Total annual land-take for artificial areas has increased to 0.61 % in the period 2000 to 2006 compared to 0.57 % per year in the previous decade, but land-take for housing has slowed slightly. Most of the new artificial areas were formerly agricultural land and forests, al-

³ [The Cement Sustainability Initiative: Progress report, World Business Council for Sustainable Development, published 2002-06-01](#)

though re-utilisation of developed urban land — contaminated and non contaminated brownfield sites — has increased, a sign of better management of land development patterns

- water use. Water is another important impact of housing. An average of around 100–200 litres of tap water are used per person per day in most European countries, but if the amount of water embedded in products such as food, paper and cotton clothes is included, water use is often 10–20 times higher (EEA, 2010).
- Waste. Waste generation from households is projected to increase.

Within ecological issues the difference between pro-growth and beyond growth is the scale of the problem analysed. In the pro-growth analysis the solution will largely be solved by the development of more efficient techniques in housing. In this case one has to answer the challenge of the rebound effect. The beyond growth believe that one should also challenge the level of urbanisation, develop more co-housing, have smaller houses on average, have houses more integrated with their environment , and increase the degree of utilization of the existing stock of housing.

The environmental pressure of the housing sector has reduced with the crisis of 2008.

4.4 Social issues related to housing

A first approach in social sustainability in housing concerns “development”: dealing with urban poverty, housing for unemployed, for young people, housing of immigrant populations and so on; in short, policies providing suitable dwellings for vulnerable groups. Some 30 million people or 6 % of the population in the EU 27 area were reported to suffer from severe housing deprivation like noise, lack of space (overcrowding), crime, pollution or other housing related problematic conditions in 2009. More than 12 % lived in households affected by high housing costs. Families with small children were more affected by poor housing conditions than households with only adults. Less than 4 % lacked basic sanitary facilities, but problems with leaking roofs (16 %), and darkness in the dwelling (7 %) were more widespread (Eurostat, 2011). Actions include both construction programs (new residential areas) and – possibly more plausible from the environmental point of view – rehabilitation and upgrading of existing homes. The main focus has to be on the dwellings’ technical standards related to water, sewage, insulation, size, and more “quality” in general.

Modern sustainable housing initiatives and policies should aim to make a contribution to cultural policies of diversity and “peaceful coexistence” by developing areas with economically and ethnically mixed populations. This is not what is happening with the trend of development of gated-communities (Grant & Mittlestead, 2004). The basic demands for the technical quality of the dwelling must be met at acceptable costs, even though this is not enough. Governments and municipalities should consider, apart from environmental standards, other socio-cultural aspects like school quality, meeting places, crime rates.

A fundamental aspect is the cost of housing, largely due to the overuse of houses as financial assets, which affect nearly one eighth of the total EU-27 population. This slice of population pays, on average, 40% or more of their disposable income. One aspect of this is the mortgage payments in some areas of Europe affected by the recent building spree. In this respect the sustainable housing that has been developing has mainly been expensive private developments. There is a strong necessity to develop eco-

logical houses, which price shall not exclude a large part of the population (Arman et al. 2009). There are two ways: subsidies for the ecological benefits (possibly including payments for “water harvesting”, collection of solar energy) and simpler designs of houses.

There is the problem that the improvement of housing is not always allocated to the population in need. The trend of increase of floor space per person, the development of single person flat is important in areas and populations that have already exceeded the sustainability point. As shows Jin Xue (2010), the standards of Copenhagen, with an average of 51m² per person, cannot be applied to Hangzhou, China, which has surfaces of dwellings of 23m² per person, because it would mean an important ecological overshoot and to too high land occupation. The high standards of the west make the social improvements for those in need impossible.

While there is a lack of renovation, there is generally no shortage of dwellings in Europe. There are many houses that used only some part of the year (secondary houses, 10 % in France for instance, some of them used 1 week per year (EEA 2005)). Offices and “pieds à terre” in city centres are unused the main part of the days and affect city conviviality and access to housing. Some houses have very few inhabitants (more than 100m² per person is not uncommon in Europe), and some are simply left empty. (See the key data in section 4.6).

