

## ECONOMICS VERSUS ENVIRONMENT

### TRUE OR FALSE DICHOTOMY

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The role of the economy in today's societies is a fundamental one, since economic determinism is an unstoppable force. Nothing can deprive human freedom like total absence of financial means. Therefore, for biocentric society to realise its basic aims it has to achieve bio-economic development, i.e. rise in production and employment. Otherwise a vast segment of the human population will be left without the means for living, will be condemned to starvation and homelessness, and will be deprived of health protection etc.

Paradoxically, only sound economic development can contribute to the recuperation of the environment. On this planet there is an environmentally-literate population living in poverty and an environmentally-illiterate one which is not poor. In other words, it is only through an educated population that a bios-oriented development can become a reality. We must pursue a new development paradigm and integrated environmental economics. Bio-education secures environmental literacy for every decision maker, employee and consumer, a necessary prerequisite for the realisation of a biocentric society which will secure a brighter future for the entire planet. It seems that a biocentric society is of fundamental importance and a price to be paid for peace, inner and any other. No goal set by a bios-oriented society is as clear and unconventional as the task of taxing personal incomes, consumption and luxury consumption in order to create and sustain an open and modern bios-oriented educational system.

Einstein said that there is no better economist than nature. A better understanding of the environment would enrich economists with a more profound understanding of their own responsibilities towards the state of the environment and of the legacy left to present and future generations. Therefore, an economically efficient society implies stable and sustained growth, which is hard to imagine in a society other than a bios-oriented one. No one can doubt the favourable economic effects of such a society and such a policy. In order to meet the challenges of the next millennium, economics must re-evaluate its role towards global development and take responsibility for the state of natural resources throughout the planet. A new bios-supporting structure for society based on, among other things, bio economics, calls for the creation of ethical, as opposed to merely pragmatic, investives. Since business people are realists first and foremost, the environment can and should be seen as a challenge and as a new opportunity for more profitable and environmentally-friendly production. That these goals are completely compatible is a fact which needs to be stressed.

Only a bios-oriented society understands that bio-economics as an interdisciplinary concept urgently needs to develop outside the confines of conventional economic science. A fundamentally-revised system of economic concepts and economic thought contributing to environmental preservation is a prerequisite for a stable and harmonious global economy. The new economics of the 21st century need to represent bios-evaluated conventional economic theory. The evaluation of natural resources, externalities, "green" accounting and "green" GDPs have to become the cornerstones of the new development paradigm for the third millennium. The fact that developed countries had the most stringent environmental legislature which led to the most environmentally-friendly production processes and products makes the dichotomy between economics and environment a false one.

This paper investigates the means and justifications for making business and environmental protection mutually supportive in developing economies. The purpose of this work is to try to show why the reconciliation of business and the environment can be achieved, and why there is a need to incorporate environmental management into business of vital importance for developing economies. Special attention will be paid to the effects of environmental standards on world trade, particularly on the exports of developing countries. Market oriented economies, as well as corporations from these economies, should aim to make management policies environment- and profit-oriented at the same time. Managerial resistance and refusal to accept the environmentally-based preferences of the public must soon be substituted by their acceptance of the fact that companies must take full responsibility for the emissions of their manufacturing processes, as well as for the environmental impact of the use and eventual recycling or destruction of their products. Without environmentalist-minded business management there will be a loss of not just fast-growth market openings but of present market shares.

It is quite obvious that the development of environmentally-acceptable products is in the companies' commercial interest, since, nowadays, environmental acceptability is a sine qua non condition if the product is to be sold on the world market. It is up to companies to go beyond what the law requires and do everything in their power to overcome the dichotomy of economic considerations on the one hand and ecological demands on the other. Also, any businessman concerned to secure the profitability and long-term viability of the company is bound to give thinking space to the question of environment-oriented business management. Instead of being seen as a threat to the business community, tougher environmental standards have to become a major challenge for the companies of developing economies. The indisputable fact is that only through free market competition is it possible to restore the ruined environment, as well as that environmentally acceptable business activity has to be profitable.

