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Protection of the Environment, International Division of Labour and the Developing Countries

by Ulrich Brösse, Aachen*

Environmental problems are encountered today all over the world, but they raise by their causes and nature two clearly distinguishable sets of problems in the economies of developing and developed countries. While those facing the industrialized nations result in the main from the industrial growth process, the typical environmental problems of the developing countries stem essentially from factors inherent in the low level of economic development – poverty, disease and inadequacy of basic supplies.

The environmental problems of the developing countries are largely identical with the problems specific to developing countries. Economic growth and a broadly-based advancement of their economic wealth are the means of shaking off many of the typical environmental problems. Development theory has presented various concepts with this aim in view in which the industrialized nations, the international division of labour and development aid are assigned greater or smaller roles. This raises a question which is to be examined here, namely, whether they do not, while solving the typical environmental problems of the developing countries still predominating at present, give rise to those facing the industrialized nations in their stead.

Consequences of Increased International Division of Labour

Increased international division of labour and international trade are expected to bring relief to the developing countries. Political demands in this direction have been lodged by the Third World. A larger share of international trade, and of the trade in finished goods in particular, was an avowed aim of the

developing countries at the Fifth UN Conference on Trade and Development (UNCTAD V) in Manila.

Quantitatively the international division of labour is of great importance for the developing countries compared with development aid. "Of what importance the exchange of goods with the industrialized western countries is for economic growth in the Third World is shown by a comparison of the foreign exchange incomes accruing to the developing countries from development aid flows on the one hand and own exports on the other: while aid disbursements rose between 1963 and 1976 only from \$ 6 bn to \$ 13.7 bn, the export earnings increased over the same period from \$ 22.5 bn to \$ 181.3 bn. It follows that even if the public development aid were to be stepped up considerably in the coming years – which would not be easy in view of the strained budget positions in many donor countries – it would not provide nearly as potent a stimulus as that attainable by further no more than average growth of export earnings."¹

An intensification of the international division of labour raises the question of the "rules" which will

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¹ H. Steeg: Handelspolitik im Nord-Süd-Dialog (Trade policy in the North-South dialogue), in: Entwicklung und Zusammenarbeit (E + Z), No. 5/79, p.8f.

govern it. The market-economy theory of foreign trade explains the nature, volume and direction of international flows of goods and services as due to comparative cost or price advantages and relative factor endowment differentials. This second aspect is of special significance in regard to the environmental problems. According to the Heckscher-Ohlin-Samuelson theorem a country will produce and export such goods in particular as are made with production factors with which it is well and plentifully provided in comparison with competing economies. Assuming – realistically – that, compared with the industrialized nations, very many developing countries are still amply provided with natural unencumbered environmental resources and these are not effectively protected by legislation, a free world market requires a shift of the production of environmentally injurious goods and the use of environmentally injurious production processes to developing countries. Countries with poor environmental resources will accordingly import such products and export goods the production of which is not or less environmentally injurious. The environmental effect will be increasingly damaging to the developing countries while bringing absolute or relative relief to the industrialized nations.

These effects are aggravated by a rigid policy in protection of the environment by the industrialized nations as this adds to the cost of “environment-intensive” goods in the advanced economies, with the result that locational advantages accrue to the underdeveloped countries and operations are relocated in developing countries. There will be a shift in the comparative cost advantages and disadvantages. The environment policy in one part of the world has thus, through the international division of labour, an impact on the quality of the environment in another part of the world.

In the final analysis the described type of division of labour comes about because it is held to produce benefits for all partners. These are reflected by the earned and national incomes. For the developing countries they can, besides, be stated in terms of jobs, infrastructure, education, etc. – i. e. by values which are to be achieved also by development policy. As against these positive effects there are however the negative effects of a deterioration of the environment. Speaking generally, it may be said that the described form of international division of labour will be continued as long as the developing countries do not assess their economic gain from international trade as less significant than the loss of environment quality.

Up to this day there has certainly been no extensive integration of the developing countries in the world economy on a market-economy basis. It has been pointed out that for decades the division of labour in the world economy between the industrialized nations and the Third World has been at variance with the rules and mechanisms of the market economy. Instead there has been a complementary division of labour of a kind in which the developing countries complemented the division of labour between the industrialized nations by supplying raw materials and thus helped the market to function very well – but only in a part of the world. The consequence was, and to some extent still is today, acute dependence of the developing countries on the commodity prices and their exports of raw materials, neglect of their internal markets and a disintegration of their foreign trade².

