

Sustainable Development and Policies or Strategies Concerning Resources

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Abstract

Since the 1990s the term (and underlying concept) of sustainable development has become the aspect arising most often in discussions regarding the Earth's fate, the management of natural resources, energy policy, the safeguarding of food security and places to live, and so on. However, ideas on the accomplishment of sustainable development assumptions have first and foremost allowed for development and strengthening of all those ecological movements able to put political pressure on the governments of different countries, with a view to their devising and implementing policy on environmental protection, as well as the instrumentation allowing effective control over the exploitation of natural resources. Analyses concerning the structure and dynamics of contemporary use of natural resources for economic purposes which came into existence in time for the Rio "Earth Summit" (i.e., in the early 1990s) made it clear that the prevention of excessive change in the natural environment – and the guaranteeing of its appropriate quality for both present and future generations would be best served if the main focus was on raw materials and their use. This rather one-sided way of thinking did in fact evolve over time, to the point where activity in the name of sustainable development has now become multifaceted, involving a wide range of entities, and extending far beyond the field of raw-materials and resources use.

Keywords: sustainable development, natural resources, energy policy

Introduction

The 1992 "Earth Summit" (World Conference on the Environment and Development) convened in Rio introduced many provisions obliging economic, political and social actors to put the principle of sustainable development into effect. Thus, alongside political will (whose generation represented the first step towards the adoption of the aforementioned principle by different countries), there was a crucial need for the instrumentation, essential for the process to gain momentum, to be first devised, and then introduced. Within this, there were methods concerned with the governance of the sustainable development process. However, as was soon to become clear, the adoption of a comprehensive strategy ushering sustainable development into each of the processes present in each subsidiary field is an extraordinarily difficult matter. So much so in fact that only in recent years have certain serious solutions begun to take shape. Zerka cites those adopted in Norway and Germany as examples, writing in the case of the former that the Biodiversity Act drawn up "denotes a series of principles for the sustainable use of natural resources that all Ministries must conform to." Where Germany is concerned, the introduced energy reform or *Energiewende inter alia* includes: "The development of renewable energy sources, a departure from the use of nuclear

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power, ambitious emissions targets, and the involvement of citizens in the processes by which energy is generated and distributed” (Zerka 2015, 2). Representatives of the German Government claim that the reform is a success, not only for energy policy, but also for the strategy of sustainable development. “The success to date with the reform is inclined to be accounted for through the prism of society’s departure from modernisation understood in a “linear” fashion to a “reflective” version that has required the building of a hard-to-achieve consensus between citizens, industry, the political parties and the regions in Germany. And a key role in this process has also been played NGOs and numerous advisory bodies that intermediate between civil society and the authorities.” (Zerka 2015, 2).

Thus, as it addresses matters of resource management, the literature on sustainable development (Elliott 2012; Henseling and Schwanhold 1995; Romero Rodríguez 2012; Roorda 2012) most often accepts that the process encompasses the means of utilising renewable and non-renewable natural resources, as well as the consequences of such activity, in the form of wastes generated and the possibilities for them to be disposed of or utilised. The research topic formulated in this way can then represent a guideline or basis for the devising of sustainable development strategies and policies at the national and regional levels, as well as serving as a starting point from which to develop an overall policy for the management of natural resources (that does not always proceed in line with sustainable development principles).

Under the concept espoused by Ewers (1992), care for the developmental opportunities of future generations should denote natural resources being retained at the same level both quantitatively and qualitatively. This assumption in turn leads the author on to several principles that should be addressed by all those formulating the basic guidelines on managing natural resources. These are:

- that the time needed for renewable resources to be degraded (consumed) should not exceed the time taken by their regeneration
- that the level of resource use available to humankind should not exceed the possibilities afforded by the natural conditions in the given place, when it comes to absorption (or assimilation)
- that a decline in the availability of non-renewable resources may only be justified where the means of exploitation still guarantees no worsening of the existential conditions of future generations (Ewers, quoted in Henseling and Schwanhold 1995, 82)

