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BIODIVERSITY CONSERVATION: STUDIES IN ITS ECONOMICS AND MANAGEMENT, MAINLY IN YUNNAN CHINA

Working Paper No. 6

Conservation, Protected Areas and the Global Economic System: How Debt, Trade, Exchange Rates, Inflation and Macroeconomic Policy Affect Biological Diversity

by

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Conservation, Protected Areas and the Global Economic System: How Debt, Trade, Exchange Rates, Inflation and Macroeconomic Policy Affect Biological Diversity[1]

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Clem Tisdell[2]

March 1994

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Rural nature reserves can have negative as well as positive spillovers to the local region and policies need to be implemented to maximise the net economic benefits obtained locally. Thus an 'open' approach to the management and development of nature conservation (biodiversity) programmes is needed. The purpose of this study is to concentrate on these economic interconnections for Xishuangbanna National Nature Reserve and their implications for its management, and for rural economic development in the Xishuangbanna Dai Prefecture but with some comparative analysis for other parts of Yunnan

The Project will involve the following:

1. A relevant review relating to China and developing countries generally.
2. Cost-benefit evaluation of protection of the Reserve and/or assessment by other social evaluation techniques.
3. An examination of the growth and characteristics of tourism in and nearby the Reserve and economic opportunities generated by this will be examined.
4. The economics of pest control involving the Reserve will be considered. This involves the problem of pests straying from and into the Reserve, e.g., elephants.
5. The possibilities for limited commercial or subsistence use of the Reserve will be researched.
6. Financing the management of the Reserve will be examined. This will involve considering current sources of finance and patterns of outlays, by management of the Reserve, economic methods for increasing income from the Reserve and financial problems and issues such as degree of dependence on central funding.
7. Pressure to use the resources of the Reserve comes from nearby populations, and from villagers settled in the Reserve. Ways of coping with this problem will be considered.
8. The political economy of decision-making affecting the Reserve will be outlined.

Commissioned Organization: University of Queensland

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Conservation, Protected Areas and the Global Economic System: How Debt, Trade, Exchange Rates, Inflation and Macroeconomic Policy Affect Biological Diversity

ABSTRACT

The global economic system is characterised by international specialisation in production, massive amounts of production and trade in goods and services and the presence of international flows of finance, capital and technology. The system is bound together by the use of money and markets which rely on and foster self-interested production and exchange of commodities. To some extent, the system is supplemented by international movements of labour and by official and unofficial aid. Major decision- makers in the global system include private traders and financiers, multinational corporations, national (centralised) governments and international public service bodies such as the United Nations and its agencies.

The system results in the replacements of ecosphere communities by biosphere communities and depersonalizes social, economic and environmental relationships. The system places great pressure on natural resources, results in the increased loss of natural areas and of biodiversity and adds to global pollution. Its major consequence is the much greater externalisation of environmental ·effects of economic activity. The system is a threat to the sustainability of production in the long run, despite its economic advantages such as reduced economic scarcity as a whole in the short- to medium-term.

Natural areas in isolated or relatively isolated economies are at particular risk when these economies are drawn into the global system particularly if significant economic growth in achieved. In such cases, natural areas must increasingly be officially protected or set aside for national parks if irreversible genetic loss is to be avoided. At this time, aid from developed countries for nature protection may be crucial. Once a country becomes 'developed' and integrated into the global economic system, conservation of nature and therefore biodiversity becomes heavily dependent on government maintenance and protection of natural areas. In. tum this relies substantially on political processes including lobbying by conservation groups.

It has been claimed that free trade, e.g. implementation of GATT regulations can be expected

to foster greater conservation as will .the structural adjustment policies recommended by the IMF and World Bank to debtor countries. These call for freer markets and smaller government sectors. But these policies do not ensure greater conservation and can reduce biodiversity. The position is complex but the safest approach is to target policies specifically to maintain biodiversity and natural areas. Thus if the above policies are pursued they should be supplemented by specific policies aimed at protecting natural areas. As far as biodiversity is concerned, it is dangerous to rely on broad generalisations about the beneficial effects on conservation of the above mentioned policies, especially if the meaning of 'greater conservation' remains undefined, as is common.