Import Substitution and Export Diversification

It is for this reason that development theory recommends the strategies of import substitution and export diversification for an international division of labour on a market-economy basis between developing countries and industrialized nations³. In the fifties and sixties almost all the more or less independent developing countries were pursuing the aim of import substitution. They did so largely for political motives: The newly gained political independence was to be carried farther by economic independence, and this necessarily involved independence from imports from the industrialized countries. These imports consisted mainly of industrial products. Hence import substitution meant industrialization and protection for the newly created industries from outside competition while agriculture – in which the bulk of the population was engaged – was discriminated against. Economically this amounted to waste of comparative cost advantages: The abundantly available production factor labour in agriculture was not employed advantageously under division of labour aspects; instead capital was imported, and the production was – contrary to the theorem of comparative cost advantages and the Heckscher-Ohlin-Samuelson theorem – carried on in

² Cf. U. Hiemenz, K.-W. Schatz: Erfolgchancen und Grenzen einer weltwirtschaftlichen Integration als Entwicklungsstrategie (Prospects and limitations of world-economic integration als a development strategy), in: Alfred Schmidt (ed.): Strategien gegen Unterentwicklung, Frankfurt/New York, p.77f.

³ For details of these strategies cf. U. Hiemenz, K.-W. Schatz, op. cit., p.78ff.

conjunction with modern technologies and by capital-intensive methods.

In this strategy the environment is not treated explicitly as the source of natural resources. From this follows that natural resources are neither seized upon consciously as locational advantages nor given special attention as a protection-providing ambit. This industrialization process has given rise to urban and industrial conglomeration areas with no less deleterious effects on the environment – and in some respects worse consequences – than have been encountered in the Federal Republic of Germany. In the big cities for instance they were worse because of the inadequacy of the drinking water supply and sewage removal; to give an example, more than 40 % of the recorded annual deaths in Bombay were reportedly due to insufficient water supply and inadequate sanitary facilities⁴.

Figures for Iran illustrate the detrimental effect of industrialization on the environment: An estimated 540,000 tons of dust, 400,000 tons of carbon monoxide, 540,000 tons of hydrocarbon compounds and 220,000 tons of sulphur dioxide were discharged into the atmosphere in Iran in 1971⁵. The corresponding figures for the Federal Republic are admittedly considerably higher but bearing in mind that the central region around Teheran is the favoured location for industry, that over 40 % of the gross domestic product is generated in this area and well over half of all motor vehicles are registered here⁶ one can guess what a heavy burden had been imposed on the environment in some regions of developing countries as a result of their industrial development by 1970.

The strategy of export diversification aims at the provision of a wider range of goods, especially semi-finished and finished goods, for the export trade. One of its objects is to avert a decline of the share of the developing countries in world trade and to bring about an improvement of their terms of trade. To this end the developing countries must take advantage of comparative cost advantages and their specific factor endowment if they want to be internationally

competitive. Environmental conditions can be used deliberately for this purpose as an element of development strategy, not only in the creation of industrial productions but in the extension and intensification of agricultural outputs. Two extreme positions seem to be conceivable in this kind of deliberate use of the environment in the service of economic development: At one extreme the environment is ruthlessly sacrificed to economic growth as has happened in many instances; at the other extreme there is the largest possible measure of conservation of the environment, which could however be opened for economic utilization, perhaps in the form of nature reserves. The two positions are incompatible, and the developing countries must decide how they want to use their natural resources⁷.

The Concept of Autocentric Development

The economies of the developing countries are however also expected to benefit from a curtailment of the international division of labour. The germane concept of autocentric development rests on the dependencia theory or the theory of peripheral capitalism which are to be regarded as critical responses to the traditional theory of foreign trade. They attribute the underdevelopment to the "asymmetrically structured relations" between the developing countries and the "capitalistic monopolies" or the relationship between the periphery and the metropolises⁸.