An accurate anticipation of the future trend in the business environment of companies is considered to be a key premise for successful planning. As we are approaching the turn of the present century, the leading world's corporate managers have been trying to picture the business environment of the future. It is thought that consumers at the present level of development will categorically refuse to accept the ongoing processes of environmental degradation.

This fact pointed even firms from developing economies towards more responsible action in order to face up to the stronger environmental concerns of the public. Inevitably, challenges for company business policy are going to increase over the years. Research among leading managers on the issues which will influence or even define the future business circumstances implied that stringent environmental legislation is at the top of the list.

### **Making business "green"**

Companies, being the prime consumers of natural resources, have to face an above-average sense of responsibility for preserving those resources. The fact that industry is one of the prime causes of environmental damage makes it the prime target of attempts to improve the environmental situation. The main aim is to make management policies environment and profit-oriented at the same time. There are numerous examples which prove that the environmentalist approach to management can increase company profits by saving water, energy and expensive raw materials, or by offering new environment-based business opportunities.

During the 1970s and 1980s, a number of trade and business associations developed good environmental practice guides to help businesses meet the more demanding environmental challenge. More recently, two formal environmental management initiatives have been developed and structured: The British Standard – Environmental management Systems BS 77650, and The European Union – Eco-Management and Audit Scheme – Regulation 1836, as well as ISO 14000.

The need to incorporate environmental management into business is now a global phenomenon. Companies in developed economies are realising that environmental protection is imperative for their very existence. Also, the increasing sensibility of the public gives the profit-oriented managers sound economic reason for becoming "green." The global green movement led to a new attitude towards the issues of organisation, accounting and balancing success, as well as to the public relations of companies, due to the fact that consumers award environmentally-friendly companies with a larger share of the market. This is supported by various consumer researchers in the USA. According to the results, some 70% of consumers declared that a company's environmental reputation influenced their decision as to whether they would purchase theirs or someone else's product.

Environmentally-sensitive consumers are using their influence on the market in order to affect domestic industry. The notorious fact that in the world market the demand for environmentally-friendly products has a constant growth trend provides firms with the reason to become "green." Those companies which operate in the world market are aware of a dramatic shift in consumer preferences and realise that they must follow it. Therefore, many companies admit the need for new business, marketing, research and development strategies.

It is a well-known fact that there is a segment of the population willing to pay more for environmentally-friendly products. Furthermore, various products originating from developing economies are soon going to become unacceptable in the aspect of environmental quality. While making larger profits by evading environmental research investments, companies which are insensitive to the environmental impact of their actions in the long-run will lose by forfeiting their environmentally-friendly image. According to predictions, the future market of chemical products belongs to the companies with the research and development abilities to develop environmentally-benign molecules in the years ahead. The current situation on the world chemical market proves that the long-term survival of chemical companies is conditioned by their responsibility for chemical substances from the period of creation to the deposition phase. Therefore, an acute waste problem has to be solved by researching bio- and photo-degradable plastics. The message is clear: society holds companies fully responsible for the impact their products have on human health and on the environment. Faced with the environmental responsibility and pressed by public opinion, producers developed various business strategies in compliance with the new environmental standards.

The initial resistance and refusal of managers to accept the environmentally-based preferences of the public is soon to be substituted by their acceptance of the fact that companies must take full responsibility for the emissions of their manufacturing processes, as well as for the environmental impact of the use and eventual recycling or destruction of their products. Well aware of this, some of the companies created Environmental Action Programmes and Internal Environmental Programmes.

Whereas the majority of the companies in developed economies succeed in meeting environmental standards, some 20% of the companies aggressively seek perfection in their environmental performance. The so called "leaders of the world market" go beyond what the letter of the environmental protection law demands. Dust filters and waste gas scrubbers were installed long before they were required by law. Since most of these companies have subsidiaries, often in countries with less stringent environmental legislation, they are gradually brought up to the parent company's standards.