One primary social concern is thus the unfair allocation of houses. Social housing is not always allocated to the ones really in need. Home ownership or renting favour the wealthier. The model of housing of the upper socio-economic strata of the population is of a “positional” type (to use Fred Hirsch’s concept), and cannot be copied by everyone. It brings frustration and a perceived necessity for economic growth. The level of inequality in housing – and the so-called relative deprivation - can even affect mental health⁴. This problem seems more acute for housing inequality than for car inequality for instance (Ellaway et al. 2004). There is evidence that the type of housing has an important influence on psychological health of inhabitants (Evans et al. 2003). Convivial surroundings are a very important necessity related to sustainable housing.

Houses are important consumption items to show off social status, similarly to cars. This has an important social (as well as ecological) cost. On these issues policy makers have an important responsibility with the example they deliver themselves to the general population.

Additionally, some studies show that a high level of discrimination exists in renting and selling, from an economic as well as ethnic point of view (Bonnet et al 2010).

4.5 Economic issues in relation to housing

The economic dimension is the one which would give rise to the most diverging views. The recent years have been years of important economic growth in housing, but at the same time also witnessed the 2008 crisis which affected deeply the housing sector and in follow-up the whole economy.

⁴ http://www.euro.who.int/__data/assets/pdf_file/0012/100821/E92227.pdf

In the mainstream view, favourable to economic growth for economic sustainability, the increase in housing prices is a positive event which has been very much linked to economic growth as it happens right now in China and India. It increases the wealth of house owners and merchants, and enables banks to offer credits that can be used for consumption, as Friggit (2011) has showed for the French case. This consumption represented from 2000 to 2009 as much as 15-20% of the GDP in France, and was made possible for house sellers, often older. Other segments of the population, mainly young and poor, had sometimes no property to sell. The fictitious increase in the housing patrimony (“fictitious” because housing prices are very sensitive to economic cycles) makes house buyers lose a larger share of their income, and made them highly indebted. In France the prices hike of the 2000-2008 period created a doubling of the levels of indebtedness of households. Concerning economic sustainability, housing market fluctuations can become important and be at the source of wide economic crises as history teaches us (Reinhart & Rogoff, 2009).

The pro-growth discourse defends the idea of more urbanisation as an answer to housing prices hikes. However data on this is counter-intuitive. Places with the most houses built can have the worst house crises and difficulty of access to houses as in Spain. There are three possibilities to provide more housing: building more with the private sector, building more with the public sector (social housing) or focusing on the existing underused stock, the second house sector and the empty houses.

For the soft sustainability paradigm, the buildings sector is an important piece of the game in order to create a sustainable growth with green and social jobs. In this line, sustainability is key for the concept of “ecological modernization”. The ecological society shall be modern, rich and technologically advanced (Huber 1982 and Janicke 1986). It seems that recently ecological modernization in housing takes the name of “smart house” or “smart city”⁵. According to Caragliu et al. (2009), a city is smart when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance. It is also a strategic device to market a city, enhancing its competitiveness. As introduction of the smart city conference in Barcelona (29/11-2/12 2011, <http://www.smartcityexpo.com>), the smart city is the new paradigm for sustainable growth in the 21st century.

The “Smart” project can be criticised for putting aside the redistribution, for neglecting the Jevons paradox in a context of smart growth policies, for planning the total urbanisation with large urban centres, for taking citizens as mere conveyers of remarks for the consultation and providers of data. The omnipresence of the technology solution is criticized for creating a too high dependence on technology that does not apply the precautionary principle. We wonder if the smart city is about including all our activities within the market system through a system of services mainly provided by large IT and utilities companies. It seems to leave aside the idea of emphasizing housing and transport as public services.

Strong sustainable housing means instead limiting urbanisation before it takes over the whole planet, sharing resources fairly and rather reduces the housing stock and the building sector. In this vein, citi-

⁵ Ironically, the use of the word smart may have its origins in the US Smart Growth movement of the late 1990s, which advocated new policies for urban planning, with more compact habitat and slower car speeds.

zens are expected to contribute to city decisions (and not just be consulted or seen as information providers) and to the elaboration of appropriate technologies they can actually master and keep within limits.

