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B i o r e g i o n a l i s m
A Pragmatic European Perspective

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Abstract

Bioregionalism - A Pragmatic European Perspective

In Europe, the recent debate on globalisation of the economy has - ironically - given a notable push for various concepts of regionalisation. Regions always played a strong role in people's perceptions of a good life, but regions were predominantly understood as political boundaries of states, provinces or counties. Bioregionalism, however, addresses the biological basis for a sustainable future. This concept gains in importance with the acknowledgement that ecological limits exist and that the "ecological footprint" of modern society is too large to be sustained in the future. Some preliminary steps have been made in Europe to define - or even impose - such limits, which in the end could lead to new and different patterns of regional development.

Zusammenfassung

Bioregionalismus - Eine pragmatische europäische Perspektive

Die jüngste Debatte um die "Globalisierung der Wirtschaft" hat in Europa - ironischerweise - eine Reaktivierung verschiedener Konzepte der Regionalisierung bewirkt. Regionen haben stets eine Rolle gespielt bei der Frage nach Identität und gutem Leben, doch wurden sie zumeist nur als politische Grenzen (von Ländern, Provinzen oder Kreisen) verstanden. Bioregionalismus meint dagegen die biologisch-physikalische Basis einer nachhaltigen, zukunftsfähigen Entwicklung. Dieses Konzept erhält Gewicht mit der Anerkennung bestimmter ökologischer Grenzen der Entwicklung und der Erkenntnis, daß der "ökologische Fußabdruck" *(ecological footprint)* der modernen Gesellschaft zu groß geworden ist, um verallgemeinerbar und zukunftsfähig zu sein. Einige vorläufige Schritte sind in Europa unternommen worden, Regionen neu, das heißt auch ökologisch zu definieren, was zu neuen und damit unterschiedlichen Mustern regionaler Entwicklung führen kann.

1. Bioregionalism - Defining the Feasible

In a recent article in "Society & Natural Resources" Mark Diffenderfer and Dean Birch defined "bioregionalism" as ecosystem management and beyond:

> "The requirement of a fundamental change in beliefs, attitudes, and values concerning the interaction of humans with their natural environment distinguishes bioregionalism from other forms of ecosystem management..." (op. cit., 10:3-16, 1997, here p. 3).

While ecosystem management is about

- maintaining viable populations of native species *in situ,*
- ensuring that ecosystem types are protected across their natural range of variation,
- maintaining ecological processes and the evolutionary potential of species and ecosystems,
- accommodating human use and occupancy while preserving the integrity of ecosystems,

it does not necessarily require institutional change. Bioregionalism encompasses these various elements, and at the same time is thought to be more than that. Diffenderfer and Birch:

> "Bioregionalism seeks to alter systems of production toward a sustainable future... A fundamental change in systems of production must coincide with a concomitant change in those beliefs, attitudes, and values .that affect humans' interaction with the natural environment" (op.cit., p. 5).

No doubt, this is a demanding normative definition, leading to many possible objections. In order to make such definition operational, the authors use several indicators (or elements) to empirically test the concept: *Ecology, economics, empowerment, education.*

Only if the basic principles of ecology are being observed, can there be bioregionalism. Only if the systems of production draw largely on local resources and do not degrade the ecosphere, and only if people consider

the long-term ecological implications of production, can bioregionalism become effective. As bioregionalism, thus defined, is inherently decentralized, the authors continue, it requires both community and personal empowerment. In order to develop or re-establish a strong sense of interdependence with other people, other species and the ecosystems with which humans interact, education finally must help to create a ,,social capacity", i.e. the ability of people to participate in decisions that affect life. To develop an "ethic of caring", there may be a need for educational reform, for team teaching, group work, cooperative learning, and for bridging the gap between technical knowledge and experiential knowledge (op.cit., p. 6).

in a comparative case study of the "Adirondacks" and the "Sierra Nevada", Diffenderfer and Birch try to verify these various indicators of bioregionalism. They come to mixed conclusions as regards the two examples of bioregions in the USA (op.cit., pp. 13-15).