On the basis of the principles cited above, many countries have adopted and developed bases for the management and utilisation of raw materials, as well as strategies by which they may be economised on and protected. Proper resource management—and the achievement of one of the key goals of sustainable development that denotes—entails monitoring of the rate at which, and scope within which, raw materials are used. This is especially important in the case of renewables, whose renewal safeguards the needs of present and future generations, provided at least that the demand for them does not change markedly. This kind of approach goes along with the so-called efficiency of nature, whose resources available to the economy and humankind are also known as ecological or environmental capital (Czerny and Córdova Aguilar 2014). The efficiency of nature may not be measured solely in terms of its capacity to supply raw materials for production, being also understood to embrace the function of maintaining life on Earth, the structure in this way being particularly sensitive to the disruption of relationships that existed originally. The principles for the management of nature’s resources to meet the needs of the economy is underpinned by the assumption that, should these needs be played down and not taken seriously enough, the conditions for management and development in the future (if also for a short period) will worsen, while defined bases for the economy will be disrupted forever or for a very long period, as a result of excessive burdening of a sensitive environment through over-exploitation.

The existence, recognition and exploitation of natural resources represent key aspects of human-environment relations and a precondition for human life and economic activity. The means of management applied currently—in which huge quantities of resources (materials and raw materials) are consumed, with a high level of trade in them also taking place between countries—ensures the destruction of the natural bases upon which the economy of this kind is actually founded. Rapid ongoing change to the structure of a whole range of different resources that the economy makes use of denotes ever-greater and more serious global consequences that are very much irreversible in

nature and ensure that overburdened and unrenewed ecosystems are not in a position to respond or recover. Heavy burdening of the environment (human pressure on resources) is thus linked with growing economic consequences and costs, as augmented by social (and health-related) costs, losses of an aesthetic and cultural nature, and a level of destruction that is incapable of being remedied.

1 A geographical look at resource-management policy

From the earliest times, economic activity denoted the exploitation of natural resources, be these in the nature of minerals, or other kinds of products nature had to offer. The interrelationship between the bounty of nature in any given area (and environment for human existence) and the appropriate and unique ways in which people in that particular place have made use of these resources is what ensures that considerations of environmental policy—including policy on raw materials—need to be holistic (treating the system of relationships between the environment and human economic and management activity as a single, integral whole).

Where geographical analyses are concerned, the assumption arising out of the sustainable development concept (conceived as a striving to ensure that the needs of present and future inhabitants of the Earth are both met) throws into sharpest relief those conditions of the natural environment as can serve as a basis for the life of a community, and for an economy, that is in essence independent of the era in which the people concerned happen to live. Only with this kind of approach is a steady process of development possible, with the functions the environment is to serve in that process being safeguarded for many years to come, and in essence forever. Held and Geißler (1993) claim that a key role in human economic activity on planet Earth, as well as in the maintaining of ecosystem structure, is played by the temporal and spatial dimensions to the said activities.

In the face of challenges and conceptual assumptions regarding sustainable development that are expressed in the above way, an objective of any policy for the rational use of resources, most especially raw materials, is the devising and introduction of pro-environmental forms of management, as well as changes in the structure of the “basket” of resources essential for development. The trend to development most anticipated by greens would entail a reduction of the pressure to exploit resources, with an attendant genuine reduction in demand for the said resources. While analyses of global economic trends do indeed suggest a change in resource-use structure in recent years (especially where mineral raw materials are concerned), it would be hard to speak of any real reduction in the amounts supplied (Lim and Spanger-Siegfried 2005). The change in resource-use structure is in fact seen to result primarily from technological progress worldwide. The search for new materials, products and technologies *inter alia* results in changes in economic processes, while also influencing social development. It is thus possible to speak of a social environmental impact manifesting itself in lifestyle changes, not least involving different products selected, greater environmental awareness, and so on. However, none of this changes the fact that new discoveries and products alike require new materials, with the search for and extraction of the latter leading—or capable of leading—to the further devastation of ecosystems, with overall harm done to the environment. This is all the case with, for example, the prospecting for and exploitation of rare-earth resources present in developing countries.