The greatest effort, and consequently the best results, are achieved by the chemical companies and energy production plants, due to the fact that enormous environmental risks are inherent to their products and production processes, not to mention that the strongest public pressure is placed precisely at these quarters. As a result of this, numerous chemical and oil companies introduced environmentally-benign business policies. However, many companies which are not exposed to environmental pressures also began paying more attention to their business policies relating to environmental protection, as a means of precluding public pressures in the future. Heavy industry firms are mostly motivated by the need for risk reduction, whereas the companies dealing in consumer goods tend to be motivated by the prospect of market expansion. Some of the pro-environment firms are high profile companies producing complex products such as cars. Producers of consumer goods on the other hand, as well as banks and other companies whose operation does not jeopardise the environment, are building up on their green image in order to achieve a competitive advantage.

However, even the environmentally pro-active companies in developed economies are at the beginning of this challenging tour. At this moment in developed countries, only the most obvious forms of pollution, such as smog and other air pollution produced by industrial facilities, are being treated. Since environmental standards are becoming more severe, it will be

necessary to double the effort through the implementation of environmental auditing and a more efficient use of energy, as well as inputs in general. In order to minimise their environmental impact, some of the companies started to conduct various research projects aimed at increasing the efficiency of their products or creating new products not consisting of CFCs or other environmentally unfriendly inputs.

To ensure that environmental policies are adhered to by every competitor, some companies from developing economies also established procedures for regular environmental auditing. There is an auditing team which measures the influences and effects on the environment. The experts who monitor the factory performance from the environmental point of view are from the technical, chemical, biological and other sciences. The responsibility for meeting environmental standards is delegated to each plant. So, although the environmental audit allows corporate headquarters to monitor the whole situation, its primary function is to serve the line managers. The audit team compares the environmental performance of each plant with local or national standards. It also examines toxic material storage and advises on any action that should be taken.

An industrial company can exert influence on its suppliers to switch to more environmentally acceptable products. Some producers started to audit their suppliers as well, although these examinations are less detailed than those of their own plants. These companies believe that such audits ensure that they do not simply push polluting processes out of their own company and back to the suppliers, and in this way evade responsibility.

Without regular auditing, the best possible environmental policies will be ineffective. Therefore, an audit system will steadily reduce the occurrence of accidents and will strengthen expertise at the operational level. The industrial cycle consists of four stages – extraction of raw materials from the earth, manufacturing of products, using the product, and then, eventually, disposing of it – and most companies did not concentrate on the environmental impact of the second and third stages of manufacture and use until recently. But thanks to rapid technological advances, manufacturing processes have already become dramatically cleaner. Unfortunately for the developing countries, new technologies still remain hard to acquire due to financial difficulties.

The fact that products which are the source of great environmental impact will face stringent environmental standards in the future is a constant worry for these countries. It is also reasonable to expect claims to minimise the environmental impact of the product after there is no need for it. The problem of deposition is acute in almost every part of the world, so it is quite clear that massive recycling of products will soon become the norm, as well as the fact that the companies will be responsible for the entire cycle of their product.

### **Environmental management systems (EMS)**

Individual companies are prepared to go along with the environmentalist concept in order to achieve their environmental aims. A product can only be said to be of a high quality if it is produced in a way not inimical to the environment. Furthermore, the adoption of cost-reducing environmental protection measures covering such things as raw materials, energy or water saving programmes, and the exploitation of market openings for environmentally sound products can all improve company profitability.

Throughout the environmentalist business management, the company has access to potent international information channels, as well as access to widespread specialist advice. It can exert a direct influence on chambers of commerce and industry; it can also be positive for staff mobilisation as well as staff creativity, and it can be suitable for the implementation of various environmentalist pilot projects.

For different kinds of EMS, the prerequisite is to have a well defined and documented environmental policy of organisation. The environmental policy of the company sets the environmental objectives of the company. The management shall ensure that this policy is relevant to its activities, products and services and to their environmental effects. Furthermore, the environmental policy shall be introduced, implemented and maintained at all levels or organisation in compliance with all relevant environmental regulations. It involves a commitment to the continual improvement of the environmental performance of the company. It also has to be available to the public and to all employees.