Modern economic systems involve a serious employment-conservation conflict. They depend for the maintenance and expansion of employment on the growth of economic production. The 'need' for economic growth for employment-creation is especially apparent where population is increasing, labour-saving technological progress is occurring, when real wages (income) are inflexible downwards or creep upwards, and when reduction of hours of work or sharing of jobs by the employed with the unemployed is not an option. The global economic system continues to be locked into economic growth as a creator of employment. Reduced consumption in this system can be expected to result in growing unemployment and lack of income for the unemployed. Thus it is difficult to implement neo-Malthusian recommendations of reducing consumption levels in developed countries and achieving steady-:-state economies. Even less radical conservation policies are often thwarted by this issue which is still largely unresolved politically.

The global economic system is subject to fluctuation and instability. In an economic recession or with a sudden deterioration in the economic situation of a country (for example, due to balance of payment problems), there is a temptation to draw on natural resources, e.g. log forests more intensely and to engage in unsustainable harvesting of living natural resources, to tide the country over its difficulties. This can be a source of considerable loss of genetic diversity and of natural areas. Furthermore, exports of living natural resources can be used to finance economic growth. This can obviously be a threat to genetic diversity and is of dubious value if the economic growth proves ·to be unsustainable. .

International capital and technology flows, multinational enterprises, devaluation of national currencies, foreign loans and aid can all havee an impact on the conservation of natural areas and the maintenance of biodiversity; As discussed, they can assist or hinder conservation

depending on the circumstances.

Debt-for-nature swaps have recently been much publicised as a means of easing the foreign debt burden of less developed countries and ensuring greater conservation of nature. But as discussed, debt-for-nature swaps do have some shortcomings. These swaps and environmentally dependent aid policies raise the question of who gains from conservation in less developed countries. How are benefits distributed between aid donors and recipients, that is between the developed and the less developed world? Some recipients of environmentally sensitive foreign aid claim that they are being disadvantaged. This possibility and others ·are examined using a matrix of alternative international distributions of gains and losses from nature conservation.

In conclusion, the spread and the development of the global economic system has increased and is increasing the need for more officially protected areas. The system is a threat to nature conservation· and biodiversity. Policies to encourage the .spread of- this system (such as freer markets, structural economic adjustments, replacement of subsistence communities by cash and market oriented ones) are likely to accelerate the disappearance of species unless they are combined with policies targeted specifically at ensuring greater conservation of nature such as increasing the protection of natural areas and the quantity of natural areas officially protected. In this context also greater attention should be given to economic mechanisms designed to finance and promote nature conservation.

Conservation, Protected Areas and the Global Economic System: How Debt, Trade, Exchange Rates, Inflation and Macroeconomic Policy Affect Biological Diversity

1. Introduction – The Basic Global Economic System

Nowadays environments in most parts of the Earth and the lives of virtually everyone are affected by the global economic system. These effects ·arise from international trade in goods and services, from international capital flows and factor movements, . from technology transfer and from expanded international communication as well as direct environmental spillovers from economic activities. Scientific and technical developments in transport and communication have widened the scope for international exchange of commodities and for the operation of market systems.

The global economic system is characterised by

(1) international specialisation in production by countries and regions,

(2) greater specialisation by individuals and economic agents in· productive and economic activities than formerly,

(3) heavy dependence on capital-intensive technologies which rely for their operation on the use of non-renewable resources such as fossil fuels and on mechanical-chemical technologies and increasingly electronic technologies, even in agriculture, and

(4) enormous and increasing levels of economic production which tax the environment both in terms of the provision of raw materials for this production and in terms of its ability to assimilate wastes and pollutants generated by the production.

To function and maintain its viability the global economic system requires exchange of commodities ·on a gigantic scale. This exchange (which makes specialisation in production and economic activity possible) is facilitated (1) by the use of monetary systems (in which cash actually now plays a small part) and (2) by the extension of market systems. The use of market and monetary systems can (and in fact has) altered relationships between humanity, nature and the environment in ways which will be discussed below. Efforts are continually being made to extend and perfect these...systems further for example, by urging countries to

remove or reduce restrictions on international trade (e.g. through GATT), by encouraging subsistence and semi-subsistence communities to become more cash, monetary and exchange-oriented, and by exhorting centrally planned socialist countries to extend the operation of markets. It is usually argued that such developments will reduce economic scarcity and increase economic welfare. While these developments can have economic and social benefits; they can also have environmental and social· costs and there is a risk that any economic benefits or scarcity-reduction may be impermanent or unsustainable. They do not guarantee economic Utopia. They can result in one set of problems being replaced by another.

