The role of policies in promoting sustainable practices

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Summary

Resource depletion is the most pressing overall concern related to the built environment. Determined policy development is needed to address this concern. Policies aimed at specific issues are not enough; a shift to "dematerialization" is required. Developing countries face particular barriers regarding policies on the built environment. In some countries of both the developed and developing worlds, promising steps are being taken, but to deal with consequences such as the rebound effect will require strong supranational efforts.

Resumé

L’épuisement des ressources est la principale source d’inquiétude en matière d’environnement bâti. Ce problème nécessite l’élaboration de politiques fermes. Mais les politiques axées sur des problèmes particuliers ne suffisent pas : une évolution vers la “déméaterialisation” s’impose. Les politiques d’environnement bâti des pays en développement se heurtent à des barrières particulières. Si dans certains pays du monde développé et du monde en développement des mesures prometteuses sont actuellement prises, il faudra des efforts supranationaux énergiques pour faire face à des conséquences comme l’effet de rebond, par exemple.

Resumen

La disminución de recursos es la preocupación general más urgente relacionada con el medio ambiente construido. Es preciso elaborar políticas concretas que respondan a esta preocupación. Las políticas orientadas a cuestiones específicas no son suficientes: se requiere un cambio hacia la "dematerialización". Los países en desarrollo afrontan barreras particulares respecto de las políticas sobre el medio ambiente construido. En algunos países, tanto desarrollados como en desarrollo, se están tomando medidas prometedoras, pero para hacer frente a las consecuencias, como el efecto de rebote, se necesitarán acciones sólidas a nivel supranacional.

Policies have a key role in supporting moves towards sustainable building and construction (SBC). The sustainability of the built environment, in turn, is a key element in efforts to halt the spiral of resource depletion that jeopardizes the future of our planet. The current political climate tends to favour market-based initiatives to promote sustainability. However, recent studies show that, as far as SBC is concerned, the optimum solution is a combination of market-steering measures and integrated policies, efficiently implemented and enforced. Yet the development of effective policies is not easy.

Furthermore, even the most successful of existing policies geared towards SBC are barely making headway even against basic environmental problems related to the built environment, never mind addressing the urgent issue of reducing resource use by a factor of four or more in order to establish a balanced resource system. A sea change is needed: policy development even in the most progressive countries is not yet grounded in the principles of sustainability.

Current issues

The limits of the planet’s resources and the threat of climate change translate into a need to minimize use of materials and of fossil fuels. These are the first concerns that SBC tried to address, and they remain the most important ones.

Other issues, such as indoor air quality, green spaces, health issues, traffic patterns and social issues, have come to be included in various cultures’ understanding of the term. But the world is not getting any nearer to sustainability, even with respect to SBC’s two original concerns. In the case of each of these issues a new, innovative policy strategy is needed.

The results of a four-year OECD project confirm the importance of policies in promoting SBC. The synthesis report of this project defines four criteria for evaluating policy instruments:

- environmental efficiency (how much the instrument contributes to achieving the policy objective, e.g., reducing environmental loading);
- economic efficiency (the extent to which the instrument enables least-cost achievement of an objective);
- incentives for innovation (how much the instrument stimulates innovation and the diffusion of cost-effective technology);
- administrative costs (whether they are within acceptable limits, for both public authorities and private companies).

Thus far, few policies or policy instruments aimed at the building and construction sector have stimulated progress beyond the level achieved by building regulations. Energy and environmental audits appear to have encouraged the introduction of measures. Tax benefits look as if they might be a promising financial driver, as some countries have demonstrated. But in general there is an urgent need for innovation, ideas and further development of policies to promote SBC.

Policy results

The OECD review includes a number of policies that have been successful, though these policies do not go far enough. One is the Dutch policy aimed at diverting construction and demolition waste from landfill via waste reduction and recycling. It has resulted in over 90% of such waste now being recycled or reused, owing to a combination of environmental regulations, taxes, and (later) a ban on dumping.

The success of this policy does not mean the Netherlands has solved the problem of resource management. It has yet to make the shift to a closed-cycle, sustainable resource management policy whose emphasis would be on reducing the amount of material consumed to begin with.

Japan appears to be on the road to such a shift. The 2000 Basic Law for Establishing a Recycling-Based Society provides some good starting points for moves towards “dematerialization”. The structure of its approach to resource management is probably the best in the field. However, targets were not set and results so far have been marginal. It has been reported that awareness of the need for regulation is growing in Japan.

Studies show that most European countries’ policies have brought only slight progress so far. For measures to have a real impact, legislation needs to be accompanied by targets and regulations.

Despite examples of policies in some countries that have had interesting results, there are a long way from being enough.

In a study comparing SBC-related policy in Finland, the Netherlands, France, Germany and the UK, Minna Sunikka concludes that despite government support in areas such as information...
dissemination, progress towards sustainability in the construction sector appears to be very slow. Information on sustainability, a long-term outlook and a clear definition of the concept are often lacking in the sector, the study found.3 Even if all current policies and plans on SBC in these five countries were being fully implemented, this report maintains that their national strategies are not ambitious enough to bring about true sustainable development, as defined and agreed at the Rio Earth Summit of 1992.