Usually, a representative for the environmental management system is appointed by the highest management level with defined responsibilities and authority, to ensure that the requirements of the environmental policy of the company are implemented and maintained.

### **Effects of environmental regulations on competitiveness**

Environmental regulations on products are relatively scarce, and are concentrated in sectors such as food, tropical timber products, chemicals, textiles, paper products and products containing hazardous substances. Nevertheless, consumer preferences for environmentally-friendly products may have an effect on their competitiveness. Therefore, the competitiveness effects of external environmental requirements depend, to a large extent, on the composition and destination of exports. If a large share of exports comprises environmentally sensitive products, then regulations and standards are likely to have a more significant impact on competitiveness; and if export markets are large, there is a greater incentive to improve environmental standards of products.

Other factors which will affect the competitiveness of firms include access to information, availability of raw materials and technologies, infrastructure facilities and firm size.

#### *Composition and destination of exports*

The larger the share of exports of products which are sensitive to environmental regulations, the higher the likelihood of the overall export performance of a country to be affected.

However, some of the negative competitiveness effects in fast-growing economies can be diffused through a concerted effort at export diversification, both of products and of markets.

Some surveys of exporting firms showed that most of them had not perceived or experienced the major competitiveness effects of international environmental standards. This is partly explained by trade patterns, as well as by the fact that the European market is not the most important market for those countries.

Export growth in some countries is largely based on products which use natural resources and energy intensively. Although the cost of pollution reduction in these sectors is high, the competitiveness effects have not been significant because the sectors are dynamic. The surveys also suggest that participation in international markets may prompt increased care with environmental variables. Case studies show that packaging requirements have directly affected producers of carton boxes – a large share of exports go to developed country markets – and indirectly – among the principal clients of the sector are exporters of fruit and manufactured food to the European markets. Environmental improvements have thus been made as a consequence of the export orientation of the sectors concerned.

#### *Cost structure*

If export competitiveness is based on being able to sell cheaply, as in labour intensive products such as textiles and footwear, then regulations and standards which lead to any cost increase are more likely to have an adverse effect on competitiveness. For example, packaging regulations may have more significant effects on competitiveness in the case of low value added products, than they do on high value added products. Similarly, input price increases arising from compliance with external environmental regulations will affect competitiveness adversely. On the other hand, in the case of policies such as eco-labelling, price-based competition may in some cases insulate producers from the competitiveness effects of such policies.

In the case of commodities, a large proportion of the cost would be accounted for by the cost of raw materials, and thus the competitiveness effects of environmental regulations may be significant. The cost of inputs may be an important element in determining the effects of environmental regulations on the competitiveness of the final product. Bans on pesticides or on some kind of dye will not only affect the dyestuff or chemicals industry, but will also have far wider implications for exports of food as well as of textiles and garments. This is because some 60% of the dyeing costs of fabrics is attributed to raw material costs. Similarly, bans on certain pesticides and chemicals are likely to affect exports of food products to the OECD countries. The above example shows that the availability of specialised inputs has an important bearing on the competitiveness effects of environmental policies.

The availability of raw materials and technologies would also have a bearing on the cost of compliance. For instance, cleaner products and processes may entail the substitution of imported raw materials for domestic raw materials, particularly for industries which use chemicals as inputs, such as textiles and footwear. Most of the manufacturing companies found that compliance with environmental requirements would necessitate the import of raw materials and intermediate goods, often at higher cost. Obtaining an eco-label may be made difficult because of a lack of appropriate raw materials and chemicals. Competitiveness effects are more pronounced, depending on whether the standard or regulation requires a change in the process or technology.

An example of how product standards may require changes in technology and investment is given in the study on India. This is because producing a certain dye would require upgrading the technology, including establishing secondary treatment plants in order to obtain the requisite quality, and investing in automation control instruments to monitor the area-to-fuel ratios and carbon dioxide emissions. Even where imports of technology are not required, additional know-how and imports of chemicals to meet product standards may be high. If the necessary technology is mostly available domestically, the volume of exports will be unaffected by the imposition of stricter regulations in the European Union.