In each case, be it at national or regional level, the approach to resource management should be one in which an inter-sectoral conceptualisation prevails (as well as one that operates between ministries where the institutional circumstances are concerned). For an integrated policy and management process where resources are concerned allows, not only for more rational use, but also (and above all) for the introduction, utilisation and ultimate disposal of costly technologies.

In discussions concerning the proper management of resources and changes in the structure of the “basket” of resources that still remain at the disposal of humankind, the key player is the human being—with his or her consumption models, habits and dependence on products originating from the surrounding environment (be these food items, building materials, raw materials for making clothing and equipment for the household, etc.). It is assumed that the human being “settled” in a given environment makes conscious use of its resources, and treats them as a good

essential to life. There is an associated process of assessment or evaluation of the resources existing in a person's surroundings (Czerny and Córdova Aguilar 2014). In turn, the level of environmental stress arising out of the over-exploitation of local resources, and an awareness that the need to exploit may soon result in shortages or absences (not merely for future generations, but even for today's inhabitants, and one's own family) is linked with culture and tradition. The research carried out by the author in Latin America has many times made it clear that cultures (habits, traditions, adaptations) define the way in which needs as regards consumption, and the structure that consumption assumes, are shaped in the given place, and translate into ways of living, and ways of thinking about local resources. Schneidewind claims that at the heart of the relationship between human beings and their natural environment (or more precisely the nature around them) there lie cultural processes and phenomena "inscribed" in the given locality, as well as processes of learning and the shaping of value models among inhabitants in which ecological aspects are only now making their way into people's consciousness (Schneidewind 1993). This view can be argued against, however, given that observations on how Andean inhabitants and those living along rivers in the Amazon Basin behave make it clear that environmental awareness has long been strong. Indeed the indigenous peoples have had this since the dawn of history, only making use of resources to a degree that allows the given environment to replenish them, in this way assuring communities of continuing access to what for them are the essentials of life.

State environmental policy should go far beyond the scope of the existing strategies and programmes that many governments (especially developing-country governments) have prepared and then introduced, though in fact leaving them in place on paper only, given the lack of either possibilities or political will for assumptions to actually be enforced among different actors in the economy. If the fundamental assumption here is the maintenance of the natural conditions that provide for human life and good health, while at the same time ensuring preservation of the bases for the economy and human existence, then the over-exploitative utilisation and "management" of natural resources taking place in many countries is certainly not operating in the interests of that assumption. The phenomena in question are widely observed in the countries of the global "South," notwithstanding the possession by many of these of a document dubbed a pro-environment and sustainable development policy. Examples from there show clearly how sustainable development may not be the sole preserve of state authorities. If remaining economic and social actors do not heed the relevant principles underpinning that development, or else downplay them (as for example happens with the exploitation of the mineral raw materials being prospected for around the world), then the true introduction of the key underpinning assumptions is a mere fiction. At the same time, there should be a major widening of competences to include the local authorities and bodies charged with real-life enforcement of the laws and legal provisions designed to usher in sustainable development in practice.

2 Resource management

The concept of resource(s) management, often implemented as raw-materials management, has ceased to play the role of a static instrument, having transformed into a dynamic means of reacting and making decisions in association with the exploitation, trade in and processing of the said raw materials, as well as the management of the wastes generated. This kind of assumption underpinning the new approach to resource management assumes that the objectives of development will be taken account at all levels and all stages of product development. Emphasis is put on management of the cycling of raw materials (or resources), with this denoting precise monitoring and directing of the route that a raw material takes from the moment it is first obtained, via different levels of processing through to a final stage, which is to say the obtainment of product from the given raw material and the means in which it is used, as well as possible processes whereby it can be recycled and reused as a secondary raw material, as well as disposed of (if not used again) (Henseling and Schwanhold 1995). The concept of managing the life cycle through which raw materials pass puts emphasis on elements of modern environmental policy that are made possible by

technological process, while at the time underlining the role in the process of the social actor (via public participation).