Developing countries

If strong policies can help industrialized countries lead society towards sustainability, such efforts in developing countries face particular barriers. For example, small and medium-sized construction companies in most Sub-Saharan countries are generally not registered with the tax authorities and do not pay taxes. It would be next to impossible to apply fiscal measures to these companies. In each case this is to include the element in new policies condi- tions and/or corruption at many levels, with officials unlikely to be interested in better legislation. On the positive side, the cultures of many developing countries still preserve their traditional ways if only in people's memories. Where their cultural values stress balanced use of natural resources, such countries may have a head start towards adoption of sustainable approaches. It is essential to include this element in new policies and approaches, just as it is essential to find ways to include the informal sector. In each case this is conditional on getting government officials and political leaders involved. Furthermore, involvement is not enough. As a major sustainability analysis of urban settlements in South Africa concludes: “Settlements will only be sustainable once the values of sustainability have become the basis from which the majority of decisions on the creation and management of settlements are made.”4 Of course this conclusion applies equally to developed countries.

Making sustainability central

Policies to date have focused mostly on single issues such as energy efficiency. However, sustaina- bility needs to be the main driver of policy devel- opment, not just one of the parameters. As an important indicator of a shift to sustainability (in general development terms, and in the SBC sector in particular) we might consider whether a country has anchored sustainable development in its overall policies and even in its legislation or constitution.

A few interesting examples exist. Take the kingdom of Bhutan, a small country north of India, whose monarch has defined progress not as gross national product but as “gross national happiness”. Bhutan’s official policy is that any type of development should be judged according to whether it contributes to this type of progress—a difficult task, but a beautiful concept. Another example is the Constitution of East Timor, which became independent from Indonesia in May 2002. In founding the new country and writing its constitution, East Timor’s leaders have made sustainable development a basic right and duty of the state and its citizens. More recently, France has begun the process of amending its constitution to require the state to promote sustainable development and apply the precautionary principle.

An example more specific to the building and construction sector is the definition of public housing in Swedish law: “Housing is a social right, and the aim of housing policy is to create conditions that enable everyone to live in a good home at a reasonable cost in a stimulating and secure environment, within ecologically sustainable limits. The housing environment should contribute to equal and decent living conditions and should, in particular, promote good conditions for children and young people to grow up in.” A project in which these principles are being carried out is the City of Tomor- row in Malmö where, among other goals, 100% of energy is to be provided by renewables (see photo on following page).

While many countries in Europe have not reached this stage yet, the European Council has taken a major step towards doing it for them. In the communication issued following the Council’s Gothenburg summit in 2001, European leaders strongly endorsed sustainable development. They declared, among other things, that “[the] relationship between eco- nomic growth, consumption of natural resources and the generation of waste must change. Strong economic performance must go hand in hand with sustainable use of natural resources and levels of waste, maintaining biodiver- sity, preserving ecosystems and avoiding desertification.”

As a consequence of this statement, the European Commission is working on a resource strategy that is expected to go far beyond the current focus in most countries, especially as regards recycling (see http://europa.eu.int/comm/environment/nabres/index.htm). An example of concrete progress in the EU is the Energy Performance of Buildings Directive, whose key provisions include minimum energy performance requirements for all new buildings and for existing large buildings undergoing major renovation; energy certification for all buildings (fre- quently visited buildings where public services are provided will have to display the energy certificate prominently); and regular mandatory inspection of boilers and air conditioning systems.

Barriers and challenges

One of the main barriers to SBC is that the building and construction sector is not recognized as a responsibility to be shared by different countries. At EU level, for example, there is no mandate to develop common policies on construction or housing. The Plan of Implementation adopted at the 2002 Earth Summit in Johannesburg does commit governments to “use low-cost and sus- tainable materials and appropriate technologies for the construction of adequate and secure housing for the poor, with financial and technological assistance to developing countries, taking into account their climate, specific social con- ditions and vulnerability to natural disasters.” However, this clause is aimed principally at poverty alleviation rather than SBC.

Documents from the Earth Summit emphasize
the duty of the private sector to "contribute to the evolution of equitable and sustainable communities and societies". They mention the need for: provision/improvement of rural infrastructure and sanitation; improved access to property, shelter and services for the poor; reduced energy use; integrated policy making and material reuse; and other topics related to this sector. But there is nothing specifically about balanced resource management.

Solutions involve major shifts

If we are beginning to understand the barriers and arrive at the solutions involved in establishing a society driven by SBC, or by recycling and renewable forms of energy, putting the solutions into effect is another matter. As Gary Gardner and Payal Sampat have written, "Given the record of [the last] century, an extraterrestrial observer might conclude that conversion of raw materials to wastes—often toxic ones—is the real purpose of human economic activity." 5

Our resources are limited. If we do not make a shift, nature will do it for us. To bring about a shift in resource management will require reinvention of the now predominant economic system and the policy making that guides it. This system is very complex, and considerable insight into its workings will be necessary if we are to avoid unexpected consequences such as major rebound effects.