At the same time as market and monetary systems have been extended globally' other institutional developments and changes have occurred. These include the rise of centralised states and centralised monetary and banking systems, the emergence of· large companies · and business organisations including multinational enterprises and the development of relatively large public sectors and international bureaucracies including bodies such as the United Nations, World Bank and IMF. As a result, the control of local communities over their own .affairs has been reduced. The control of individuals over their economic circumstances has increased in some respects but may have been reduced in other respects because of their growing dependence on others, but dependence on others in the abstract or impersonally. Furthermore, in those areas where 'economic development' has proceeded furthest, most individuals lack direct access to the means of production and basically most sell their labour to survive. For example, as 'economic development' proceeds landlessness becomes more common thus depriving people of direct access to an important means of subsistence. All of these changes are occurring against a background of considerable wealth and income inequality between developed and less developed nations and within many nations (Cf. Schor, 1991).

Given current trends, the global •economic system can be expected to become more pervasive, drawing individuals and countries more thoroughly into it including those at present only tangentially dependent on it. This is likely to mean greater emphasis on economic growth, markets, economic exchange and monetary systems, and this could pose increased environmental dangers. What should be the political reaction of conservationists to these trends?

One possibility is to oppose these economic trends and say support the setting up of small

self-sufficient or almost self-sufficient communities (Schumacher, 1973). But such a system would not be without some economic cost because it would result in loss of scale economies and loss of some economic benefits from large-sized markets such as productivity benefits of specialisation. But it is an option. Another option would be to support centralised socialism in order to foster planned control. However, not only would this run against the tide of prevailing political sentiment but is likely to have economic and other costs. Furthermore, most centralised socialist systems have had a poor record in the past as far as environmental conservation is concerned. . Still another possibility is to · accept the basic trend in the global economic system as described above but to try to modify or transform it so as to harness its characteristics wherever possible to support conservation. This may for example involve in some cases the establishment of private property-rights in natural resources, greater marketing of rights to use environmental resources and application of fiscal policies such as taxes or subsidies in order to promote conservation. This approach of 'working with the trend' and supporting the use of economic instruments as a means to further conservation has been adopted to a large extent in the update of the World Conservation Strategy (IUCN-UNEP-WWF, 1990).

2. International Economic Interdependence and Conservation

Because of growing international economic interdependence[1], individuals have been converted from being ecosystem people to being biosphere people, that is from being dependent upon local ecosystems to drawing upon the resources of the whole biosphere (Raymond Dasmann quoted in Klee, 1980). In Dasmann's view, this has resulted in local communities showing less concern for sustaining local ecosystems because local people are no longer entirely dependent upon them. Furthermore, extension of the market system results in impersonal and often anonymous links. For instance, consumers know nothing or little about the geographical origins of ingredients used in products purchased by them, nor about the environmental ·consequences of producing these. In addition, company structures and competition between producers and economic agents results in the neglect of environmental spillovers by producers {Cf. Tisdell, 1990, Ch.2). The whole socio-economic system tends to become de-personalised with possible adverse consequences for nature and in some cases for the mental health · of individuals. For ·example, anxieties may develop because of worries about economic security or competition and because of a lack of sense of belonging due to

loss of community cohesion and impermanence of social and economic relationships (Cf. Toffler, 1970). On the other hand, the modern economic system generally results in less social pressure on individuals and gives them greater mobility so in these respects it provides greater personal freedom, than might have been typically the case amongst ecosphere people.

The main advantage of a global market economy is claimed by most economists to be a reduction in economic scarcity. This is because international trade allows specialisation in production according to comparative advantage, permits economies of scale in production to be reaped and allows (even in the absence of production advantages) welfare-enhancing exchanges given differences in resource endowments or differences in the preference of individuals for commodities. Theoretically the system permits greater economic production or human satisfaction to be achieved using the same amount of resources as would be utilised in its absence.

Alternatively with such an economy operating it is possible to produce the level of production of goods and services using fewer resources than in its absence. Potentially therefore such a system provides greater scope for conservation or reduced resource-use than in its absence. Although theoretically this is true under the conditions specified in the relevant neo-classical economic theory, this potential is unlikely to be realised in practice. In reality conservation in countries brought most recently within the international system is likely to suffer.

Western economists claim that human wants for economic goods are infinite. If that is so the potential of the system for greater conservation is likely to be forgone for greater production and consumption. Furthermore, contact with ‘more developed’ countries is likely to lead to greater emphasis on the acquisition of material possessions and expand the range of perceived needs (Yellen, 1990). Natural resource stocks such as forests and minerals can now be drawn on to provide income and funds for capital investment via international sales and may provide a springboard to economic growth, as is reputed to have occurred in the Swedish case. Resources may now be utilised that were not previously utilised or utilised more intensively. Capital and new technology may flow in from abroad to speed up this process if natural resource exploitation and the economic growth ‘imperative’ of centre-countries becomes globally pervasive. This seems to be the real situation.