#### *Structural factors*

Other structural variables play a large role in determining the adjustment capacities of firms or sectors to external environmental regulations, and, therefore, affect competitiveness. These include import tariffs, relationship with foreign firms, price structure and factor composition.

Some exporters have reported that the PCP ban in the German market raised the cost of tanning leather. By contrast, some other producers did not find their costs increasing significantly in response to the PCP ban. There are several structural factors that could have contributed to this difference, among them being trade liberalisation policies, which made imports more accessible. In contrast, an opposite tariff regime may have made the importation of the substitute chemical more expensive and thus prohibitive.

Studies on the agricultural sector show that internalising externalities may require structural changes in farming patterns.

With regard to the competitiveness effects of linkage with foreign firms, some studies indicate that subsidiaries of developing corporations or companies otherwise linked to foreign enterprises have also introduced substantive changes in environmental management. The principal producer of special papers allocated 25% of its planned investment to environmental protection equipment and, following instructions from the parent-company, is fully importing chlorine-free pulp for all its products.

Lack of infrastructure facilities may make it difficult to comply with environmental standards. A World Bank study estimated that only about 15% of the costs needed annually for sustainable development in developing countries would be for industry, assuming that developing countries would reach comparable environmental standards to those of the OECD countries in 15 years time.

*Firm size*

Size has an important influence on the ability of a firm to implement environmental standards and regulations. Investment in environmentally-friendly technologies may be easier for large rather than for small firms. Large firms may also find it easier to access financial information and raw materials.

The textile industry of developing economies shows that only large companies have primary and secondary level effluent treatment facilities and pollution monitoring units. Small firms are more vulnerable because their awareness of eco-standards is low and there is insufficient knowledge about chemical inputs. In addition, environmental investment in effluent treatment plants requires a minimum scale of operation.

Additionally, it has also been estimated that meeting eco-standards in most of the major markets may increase fixed costs by about 10% and variable costs by 15% at the firm level. This may have significant effects on competitiveness in view of the fact that profit margins in the highly competitive textiles sector are not very high.

A study of the paper industry shows that small firms located in developing countries, which generally use old equipment and outdated technologies, often have a more serious environmental impact than large firms. It is more difficult to improve the environmental performance of these firms due to their limited financial capacity and space. For many small firms, for instance, it is not economical to recover chemicals. Large investments may also be difficult to justify, since older factories tend to be completely written-off. Also, size makes technological adjustments easier and more economical.

Infrastructure improvements may also be needed more urgently for small firms than for large firms. For example, better municipal wastewater treatment facilities may reduce the costs of treating water effluents for small firms.

*Information, awareness and transaction costs*

Obtaining information about changes in regulations and the fact that they vary from country to country can have significant effects on competitiveness. Examples of industries that have been affected by differing foreign regulations are motor vehicles and pharmaceuticals. In this case different technologies and production runs were required to meet differing environmental standards across markets.

Many developing countries are implementing increasingly stringent environmental regulations and standards, thus reducing the scope for trade friction. In some cases, these standards may be more stringent than those of their OECD trading partners. As in the case of developed countries, domestic environmental regulations appear to have generally had a relatively small effect on the competitiveness of firms in developing countries.

Competitiveness tends to be relatively more affected by the environmental regulations of trading partners. Open economies have greater scope for reducing competitiveness effects because of better access to information, inputs and technology. On the other hand, openness increases import competition, and may lead to negative competitiveness effects, unless the firms themselves are dynamic and are able to expand their markets. The competitiveness effects of both domestic and external environmental regulations may differ between small and large firms. Studies indicate that large firms have been hardly affected in relation to small firms. This suggests that the need to comply with external environmental standards may have some effects on the level of industrial concentration. Governments may have to introduce specific measures to promote adaptation and innovation in small firms. Special assistance mechanisms may also be necessary for disseminating information on topics including raw materials and research in cost effective means for mitigating the competitiveness effects of environmental standards and regulations.

