

THE CONTRIBUTION OF BIOFUELS TO THE SUSTAINABILITY OF DEVELOPMENT IN LATIN AMERICA AND THE CARIBBEAN ELEMENTS FOR FORMULATING POLICY



SIXTY YEARS WITH LATIN AMERICA AND THE CARIBBEAN



Bundesministerium für
wirtschaftliche Zusammenarbeit
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The contribution of biofuels to the sustainability of development in Latin America and the Caribbean: elements for formulating public policy

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Executive Summary

Given the increasing difficulty of ensuring the supply of crude oil and oil products, and the sharp increase in their prices, biofuels programmes in the developed countries—particularly the United States and the European Union—represent a series of opportunities, challenges and risks for the countries of Latin America and the Caribbean. Thus, if biofuels production is to create economic growth without jeopardising our natural capital and social equity, it must be developed in the framework of well thought-out national policy.

Biofuels public policy cannot ignore national objectives, which involve not only agro productive specialization, but also expanding the availability of energy to the population and protecting the natural patrimony. Accordingly, it is incumbent on each country to define its own agenda, taking advantage of the demand from the developed countries as a means of solving their own problems and creating new opportunities for sustainable rural development.

Given the complex, multi-dimensional nature of biofuels policymaking—as will be outlined in this paper—it is only under certain conditions that biofuels production programmes can contribute to sustainable development.

A significant number of the region's countries have set goals for the local market, and have passed legislation to develop biofuels, without a thorough examination of the impacts that such development may entail in terms of agriculture and natural resource use, as well as in the social sphere—particularly as regards poverty reduction and food prices.

Thus, it remains to define a policy agenda which can assure a real contribution to sustainable development. In other words, though biofuels production clearly has microeconomic benefits, especially in terms of agribusiness, a number of questions must be examined carefully before policy is put in place:

- **The net balance of biofuels programmes**, in terms of fossil fuel energy, must be studied, examining the effect of replacing oil products for domestic consumption (especially in the transportation sector) in relation to the consumption of fossil fuel energy throughout all links of the biofuels production chain. If this balance is not significantly positive, biofuels programmes will risk creating other negative impacts for import-dependent countries, without any compensation whatsoever in terms of fossil energy savings or foreign reserve levels.

- If the above-mentioned balance is not significantly positive, it must be determined whether the introduction of biofuels will actually have a positive effect on greenhouse gas emissions and contribute permanently to achieving the ultimate objective of the Framework Convention on Climate Change.
- In the case of biofuels production based primarily on monocultures, an assessment must be made regarding the impact on the social conditions affecting the labour market, concentration of property, and social distribution of the gains. If monocultures predominate strongly, biofuels programmes could ultimately have a negative impact on employment, on reducing distributive asymmetries, and on rural development.

There are marked differences between the region's countries in regard to production and use of biofuels, natural resources, previous experience and technological development, availability of alternative energy sources for transportation, degree to which the basic energy needs of populations are being met, and poverty and under-nutrition. Thus, no single, across-the-board criteria on the appropriateness of biofuels programmes can be considered valid.

Countries with long experience producing and using bioethanol, with advanced technological development in all links of the productive chain, a mature automobile industry and a very large domestic market could become large exporters of that fuel. In the case of major vegetable oil exporters that also have abundant natural resources, there are actors willing to become involved in the export of biodiesel. However, in terms of natural resources, biodiversity and exacerbating social asymmetries, serious risks could accrue.

As a general matter, it is quite possible that the impact on agricultural activity could be minimal provided that biofuels production does not bring with it greater technology to increase the productivity of existing types of crops, or provides a means of extending the agricultural frontier in a sustainable fashion. At the same time, however, better management of soil and water resources will be needed, and existing varieties must be improved, along with the use of any new varieties that can be appropriately adapted to the ecological conditions.

In those of the region's countries that are poor in natural resources, and in some that suffer from marked poverty, under-nutrition and/or inadequate coverage of basic energy needs, exporting is not a sustainable option, since it would have negative effects on various aspects of sustainable development.

ECLAC has been emphasising that, in addition to expanding supply—which may have unpredictable impacts on a planetary scale, given sharply rising energy consumption—greater priority should be given to moderating consumption, especially in the developed countries. Thus, energy saving appears much more compatible with sustainable development than do biofuels, which are at best a marginal, short-term solution to central problems of energy and the environment.

Since there has been little actual regional or national public policy experience with biofuels in Latin America and the Caribbean, this monograph defines certain types of different scenarios, as a means of dealing with the complexity of the analytical challenge. From the point of view of sustainable development, perhaps the proper approach would be to meet the population's basic energy needs through rural development policies. This approach would place priority on the problems of poverty, indigence and under-nutrition, while guarding against the distributive asymmetries and displacement of small producers that biofuels production could cause.

Such problems, of course, go far beyond the scope of this document. Here, we limit ourselves to looking, by way of example, at policymaking issues in countries that fall under four different categories:

- countries that are dependent on crude oil and/or oil products, that have balance of payments problems due to their high energy bill, and whose coverage of their population's basic energy needs is low;
- countries that are dependent on petroleum, and whose coverage of their populations' basic energy needs is moderate;
- countries that have a variety of energy resources and could diversify their energy matrix further by producing bioethanol and/or biodiesel, but that are nonetheless importers of oil products; and
- countries whose comparative advantages and place in the technological learning curve provide them entry to the world market.

Finally, the perspective adopted here is that the overall public policy approach to biofuels production and use should be multi-dimensional and must be managed in a centralised fashion. Thus, participation must not be limited to energy authorities, but must also draw on input from relevant government entities concerned with agriculture, industry and transportation, finance, natural resources and environment, social areas such as health, and regional entities. A coherent biofuels policy can only be built on the basis of common agreement and adequate information. Once such governmental consensus is achieved, reactions and contributions from civil society can be incorporated in formulating policy. In short, the rules governing investment in biofuels must flow from a comprehensive approach, rather than merely from individual points of view.

Introduction

The present study adopts an integral, intersectoral approach to the problem of biofuels policy and to the issue of the sustainability of development in the region's countries.

It is divided into four chapters. The first deals with the international context, and explains the motivations behind biofuels policy on the world agenda, as well as the challenges and questions arising from market penetration goals in both developed and developing countries.

Since biofuels policy must be part of energy policy more broadly, the second chapter analyses salient aspects of the region's energy situation, as well as the elements of energy policy as they relate to the dimensions of sustainable development.

The third chapter presents “stylised” situations for the development of biofuels, analysing different categories of countries as regards bioethanol and biodiesel.

Chapter four outlines possible paths to an appropriate biofuels agenda, indicating policy elements needed to ensure the sustainability of development, factors that may work against the agenda, and the way in which biofuels policies need to be assessed.

Since biofuels can be obtained from a variety of different agricultural products, ranging from herbaceous and woody plants to different types of agricultural and livestock waste, it was necessary to specify what types of biofuels we would be dealing with here.

Etymologically, the term “biofuels” signifies fuels obtained from biological sources. However, both crude oil and natural gas (at least under the prevailing theories on its organic origin) are of biological origin (since these hydrocarbons come from phytoplankton and

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