As opposed to a smart city, based on the fast digital exchanges, the idea of slow cities is about taking more the time to live and stay away from competition. Paul Virilio analysed very well the link of speed, especially digital speed, with exclusion and assault to human relations.

4.6 Some Key trends in housing

Dol & Haffner (2010) provide a collection of data challenging the view that there a general lack of housing stock. Here are a few findings:

Low occupancy of dwellings in Europe

There an overall tendency in Europe to reduce the number of person per households: from 3,9 in 1980 in Spain to 2,7 in 2008, in Finland from 2,6 to 2,1. In 1981, 26% of Spanish households were 5 persons, it has become only 6% in 2008. On the contrary the 1 person household went from 10 to 18%. At the other extreme, there are in Sweden in 2008 44% of single person households, but they were already 33% in 1981.

Large share of unoccupied dwellings

Around 2009, nearly 10% of conventional dwellings are unoccupied in Finland, 11% in Czech Republic but only 1,7% in Sweden or 1,5% in Holland. But the highest inoccupation rates are in Spain with 22%, 33% in Greece, 20% in Italy with data from 2000 (more recent data was not available, which would be interesting considering the construction boom that occurred).

Increase of floor space even in most advantaged countries

Although there are great disparities in floor space per person across European countries (from 66 m² in Luxembourg to 15 m² in Romania), the general clear tendency is a rise of this indicator in Europe. It is important to mention that the increase of size is not only occurring in accession countries. In Luxembourg new dwellings (with an average of 180m²) are 35 % larger than in the total stocks. In Holland there is an increase of 18% in new dwellings compared to the total stock. Only Italy makes the exception with new dwellings that have a smaller size (because household sizes have reduced tremendously there). If we combine this trend with the reduction of the number of inhabitants per households, the rise of m² per person is a strong trend in EU.

Increase of number of dwellings

It is very difficult to compare the number of dwellings in each country because of statistical discrepancies. The number of dwellings rose tremendously in some countries, an extreme case is Spain where the number of dwellings increased by 18% from 2000 to 2008 to reach the top rate of 544 households per 1000 inhabitants. In 2006, 2007 and 2008, 14 dwellings were completed per 1000 inhabitants, a high rate in Europe.

4.7 Enhancing sustainability in housing

Bergman et al. (2008) have identified the systemic constraints that keep the housing sector locked in the present pattern of unsustainability. These characteristics are to be acknowledged when designing policies that aim to enhance sustainability. Paradigm shifts and structural changes are needed to improve the sustainability of the housing sector, which traditionally presents “low levels of innovation, mass production from large suppliers, and separation of design from construction, all incompatible with social and ecological optimisation” (ibid.). At present, a few dominant actors generally encourage small gradual changes instead of pursuing more radical leaps towards sustainability (Lovell, 2007).

As far as the consumption side of the housing sector is concerned, it is possible to identify several areas for improvement of behavioural change. Some consist of improving the efficiency, having more energy efficient homes (better insulation etc.) or more efficient appliances. Some consist of reducing consumption: having a smaller house, closer from services, reducing the number of appliances.

As for policy instruments, a standard approach is to divide measures into the following types of interventions (UNEP 2001):

- Regulatory, i.e. prohibiting unsustainable practices and making sustainable ones mandatory. Examples in the housing sector are energy labelling of buildings, mandatory building codes, efficiency standards for home appliances, phasing out of incandescent light bulbs, etc.
- Economic, by stimulating certain outcomes or triggering consumption behaviours, temporarily or permanently. Examples are public funding programmes for solar panel and photovoltaic installation; support schemes (e.g. cheap loans) for energy saving refurbishments; guaranteed feed-in tariffs for renewable energy; etc.
- Social-Cultural, i.e. awareness raising, education, and information. Examples are voluntary certification schemes for buildings, such as the German DGNB certification scheme⁶, or information campaigns on energy saving refurbishments addressing home owners.

These measures are not always embedded in an overall strategy at country or EU level. A full integration of objectives and related measures is needed in order to find a comprehensive strategy that addresses sustainability on the consumption and on the production side of the economy. They mainly focus on the development of sustainable houses and sustainable appliances. Other policies defending economic growth stress the importance of fair access to housing, thus focusing on social housing policies.