It is a fundamental thesis of this strand in development theory that the economies of the developing countries or peripheral economies are structurally defective by which term it is implied on the one hand that the sector of the means of production has not been developed fully or proportionately and on the other that the interplay between the means of production and consumer goods sectors are faulty because the means of production continue to be produced in the metropolises. Other defects such as small internal markets, uneven distribution of incomes, and inadequate infrastructures may be mentioned at random. The crucial fact is that the elimination of the defects presupposes appropriate checks on outside influences⁹. The international division of labour must

⁴ Cf. Y. R o v a n i : The problem of water supply and waste disposal, in: Finance & Development 16th year (1979), No. 1, p.14ff.

⁵ Cf. T. D j a m a l : Die Relevanz der Umweltprobleme für die ökonomische Entwicklung in den Entwicklungsländern (The relevance of environmental problems to economic development in the developing countries), Hamburg 1976, p.36.

⁶ Cf. T. D j a m a l : op. cit., p.37 and 44.

⁷ Cf. H. S i e b e r t : Umwelt und Außenhandel (Environment and foreign trade), in: Herbert G i e r s c h , Hans-Dieter H a a s (eds.): Probleme der weltwirtschaftlichen Arbeitsteilung, Berlin 1974, p.126.

⁸ Cf. D. S e n g h a a s : Entwicklungspolitik am Scheideweg? (Development policy at the crossroads?), in: Strategien gegen Unterentwicklung, op. cit., p.44.

be curtailed since it is a root cause of underdevelopment. As Senghaas puts it: "The intensity of the integration of the peripheries with the world market at the present time stands in the way of an economy that is directed towards the satisfaction of mass requirements"¹⁰.

In positive terms the concept of autocentric development implicates "the establishment of a production apparatus by the erection of industrial installations relevant to a relatively undiversified demand for labour-intensive mass consumer goods. Stress is laid on the mass demand, on a relatively undiversified demand, because relatively simple means of production can only be employed for the production of this kind of consumer goods if the consumption pattern is of this nature. In some cases such means of production would have to be imported but many peripheral economies possess enough technological expertise for the production of this kind of simple producer goods"¹¹

The "environment-intensive" goods are not mentioned explicitly in this concept. It focuses sharply on the elimination of poverty through satisfaction of basic needs of the mass of the population. The concentration on mass consumer goods, labour-intensive production methods, and appropriate technologies suggests that the desolation of the environment would be stretched over a longer period. Massive detriment to the environment in some regions as occurred within a short time during the period of import substitution need scarcely be expected nor need it be feared after what has been said that "environment-intensive" goods will be exported to the industrialized countries. On this count, too, the environment is likely to suffer less damage.

The agricultural production plays an important role in supplying the population and providing employment. In this sphere however means with deleterious effects on the environment are likely to be used as agricultural mass production methods set certain limits to conservationist technologies. A drastic demonstration of the problems involved is the fact that over a million children are being sent out into the Egyptian cotton

fields each year under the harshest climatic conditions to pick eggs of the cotton leafworm off the leaves of the cotton plants, which has proved a highly effective form of plant protection and saves foreign exchange¹². Whether this kind of autocentric development and "appropriate technology" is desirable and politically justifiable is a moot point however. If it is not, the only alternative in this particular case is importation of insecticides and with that increased international division of labour and detriment to the natural environment in the developing countries. The deleterious effects of the industrialization process will presumably show up much more slowly under this development concept, albeit at the cost of economic progress.

Environment Protection Needed Now

The international division of labour and development strategies are not the only factors by which the environment may be favourably or adversely affected. The particular modes of conduct of individual countries also have an impact. An extension of the international division of labour in consequence of comparative cost and price advantages as well as special endowments with production factors will cause structural changes on the international stage. These may in the industrialized nations give rise to problems in regard to competition and the labour market and to negative impressions of dependence upon the outside world which bring political forces into play: Affected industries, trade unions or what goes as public opinion may for instance wish to see the international division of labour brought about by economic factors "corrected" by action in the field of trade policy or by subsidies¹³. An argument often put forward in support of demands for subsidies or import restrictions is that the developing countries which are exporters of industrial goods are operating under more favourable cost conditions than domestic manufacturers. This line of argument ignores however the economic facts underlying the international division of labour, namely, that production regularly takes place and should take place where producing costs are lowest. The result is that the developing countries cannot bring their operational advantages into play.

The effect is the same when industrial states evolve environmentally beneficial technologies and apply them in their own country: In this case, too, specific locational advantages of developing countries are no longer brought to bear upon international trade. It is doubtful however whether such a technological development will make itself felt so quickly as to nullify

⁹ Cf. D. Senghaas, op. cit., p.45f.