Certainly, it could be worthwhile to use such a broad concept to discern and evaluate Europe's bioregions, and to compare the respective features and developments. For the time being this, however, does not seem to be possible. Such or similar concepts of bioregionalism are not established in Europe, and a respective trend in theory and practice is not yet in the making. Despite (or maybe: because of) the fact that there is a long tradition of political regionalism in Europe, that major European countries are administratively based on the principle of subsidiarity, and that the European Union also largely functions on basis of that principle, biophysical and ecological considerations so far have not been major criteria to define regional structure and development. Only in a more limited, specific sense of environmental protection such considerations have become politically relevant. I, therefore, would like to address the topic with a somewhat different and more feasible interpretation:

Bioregionalism can be understood as a continuum of approaches toward regional development, leading from curative, re-active concepts of nature restoration to preventive, pro-active concepts of nature conservation and sustainable economic development.

In the following, a part of this continuum shall be discussed, starting with a worst case scenario ("regions at risk"), and moving toward positive scenarios ("re-regionalisation"; "regional conservation"; "bioregions to come").

2. Regions at Risk: Exploring Environmental Criticality

Over the past decade or so, environment criticality has captured the interest of a number of researchers and academic disciplines. Russian geographers have established "red zone" maps of critical environmental situations. Norman Myers, a biologist, has pioneered the concept of "hot spots" of biodiversity at risk. Maren Falkenmark, a hydrologist, has defined ..thresholds" of water scarcity. The FAO has identified "critical zones" on the basis of the capacity of land resources to support current and estimated future populations. Different to the concept of "sustainability", the power of the term "criticality" lies in its tendency to evoke a sense of impending disaster and for immediate action.

Kasperson et al. recently tried to make the concept of criticality operational for regional environmental planning. To be considered critical, an environment needs to meet several interdependent criteria. First, the human-induced biophysical changes in question must threaten the basic structure and functions of a given natural environment. Second, these changes must endanger sustained human use or the well-being of humans living within that environment. And third, any assessment of the potential implications of these threats of carrying capacity must consider

the systems of management (the 2social capacity") that people have to deal with the situation, to adapt to it or to mitigate the effects of environmental degradation.

Using these criteria, Kasperson et al. define a critical environmental region

> "... as one in which the extent, the rate (or both the extent and the rate) of environmental degradation precludes the maintenance of current resource-use systems (or levels of human well-being), given feasible adaptations and the community's capacity to mount a (reasonable) response" (op. cit, p. 6).

This classification integrates biophysical and socioeconomic considerations, and thus comes close to a workable definition (though negative) of bioregionalism.

On basis of this definition, Kasperson et al. in this way identified nine critical environmental regions of the world: "Regions at risk." One of these regions is located in Central Asia (the Aral Sea), three are in Eastern Asia (the Nepal middle mountains, the Huang Ho river, Eastern Sundaland), one in Africa (Ukambani), three in the Americas (Amazonia, Basin of Mexico, Llano Estacado), and one in Europe (the North Sea). Of course, the status of these nine regions differs. Most critical is the Aral Sea region, while the others are thought to" be impoverished and/or endangered (op. cit., p. 9).

There is no space here to elaborate further on this research, but one comment is in order as regards the European case: An extremely large and densely settled population packs the shorelines of the North Sea. This region's ecosystems are being increasingly taxed as industry's capacity to extract natural resources (like oil) continues to grow. Human use of the sea as a sink for an ever growing volume of effluents places additional demands on the ecosystems. Fish stocks and other renewable

resources hover on the edge of over-exploitation, as the different ways in which people directly or indirectly use the North Sea conflict with one another.