For a start, old-fashioned subsidies to industry, mining, transport and new building need to be replaced with measures to support closed cycles for all materials and products. The building and construction sector could be at the forefront of this change. Its products have a longer lifetime than average products, and with appropriate renovation and maintenance they can be made useful virtually forever. In this sector a zero-materials strategy, developed in line with a zero-energy strategy, could well be in reach.

Recent research and models provide some clues about how to go about this. First must come a shift in the focus of policies from new structures to existing ones, aiming for repeated reuse. Only now are we starting to realize that the real advances can be made in the existing building stock, which in many countries amounts to up to 99% of total stock, with only 1-1.5% added each year.9

Another key shift will mean restructuring policies to favour services over products. Current discussions of effective policy involve extending producer responsibility to the whole lifetime of a product. In the buildings sector this can be translated as "servicing shelter". Solar cells in roofs provide an example of such "product service systems": in some projects the roof (as a surface) is leased to an energy supply company. The company takes full responsibility for the roof, both as a watertight surface and as a source of profit via the green elec-

Sustainable building and construction

The building and construction sector also has its own barriers, such as the fact that longevity of buildings makes the economic benefits resulting from energy efficiency investment uncertain. Moreover, where there are both owners and users, "principal agent" problems occur with respect to improving energy efficiency in buildings.

There is no one agreed method for assessing the environmental impact of energy, water and material use. National policies concerning building and construction differ considerably, and knowledge of these impacts is limited. Nor is there a broadly accepted terminology for issues related to recycling of waste materials and products. The construction industry has to deal with legislation that varies according to country and is based on differing information and data. Countries are developing their own tools to assess the same products in different ways. Construction materials and products are the building sector's main asset in free trade and cross-border activities. To harmonize the various national approaches will require, once again, strong international cooperation.

Countries in transition face special problems in this connection, especially those that will join the European Union. They will have to adopt EU standards for building and construction, a move that will mean significant progress in many areas. But these standards are not yet in place for all aspects of SBC, and they are not sufficiently stringent in some areas. The building and construction sector in the accession countries will need to adapt to EU legislation even as they learn to cope with open borders and free trade.

EU membership will mean that many local companies in the sector will disappear. Local building products will be replaced by Western imports. This will make it extremely difficult to establish a strong local-based climate for SBC. From a sustainability point of view, it would be better if most of these countries could take a few years to build a strong local industry that could cope with EU legislation and better compete with imported products and foreign-based companies.
tricity produced by the solar cells. This avoids the guarantee problems that could arise if two companies were involved in maintaining the roof.

Of course SBC is not only about environmental concerns. In addition to securing our physical resources, SBC means paying attention to social and cultural values. The importance of these aspects is only recently being recognized in the sector. The main elements receiving attention are the history and traditional values of people in different cultures and climates, which have often been overlooked in modern building and planning. As a World Bank report on a Chinese development project puts it, “(The) loss of urban neighborhoods and historic sites was once thought to be the price of progress. However, planners now recognize that preserving the past is an essential part of creating livable, sustainable cities.”

The city of Riyadh in Saudi Arabia provides another example of attention to social and cultural factors. Certain local planners realized that copying western building styles was not very efficient in their climate, nor did they correspond to people’s cultural needs and habits. In a new developed area they decided to use the traditional local approach. They designed a combined commercial-residential area in the medina style, using mud-brick construction, the traditional building method which has many advantages in terms of comfort as well as resource use.

Such examples illustrate that social and cultural aspects can relate very closely to environmental ones, and can even be mutually reinforcing with use of local resources, attention to the existing building stock and respect for cultural values. Policies that follow such an approach can help improve environmental conditions while meeting peoples’ wishes and needs.

In short, in a very real sense SBC is all about policies and how we organize our society and our markets. The need for a global approach is clear if we look at the Pacific island nations, for example: it is not the lack or failure of local policies that threatens these islands, but sea level rise resulting from climate change reflecting policies in the developed world. It is not enough for industrialized countries to work to develop sustainability within their own vigorous economic system. The survival of many other countries depends on policy makers’ paying serious consideration to situations in the developing world.

Further research on existing policies could help reveal the most successful approaches for sustainability. A necessary first step is to inventory policies in many countries related to building and construction. The Sustainable Building Support Centre at the Institute for Housing and Urban Development Studies (IHS) in Rotterdam began such an inventory in January 2003, in line with a recommendation from the IEA, the OECD and EU housing ministers. So far, 11 countries have signed up and are assembling policy information and inventorying policies and how we organize our society and our markets. Policies are essential to achieve SBC and balanced resource management. Existing policies have not led to any real shift. For example, most countries will probably not be able to meet their Kyoto Protocol targets despite climate change policies. A large part of the problem is not the lack of sustainable building policies, but rather the need for awareness on the part of political leaders. Policies should focus first and foremost on the existing building stock.

Notes
7. OECD, op. cit.