However there are other types of policy within the beyond-growth/degrowth framework (some of which were developed at the Barcelona conference⁷). The social and ecological issues associated with urban sprawl need to be taken seriously into consideration. One of the ways to reduce the urbanisation of natural territories and sprawl in general is avoiding the further expansion and development of road, energy or water infrastructure. Another way is by using more efficiently the existing housing stock and

⁶ See http://www.dgnb.de/_en/certification-system/index.php (last accessed 15 February, 2012).

⁷ <http://barcelona.degrowth.org> (last accessed 12 March, 2012).

land which has already been developed. This implies avoiding the further urban expansion on agricultural land or natural spaces and favouring brownfields instead. This would avoid colonizing new wild places and support more compact habitat that favours sustainable transportation. Land use planning, or zoning can be used to restrict urbanisation outside public transport nodes, to bring back nature in the city and keep neighbourhoods compact.

Another proposal is to use empty houses. In France an ordinance of 1945 gives the possibility of requisition of empty houses by the government. A general inventory of empty houses is the first step, then empty houses could be used for social housing. In line with the idea of a right to housing some French cities like Grigny or Bobigny forbid expulsions. Each case is followed by a social body. Measures to prevent empty flats can include strengthening squatters' rights.

Promotion of house-sharing is another policy to better utilize the existing stock of housing. It can be achieved through different ways. Shared flats are most popular among students. Sharing a flat with a family-community is based on the same principle. The family type of house-sharing is losing ground but the flat-sharing, mainly as a strategy to reduce costs, is on the rise in Europe⁸.

Another aspect is co-housing, which emerged in the Northern countries, and is slowly gaining ground in southern Europe. It implies designing of buildings for communal use (Lietaert, 2010).

Promotion of house-sharing can also be done by positive demonstrations and more experimentation, and possibly by supportive legislation. Setting up the maximum dwelling area per person or taxing unused square metres could be one approach (or subsidize sharing). The tax can be progressive in terms of square meters per person used or rented out (Schaff 2011). The laws usually state a maximum occupancy rate, which is in line with pro-growth policies. From a degrowth perspective the reverse is proposed: a minimum occupancy rate. Another proposal is to increase subsidies or reduce taxes for house and goods sharing, or for the hospitality towards homeless people. Finally, house sharing (and better contacts between neighbours) leads to goods and equipment sharing.

One of the difficulties for sharing flats and housing in general is the lack of legislation that favours the communal ownership. Sharing thus needs to be included within the normality of jurisdictions. This implies recognition of communal property rights under national law and more generally the democratic management of alternatives to private property and its regulation. This might imply establishing a limit on the number of houses an individual may own, in order to reduce prices of housing, make more houses available and limit impacts of the mono-functional tourist urbanisation on the landscape.

Sustainable housing needs to be thought in the context of the transition towards ecological cities, meaning converting car-based infrastructure into walking, cycling and open common spaces, relocalizing urban life and developing its multi-functionality and public spaces, fostering proximity relationships through urban redesign-reorganization, smaller scale and distance, use of regional materials and bioclimatic design. Ecological cities are also understood as all-inclusive, rather than as a rescue island for a gentrified minority.

⁸ More than 30% of students share flats in East-Germany although the phenomenon was virtually non-existing before 1989 . Flat sharing has received only very limited attention from researchers and policy makers.

Among the measure certainly some structural measures concerning economic institutions that lead to housing bubbles and unjust money creation and allocation through the housing need to be elaborated. The idea being to have houses used for the basic need they fulfil and not as financial assets.

Another important aspect is the support of experimentations of simpler house design, with compost toilets, water collection, solar roofs, straw bale houses, as the present legislation is very often limiting those developments.

5 Exploring links and contradictions between sustainable housing and growth

5.1 What is the impact of growth of financial investment in housing?

Energy efficiency housing offers a roof but also increasingly became an area for financial investment. Some aspects are structural: a large part of the credits given by banks are dedicated to this important purchase which is the acquisition of the house. For this reason housing is very much linked to money creation. In the decade before the 2008 crisis, the price of houses has been climbing in many European countries, in relation with the financial investment in housing.