Using the criteria of ,,criticality" on a lower level of aggregation, regions could be identified in most countries, where critical levels of resource depletion and/or environmental pollution have been reached that ask for immediate or priority action. In Germany, for instance, the area of Halle-Leipzig-Bitterfeld (Eastern Germany) and of the Ruhr-Valley (Western Germany) could be named. In both these regions, restoration of derelict land and conservation of cultural assets have been undertaken that deserve both critical support and follow-up projects in other regions and countries.

3. *Re-regionalisation: Changing the Division of Labor*

For the last two years or so, the European political arena, particularly economic policy, has been dominated by one theme: Globalization of the economy. Within this debate, Europe is trying to strengthen its competitive position within the "triade", i.e. vis à vis North-America and Eastern Asia. Deregulation, privatisation and even partial demolition of the welfare state have been the major strategies to prepare for a future globalized economy. Parallel to this major policy trend, however, re-regionalisation has gained ground. Be it that local and regional markets have been re-developed, be it that a serious critique has been elaborated on the limits to the given international division of labour. In theory, far-reaching proposals have been made, and in practice, this debate has lead to some remarkable changes.

In many regions of Europe you will be offered "regional products" in hotels and restaurants; adjacent to the gas stations along the motorways in

France or Belgium outlets have been established which serve you "produits regionaux". In the Tuscany, shops offer you first quality cheese and olive oil ("olio extra virgine"), and many other products from the region. In Schleswig-Holstein, lamb grazing the salty land gained from embanking the sea, are not longer exported to Paris, where they have been enjoyed by gourmets, they are now being sold on the regional market. Many more examples of such re-regionalizing of production and consumption could be cited here.

Recently, a strike by Spanish truck drivers showed that the division of labour in the European automobile industry may have passed its optimum: Under the business strategy of "just-in-time"-production, special components for cars are being produced in Spain. Within one week, the strike in Spain led to a total standstill in the production of two major models of Ford and Volkswagen automobiles. "Just-in-time"-production, however, is not only dependent on a functioning transport system but also on cheap transport. A major critique of industrial society from an environmental point of view is that transport is too cheap as it doesn't reflect the full-cost principle, particularly not containing the environmental costs of transportation.

In a broader context, the debate on an "ecological tax reform is aimed at internalizing environmental costs in decision-making at all levels. To the extent that environmental costs are correlated with transport in general and transport fuel in particular, any significant ecotax would have a strong impact on production and consumption patterns, particularly on re-regionalizing the economy.

However, except from Denmark and the Scandinavian countries, no major break-through toward a truly ecological tax reform has taken place in Europe so far, despite sophisticated proposals and intensive public

debate on this issue. One could call the situation a stalemate in that the European Commission has stopped the introduction of a combined energy tax/CO_2-charge with the argument that such a major change in the tax system would be unfeasible as long as similar steps are not taken by the United States and Japan, Europe's major economic competitors.

In conclusion one could say, that changing the division of labour in favour of livable regional development is dependent on an international concord that does not yet exist. And more: Pragmatic bioregionalism, it seems, is not only on how to reconcile ecosystem management with sustainable production systems on the regional level (Diffenderfer/ Birch), but also on how to modify the international division of labour in such a way that re-regionalization of production and consumption again becomes possible. Here, studies on regional energy and materials flows might be important in that they would show how costly the existing structure of modern economy is if energy and materials would be counted at full cost.

4. Regional Conservation: Single-purpose and Multi-purpose, Large-scale and Small-scale Approaches

In the past, growing concern with the negative impacts of economic growth. and increasing: sensitivity to environmental issues have induced state intervention in various ways. In the regional context, single- and multi-purpose legislation, strict and less strict command-and-control measures, large-scale and small-scale projects have been implemented. Europe is very diverse as regards regional conservation strategies. In Germany, for instance, 10 different types of nature conservation concepts are being differentiated (see *Table 1)).* Special efforts would be necessary to fully describe and evaluate the respective approaches in the various European countries. Three concepts, however, seem to be particularly relevant as regards the topic of bioregionalism.