Management of the cycling of raw materials seeks the kind of shaping of the process by which the natural environment is exploited that will allow the factors of production that natural resources represent to serve humankind for as long as possible. This must also be linked with the achievement of the economic, social and environmental goals that politicians and entrepreneurs have set. This in turn means that the process must bring in a wide variety of actors making direct or indirect use of environmental resources, which is to say entrepreneurs, consumers, the organisations of different types operating within civil society and ultimately the state itself, which in many cases owns at least some of the resources in question.

The main actors managing the cycling of resources are the state and entrepreneurs. The role of the enterprise is to give effect to principles regarding the rational and economical use of resources, while the task of the state is to ensure that all entities in the economy have appropriate frameworks for their activity, by way of formulation of the key objectives where the management of resources is concerned. In this respect, it is of particular importance that external influences and requirements be adjusted to conditions within the given state. State-level tasks also include the identification of the branches of the economy critical to the achievement of economic and political goals based around the utilisation of resources.

Alongside the two key actors managing the cycling of raw materials already referred to—i.e., the state and the economy (or more precisely the enterprises operating on a country's territory), there are many other actors exerting an influence on resource cycling. These include consumers, trade unions and environmental NGOs. Through the demand exerted for “environmentally friendly” products (e.g., those whose production does not necessitate exploitation of resources, and whose disposal does not increase amounts of waste going to landfill), consumers can reinforce economic decisions determining directions to further development. In turn, organisations can engage in educational activity that backs appropriate, pro-environmental behaviour in society. The roles of unions and employees' organisations may be similar.

The dominant role of the actors referred to above where resource cycling is concerned makes it particularly important that cooperation and exchanges of information between them be developed successfully. The need for the different entities in a given chain to interact can be achieved by way of joint analyses, trading, support for innovation, and so on.

Summary

In 1994, M. Redclift wisely noted that the sustainable development concept was too closely defined by the experiences, scientific theories and economic practices of the industrialised countries for it to be as attractive as it ought to be for states and peoples in the developing world. The “green” aspirations and hopes present in the former—which work to prompt society into saving resources, protecting the environment, limiting the consumption of non-renewables, gaining a more pro-environmental education and so on, are all based on an understanding that the natural environment is in and of itself a value to be prized by humankind (Henseling and Schwanhold 1995). There are many developing countries in which the intellectual elites take the same view. However, the political and economic decisions taken at different levels of the administration unfortunately make it clear how very much under pressure the natural environment is, given the conviction that development and an improvement in living conditions can only be achieved through actions seeking to make the fullest possible use of resources. Likewise, bearing in mind the non-beneficial social and political practices that accompany such activity (not least corruption), the consequence is invariably the devastation of the environment, not merely from the point of view of nature and wildlife, but also when it comes to human beings. Just a few examples of this type of phenomena include large pools of crude oil in northern Ecuador, the contamination by mercury of waters and soils in northern Peru, and the heavy-metal pollution present in the rivers of the Peruvian Andes.

Local communities are under no illusions as regards the threats that pollution of the natural environment can pose, and so strive to fight against new developments (sometimes even successfully).

Unfortunately, their efforts do not prove effective in most cases (as with the women of Mazahua, central Mexico, who fought to preserve intact and uncontaminated a body of water that supplied indigenous people with both drinking water and irrigation water for their fields (Skoczek 2013). In extremis, local people are even forced to abandon lands that have been occupied by their people and families for centuries.

In turn, in the urban and industrial spatial systems that have taken shape in countries of the global North since the Industrial Revolution, inhabitants are aware of threats arising from the pollution of the environment and the limiting of their life space. For this reason, movements in the name of ecodevelopment and environmental protection are a strong driving force behind development policy there. A comparison of the approaches to resources and valuable features of the natural environment in the developed and developing countries shows that the thinking and economic activity in the former have brought about a shift in the priorities and values that mainly speak for “development”, as long as this takes place in a “sustainable” manner.

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