In the same time, governments have encouraged the development of the housing sector, including large private investments in the housing sector. This is largely because the construction sector is considered an important driver of economic growth. In the recent housing boom in Spain, according to Naredo, up to 70% of credit allocated to the private sector went to the building sector creating an unprecedented economic growth in the country until 2007. This boom benefited the wealthy part of the population primarily creating gentrification in cities, enabling, thanks to favourable legislation, the development of rich suburbs, and the spread of rich secondary houses or lofts as well as sharp increase of price of houses. Many investments in housing have failed, apartments and house remain unsold.

In these years a large part of the European inhabitants could become home owner thanks to the credit facilities given by banks, even though the situation differed very much depending on the country. In Spain these financial investments and credit facilities had an important impact on the landscape with the constructions of large urbanization especially along the Mediterranean coast, but impacts on landscape came also from the infrastructures, for instance transport infrastructures, around the houses themselves.

We would have expected this economic growth led by debt-fuelled private investment to solve the housing problem. This has not been the case. On the contrary, first the sharp increase of prices made it difficult for many poor families to have a house. And in 2008, the so-called housing bubble collapsed. Many borrowers could not honour their debts and sometimes lost their home. A large stock of new housing could not be sold at their expected value and sometimes remain empty. Banks are owners of such “toxic” assets. Regional saving banks are disappearing and there is a concentration of the banking system.

Reinhart and Rogoff (2009) show that the six major historical episodes of banking crises in advanced economies since the mid-1970s were all associated with a housing bust. Based on 1960–2007 cross-country data from the Organization for Economic Cooperation and Development (OECD), Claessens, Kose, and Terrones (2008) show that output losses in recessions accompanied by housing busts are two to three times greater than they would otherwise be. Moreover, housing busts tend to prolong recessions, as falling house prices act as a further drag on household consumption and residential investment while putting financial intermediary balance sheets under stress.

The law of the soil in Spain and other countries has helped the development of urbanization with all their ecological and social impacts. In Spain the share of construction in the economy rose from less

than 8% of GDP at the end of the 90s to 12.3% in 2007. This rapid rate of construction led to enormous overbuilding, which meant that a collapse was inevitable. This is clearly shown in the figures for Material Flows in the economy, that would allow to compare the share (in tons) of building Materials in different European countries. There are supposed to be 2 million empty houses in France, 4 millions in Spain. At the same time, there has been a surge of secondary houses in many EU countries in the last decade. In France, for example, construction of second homes increased by 10% during the past decade, thus representing 73% of total tourism lodging capacity, although only 18% of all nights spent by resides in 1999 were in second homes. There are policy suggestions from civil society (e.g. “Sostre Cívica” in Catalonia, “Droit au logement” in France) such as social housing and leasehold cooperatives, that should be debated with authorities and other stakeholders to cope with this situation.

5.2 How have economic growth and lifestyles changes offset the housing energy efficiency and material efficiency improvements achieved during the last 20 years?

Energy efficiency in the EU 15 increased steadily from the mid 1990s (although the rate of improvement has since slowed). In 2004 there was a 12% improvement with respect to 1990 and energy consumption for space heating per m² (space heating is the largest component of energy use in virtually all Member States, accounting for 67 % at the level of the EU 15) decreased in virtually all member states. At the same time, in the period 1990–2005 per capita household energy consumption increased in the majority of EU member States and by 11.6 % for the EU 27. The rise in electricity consumption has been even greater, at 31.1 % for the EU 27.

Studies from EEA show that lifestyle changes have offset energy efficiency improvements achieved. Three factors impact the average annual consumption per household:

- the increase in the average size of dwellings; The average area of a dwelling unit rose from 86 to 92 m² in the EU 15 between 1990 and 2007. These trends have largely off-set the gains made in the energy efficiency of buildings
- the spread of electrical appliances and central heating, i.e. the influence of increased appliance ownership; While the energy efficiency of some types of some appliances has improved significantly over the past two decades, these improvements were offset by the increasing ownership and use of appliances. As a result, overall electricity consumption per dwelling for lighting and appliances has gone up.
- behaviour related to changes in comfort levels (e.g. heating temperature and period of use).