Table 1: Land Protection in Germany

Type	Number	Hectares	% in % of national territory
Natural Protection Areas	5314	684 503	1.90
National Parks	12	726 502	2.00
Biosphere Reserves	13	1 249 141	3.40
Wetlands of international relevance	29	671 204	1.90
Natural Forests	635	20503	0.06
Landscape Protection	5893	8 798 205	24.60
Nature Parks	68	5 678 766	15.90
Birds Protection Areas (=BPA)	494	857315	2.40
BPA as suggested by the International Council for Birds Protection	164	2 110527	5.90
European Reserves	18	266 838	0.70

Note: These areas are partially overlapping; addition is not feasible.

Source: Bundesamt für Naturschutz: Daten zur Natur, Bonn, 1996, p. 19.

4. 1 . Biosphere Reserves

A large number of biosphere reserves have been established in which human activity has been restricted in order to reach a high level of protection of the endemic species and ecosystems. In Germany, three protection categories have been defined: core area *(Kernzone),* nursing area *(Pflegezone),* development area *(Entwicklungszone).* Meanwhile, biosphere reserves cover 3.4% of the German territory. In cases of newly established reserves, institutional changes were necessary which in most cases were difficult to reach. When such reserves are planned, a full range of objections from interested individuals and groups may arise. An exceptional chance of implementation arose in the interim period between the former GDR and re-united Germany. Within a very short time large parts of

Eastern Germany were put under biosphere reserve status. Of the 13 German biosphere reserves, 6 are located in Eastern Germany.

4.2. National Parks

A different approach to regional conservation is the national park. In such a park use of natural resources is not allowed, although its space is also categorized in three zones. In Germany there are 12 National Parks, covering 2% of national territory. The largest one, the *Nationalpark Wattenmeer* in Schleswig-Holstein, has an area of 285,000 hectares and is planned to be enlarged to 350,000 hectares. It is the habitat of more than 3,200 species.

All the criteria of bioregionalism as defined by Diffenderfer and Birch could be examined for such biosphere reserves and national parks: Ecology, economics, empowerment and education are all relevant in that defining uses and non-uses gives rise to conflicts, some of which can be resolved rather easily by information and through cooperative learning, while others cannot or would need a fundamental change in beliefs, attitudes and values. Still, biosphere reserves and national parks mainly concern ecosystem management, not sustainable economic development, clean products and technologies.

4.3. Nature Parks

As regards the third approach to regional conservation in Europe, nature parks seem to be particularly successful in getting citizen support. A larger number of such small-sized regions have been defined where human use for recreation and tourism are accommodated while trying to perserve the integrity of the existing ecosystems. In Germany, for instance, there are 68 such Nature Parks, covering 15,9% of the national territory.

Two factors seem to be important for implementing this concept: Geographical size and number of inhabitants. When comparing the respective performance it was found that the size of such parks is crucial for successful implementation, and also the ratio between permanent, non-permanent inhabitants and visitors. Wherever that latter ratio surpasses a certain level, additional efforts are needed to keep the critical balance, be it stricter command-and-control measures or higher educational inputs. Also, altering the given systems of production in such parks toward sustainability remains a challenge in most cases. In addition, building "corridors" between the existing natural parks *(Biotopvernetzung)* seems to be of importance.

5. *Bioregions to Come ?*

Bioregionalism, it was said in the introduction, may be a demanding concept. Depending upon the expectations implied in the concept, and the efforts made to implement it, no real bioregion may be found in Europe. This may even be so for the Alpine region, to which much thought has been given over the last decades and on which an international treaty was formulated, the ,,Alps Convention".