¹⁰ Cf. D. Senghaas, op. cit., p.58f.

¹¹ Cf. D. Senghaas, op. cit., p.60.

¹² Cf. M. Metz: Ägyptens Kinder zahlen mit der Gesundheit (Egypt's children pay with their health), in: Frankfurter Rundschau, March 30, 1979.

¹³ Cf. H. Siebert: Ökonomische Theorie der Umwelt (Economic theory of environment), Tübingen 1978, p.116.

the specific advantages of production in the developing countries.

The developing countries sometimes conduce themselves to the desuetude of their natural resources on a wider scale in international trade: If investments in developing countries involve inordinate political risks, investors will be deterred even though the economic conditions for production may be favourable. The "involuntary" conservation of the environment is in such a case tantamount to "voluntary" renunciation of the advantages of economic prosperity.

With further economic growth and increasing prosperity, closer international integration of the developing countries with world trade in combination with aggravation of the environmental problems through industrial productions will make for a more acute perception in the developing countries of the need for conservationist measures. It will bring the developing countries face to face with the problems which confronted the industrialized nations some 10 to 15 years ago. When this happens, the production structure will have to be altered and adapted to the new awareness of the environment, and the consequent readjustments will obviously cost money. There is therefore good reason for the demand that the developing countries should now already make a start on conservational measures and refrain from launching productions and processes which have a detrimental effect on the environment. Institutions which concern themselves with environmental questions have made verbal and written statements to this effect¹⁴.

The economic reality in the developing countries points however in another direction: Since the available natural resources are often still plentiful in comparison with the man-made goods, the latter are more highly evaluated. There is a reluctance to regard detrimental effects on the environment as substantial costs reducing the national welfare, and in the present

state of development it is perhaps not even appreciated that there is a connection between the two. Such a generalizing statement requires of course qualification for regional differences but reflects the overall trend in the group of developing countries.

Environment Protection through Aid

In view of these possible injuries to the environment in the developing countries as a result of international division of labour and development policy the industrialized states and development aid donor countries must ask themselves whether they want to oppose this trend and are able to do so or not. It seems to be a fact that conservation of the environment has so far received no special attention in development aid either from the donor or from the recipient countries¹⁵.

In the short and medium term this has certainly its economic advantages for the developing countries. But the environmental resources of the world are being exposed to hazards the longer-term economic consequences of which it is impossible to judge at the present time. In the advanced economies the global aspects of many "environment-sensitive" goods should be borne in mind: Environmental hazards can sometimes spread across frontiers and have world-wide effects¹⁶.

The industrialized states may therefore be in error if they believe that productions which impair the environment in the developing countries will leave their own environment unaffected, the more so as little is as yet known about the global and regional repercussions of local emissions. Suitable protective development and relief measures for the environment in the developing countries may therefore be as necessary to the developed as to the developing states.

In the light of what has been said here it cannot be expected that major conservationist activities will be launched by the developing countries themselves¹⁷. Measures to protect the environment should and must therefore in future be included in development aid. The developing countries are unlikely to take an unequivocally positive view of conservation as a development aid component as finance set aside for this purpose would no longer be available for the promotion of economic growth in their countries. Commensurate additions to the development aid appropriations could however not only help to avoid conflicts between donor and recipient countries but serve the aim of world-wide protection of the environment and thus the interests of the industrialized states themselves.

¹⁴ Cf., e.g. the environment programme of the United Nations which lays great stress on the need for the protection of the environment, especially also in the developing countries.

¹⁵ Cf. B. Johnson: The environmental impact of foreign aid. Some multilateral agencies examined, in: *Zeitschrift für Umweltschutz*, No. 2/78, p.315ff.

¹⁶ Cf., amongst others, A. D. Scott: The economics of international transmission of pollution, in: OECD: *Problems of environmental economics*, Paris 1972.

¹⁷ An attempt is made by Glaeser however to demonstrate by drawing on China as an example that protection of the environment can be regarded by a developing country as an integrating factor for the development of the national economy. Cf. B. Glaeser: *Umweltschutz als Modernisierungsfaktor in der Volksrepublik China* (Protection of the environment as a factor for modernization in the People's Republic of China), in: *Zeitschrift für Umweltpolitik*, No. 2/79, p.225f.