Larger homes and an increasing number of appliances each contributed to raising the consumption per household by about 0.4 %/year (rebound effect). These two factors partly offset the progress made in energy efficiency (– 0.8 % per year) and behaviour (nearly – 0.2 % per year) resulting in the net decrease in consumption of only 0.2 % per year.

In order to be more complete about impacts one shall take account of:

- the reduction of persons per households, the number of people per household decreased from 2.8 to 2.4

- the increase of number of households with urbanization. According to UN habitat , projections indicate that the number of households in Europe is increasing from 262.5 million in 1990 up to 328.2 million in 2025, although population is quite stable.

From 1990–2005, per capita household energy consumption increased in the majority of Member States by 11.6 % (EU 27).

5.3 What are the effects of social exclusion and mono-functional organization to urban growth?

Sustainable housing cannot only be analysed at the level of individual houses: the way the city is organized has a tremendous impact on the general sustainability of housing. More than half the world population lives in cities, and the general expectation is further growth of cities in terms of population, land-use and economics. The present trend brings an intensification of the city's ecological impacts. For instance cities contribute to 80% of CO₂ emissions. The city expands, causing environmental destruction and leading to the consumption of more fossil fuels through increased transportation (Newman & Kenworthy, 1989) and in general higher consumption of resources. The ecological footprint⁹ expands even more than the physical city.

In the past, but this is still very relevant with suburban car shopping and distant university campuses, the urbanisation of cities has followed patterns of rationalisation and separation of the functions of the city. This implies larger avenues and the parcelling of the city in different areas: shopping, working, sleeping, amusement, nature etc. In line with this type of mono-functional cities, private car infrastructure and other forms of occupation such as commercial centres, industrial zones, and new recreational areas developed causing urban sprawling. This modernist top-down planning of cities, in line with town planner Le Corbusier and the organization of the city in mono-functions have been criticised by many city designers and citizens as being inhuman and related to urban sprawl. However, it is still very present in urban planning.

Urban sprawl, with its specific low density dwelling type has important consequences for energy use (and also for material, water and land use). Singles family houses typically use 1,5 to 2 times more energy per m² than multi-family and high-rise buildings (EEA2010). Moreover, low-density housing reduces the economic viability and technical efficiency of district heating and public transport systems. Single-family houses make up 57% of homes in the 19 EEA member countries for which data is available.

However high-rise buildings and high density neighbourhoods bring problems too. The sprawling city has been challenged by the idea of sustainable city as compact centre (in American “smart growth city”) that would improve the long-term social and ecological health of cities and towns.

Another aspects linked to the expansion of the city is the tension between poor and wealthy housing. Wealthy households settle in the poor neighbourhood (gentrification), creating mixed habitats. At the

⁹ The concept of the “ecological footprint” (so successful in public discussion) was introduced in 1991 by Bill Rees, who calculated that each citizen of Vancouver in British Columbia was in fact using 4 hectares (for food and wood provisioning, as build environment, and as “virtual” land with vegetation to capture the CO₂ emissions).

same time the so-called urbanism of coercion (closing of buildings, suppression of public spaces) is gradually spreading out in advanced and developing countries alike, together with dynamics of social control (with cameras, policing etc.). Often in less dense areas rich neighbourhoods emerge sometimes separated from poor districts, thus resulting in gated communities where less wealthy populations are excluded. The trend of gentrification involves higher price of housing, and lower densities per floor space in what was previously low income and working class communities. City centres and lately inner-rings often become non-affordable for a large part of the population.

It shall be mentioned that cities are not all in expansion. In general urbanization is marked by very strong opposing dynamics of change: in many places cities expand while elsewhere cities shrink, as in East Germany. Many cities are shrinking in population and at the same time they are still sprawling¹⁰. According to Rieniets (2004), 370 cities of more than 100000 inhabitants have experienced the reduction of their population in the last 50 years.

¹⁰ Although Tokyo is experiencing a visionary trend of suburbia shrinking, this is not occurring with detached houses

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