Bioregionaiism is prefaced by an understanding of the land, its geographical features, resource inventory, and carrying capacity (Sale, 1985). As regards the *European Alps,* these factors are well researched and broadly understood. The Alps, however, constitute a huge region, cutting across 5 nation states, with rather different cultures, economic structures, social and administrative capacities. In the past, it was thought that mass tourism and urbanization were the most risky human activities in that ecologically sensitive region. But it is only the smaller part of the local communities that were actually over-developed and became totally dependent on tourism. Over the years, tourism in most parts of the Alps

has been better adjusted to the biophysical conditions, even "soft tourism" has been initiated. As regards settlement patterns, rapid urban sprawl has been taking place, but rather at the fringes than in the Alps proper. Planners nowadays see the fact that traditional settlements in the high Alps are being increasingly deserted as the major threat to regional sustainability. The young people are leaving the villages and migrate to the cities, thus cutting experiential knowledge which is supposed to be crucial to maintain the ecological functions of fragile lands.

Also, there are severe cross-border and cross-sectoral effects. Some of the passes in the Alps are the most densely used North-South transport routes in Europe. Several valleys in Austria and Switzerland in particular suffer from high transport emissions. For years, people have been protesting against the transportation plans of the European Commission which run counter to all environmental evidence. Recently, Austria has introduced a transport tax for national vehicles and a special levy for international through-traffic, against strong protests from her immediate neighbours. By the same token, however, this initiative has renewed the demand to introduce economic instruments for environmental protection on the European level.

The "Alps Convention" provides a general framework for integrating ecosystem management and economic development of the region. It contains guidelines both for maintaining the ecological functions and strengthening the economic basis of the region; it calls for permanent information flows and improved regional cooperation. Implementation of the convention, however, is lacking. Partly because both the ,,sustainability" and the "criticality" issue have been undervalued in that treaty, mainly, however, because the necessary institutional changes have not been introduced or workable coordination mechanisms in a multi-cultural region were not established.

Though the Alpine region, with regard to its biophysical structure, its resource inventory and natural carrying capacity, may qualify as a major bioregion in Europe, the concomitant change (and harmonization) of those beliefs, attitudes and values that affect humans' interaction with the natural environment (Diffenderfer/ Birch) seems still to be missing.

6. *Bioregionalism: Barriers to Implementation*

A bioregional perspective leads to discern a hierarchy or spectrum of small as well as larger regions in which planning has been either of a reactive, curative type or of a pro-active, preventive type. In Europe there is one (there are several?) environmentally critical region(s), and there are environmentally rather stable regions with a high potential for sustainable development. While in the former restoration and stabilization of ecological functions is of utmost importance, due to over-exploitation of natural resources and over-burdening of sinks, in the latter the major task is to safeguard ecological functions and/or to reconcile ecosystem management with economic restructuring for sustainable development.

For various reasons bioregionalism in a true sense is not yet established in Europe - be it because of historical or structural conditions. Also, there are several political, social and economic barriers to the implementation of a workable bioregionalism, particularly the following ones (cf. Diffenderfer/Birch, op.cit., p.7):

- *Political viability:* The jurisdictional boundaries of decision-making may not correspond to the scientific criteria of nature conservation, and the biophysical structure of a region may cut across several political boundaries. Such situations call for institutional changes and/or innovative decision-making procedures.

- *Citizen participation:* While some regional plans have succeeded in getting the necessary citizen support, others have not. Pragmatic bioregionalism needs a framework to allow for a high degree of local autonomy while at the same time protecting broader regional interests and ecosystem health. This leads to the question of optimum size of a planning region and the balancing of diverse interests.

- *Property rights:* Conflicts result from any attempt to balance economic, social and environmental interests in the name of sustainability. This may require a re-definition of existing property rights through (a) internalization of social and environmental costs of private property, or (b) to the establishment of new (the re-activation of traditional) forms of common property.

- *Systems of production:* Many regions in Europe and elsewhere are currently tied to environmentally rather destructive production and consumption structures. Therefore, bioregionalism of whatever kind necessitates ecological restructuring of the economy, i.e. sustainable systems of production.

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