Economies which are stagnant are less able to implement environmental standards. Growing economies, on the other hand, have limited options for moving towards compliance with stringent standards, because the negative effects in some sectors may not be compensated by the growth of other sectors. Economic growth goes hand in hand with increases in capital stock, and it is easier to install cleaner technologies when new investments are being made. In addition, in growing economies the possibilities of innovation are likely to be higher, as are the chances of mitigating adverse competitiveness effects in the long-run.

Improvements in infrastructure can also play a vital role in reducing the costs of compliance, particularly for small firms. For example, improved infrastructure would reduce the cost of compliance with water effluent standards, as part of the expense would be borne by municipalities which install wastewater treatment facilities

**Conclusions**

The link between environmental policies and competitiveness is a complex one. Empirical analyses suggest that environmental standards and regulations in developed countries have not as yet had significant effects on competitiveness. They may, however, have a greater effect on the competitiveness of developing countries. The effects of similar environmental regulations or standards on competitiveness can be negative in the short-run, but may be less significant, and can even be positive, in the long-run. The ability of firms to absorb adverse competitiveness effects depends on factors such as the rate of growth and the openness of the economy, and on their capacity to generate innovative responses to environmental policies. In the case of developing countries, fostering a climate for innovation is easier if they have already embarked on a path of sustained growth.

Governments may nevertheless be faced with claims that environmental policies may worsen the competitiveness of domestic firms or industries compared to firms in countries where

standards are lower or not enforced. Such claims have indeed led to calls by environmental groups and others for measures to level the playing field. There are legitimate reasons for diversity in environmental regulations across countries. Moreover, such calls for levelling the playing field overlook the fact that, even if countries were to attain similar levels of environmental quality, the cost would vary from country to country. Thus, environmental countervailing duties, or similar measures, against products from a country with lower abatement costs may simply be protecting an inefficient industry. Such measures, moreover, would be inconsistent with the rules of the WTO.

Empirical analysis of the factors affecting the link between environmental policies and competitiveness also shows that the same measure may affect two countries differently, and that the competitiveness effects of external environmental policies may be relatively more onerous than those of domestic policies.

The overall competitiveness effects of environmental policies, both domestic and external, depend on a number of factors such as the composition and destination of exports, firm size, availability of raw materials, the growth and openness of an economy, information and transaction costs arising from variations in environmental regulations across countries, industrial restructuring, and innovation. In the context of increased globalisation and trade liberalisation, openness was found to play an important role in the link between environmental policies and competitiveness. The more open the economy, the better is its access to information, inputs and technology. Increased openness implies greater commercial and investment links with countries with stringent standards, leading to greater diffusion of environmental standards to developing countries. Openness may also involve increased competition in domestic markets and may consequently encourage cost effective solutions to environmental problems.

The effects of environmental policies vary between large and small firms. Small firms are more likely to be adversely affected than large firms because of poorer access to information, raw materials, capital and technology. Moreover, the economic use of environmentally-sound technologies may require a minimum scale of operation, often beyond that of small firms.

The competitiveness effects of environmental policies depend to a large extent on structural factors. Therefore, in making environmental policies effective and in addressing their competitiveness effects, it would seem necessary to give due attention to such factors, a number of which would go hand in hand with economic development. For example, investments in sanitation, in the provision of clean water and in education in developing countries are more likely to produce higher marginal returns for the environment than investments in reducing industrial emissions. Thus, insisting that specific process-related environmental standards be met by exports from developing countries might take more resources away from more pressing development needs with larger environmental returns both at the local and at the global level.

International conventions may have significant effects on the trade and competitiveness of developing countries. Compensatory mechanisms, such as financial and technological transfers, are needed to induce compliance with the obligations undertaken by developing countries.

Export diversification of both products and markets may result in reduced dependence on a few products and in the export of higher value added products, thus making it easier to internalise environmental externalities. Co-operative efforts between importing and exporting countries should be encouraged, particularly with a view to diversifying exports from developing countries. Transparency, technical co-operation and an improved dissemination of information on standards and requirements at both national and international levels will mitigate the cost of obtaining information particularly for small firms. It will also facilitate the process of adaptation to national and international standards.

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