Another possible adverse impact ·an conservation of natural living resources of drawing less

developed economies into the international economic system is that it ·may reduce limits to human population growth in the countries concerned. The potential per capita income-.enhancing benefits of international trade and exchange may be frittered away because of Malthusian-like effects on the level of human population. In consequence, a country experiencing this ends up with a larger human· population at subsistence level and less conservation of natural resources (Tisdell and Fairbairn, 1984). Bangladesh may be a case in point. There is also considerable argument amongst economists as to whether economic growth such as may come about as a result of international economic contact increases income inequality or even the incidence of poverty.

This is not to suggest that a return to economic autarky for nations and groups is desirable. In any case, there would be little social support for such a goal. On the other hand we should not gloss over the difficulties posed for conservation by the international economic system with its continuing emphasis on economic growth.

On the positive side, a fully developed market system provides new policy opportunities for environmental control. It enables use to be made of market mechanisms and fiscal policies (such as appropriate taxation policies) to achieve conservation objectives. For instance, it provides some (but not unlimited) scope for market-making in relation to environmental goods (e.g. the creation of markets in rights for environmental-use). But even in those advanced market economies where law and order is the norm, there are limits to these possibilities. In those less developed countries which are socially and politically unstable and not yet transformed into a complete· market economy, there may be much less scope for such measures. Indeed, in some circumstances the conservation of an area may sometimes be best secured by minimising contact of the area with the international economy e.g. by avoiding the construction of access roads to an· area until such time as the socio-economic situation enables resource-use· in the area to be controlled adequately by the government. Parts of Madagascar, for example, contain unique wildlife but at present difficulties of access to these areas means that they are not generally visited by foreign tourists. Better access, although it would encourage tourism, could lead to other economic developments in the area which might endanger conservation there. At least, the government's continuing ability to control the development pattern started by it needs to be considered before an economic development project is launched.

3. Trade Policies, Balance of Payments Difficulties and Exchange Rates

International trade usually extends the size of markets for commodities and, as mentioned earlier, results in socio-economic benefits as well as disadvantages. Most economists are of the view that the net welfare benefits from international trade are positive and they usually support policies to reduce barriers to trade, such as initiatives taken through GAIT or the type of 'structural adjustment policies' being pursued by the IMF and ·the World Bank. They are also sympathetic to the·slogan which was common at least in the 1970s of 'trade not aid', that is of allowing the exports of developing countries access to the markets of developed countries on favourable terms or at least allowing such goods to be imported free of trade discrimination.

Nevertheless we should remind ourselves that the gains from international trade can be uneven. Some groups can lose from it. One can imagine conditions also in which international trade may not be advantageous on balance to a country, even though these conditions may be rare. Such conditions have been outlined by those proposing de-development theses based· on the centre-periphery paradigm (e.g. Frank, 1971; Myrdal, 1956).

Even in those cases in which · international trade is judged to be advantageous economically on balance, it does not necessarily result in greater conservation of natural resources, even though theoretically it could provide scope for greater conservation. As mentioned earlier, international trade may stimulate greater consumption by residents of a trading nation. Secondly, it may provide markets or larger markets for natural resources which would be· little used in the absence of access to the international market. Thus international trade may provide an enlarged market for timber resources or for wildlife products. With international trade, countries with a 'comparative advantage' in supply of these commodities will exploit them more heavily. On the other hand, countries with a comparative disadvantage in supply of such natural products may indeed reduce their utilisation of these. For example, access to the natural resources of less developed countries to some extent reduced pressure on the natural resources of Europe but increased that in LDCs. Overall pressure on natural living resources appears to have increased as a result of the extension of the . global economic system.

Again, restrictions on trade have possibly been unfavourable o conservation in some areas

but may have assisted it elsewhere. The Common Agricultural Policy of Europe (CAP) for example has helped to maintain agricultural land use in Europe. In its absence more land is likely to have reverted to woodland or forest. On the other hand, restrictions on agricultural imports from the rest of the world may have held· back the expansion of agriculture elsewhere.

Lutz (1990) however suggests that the environmental effects of an agricultural trade liberalisation in industrial countries are expected· to be positive even though some adverse environmental effects from increased price variability or uncertainty might partially offset the positive conservation effects of lower agricultural production intensity and output, assuming normal supply curves. He suggests on the other hand that an agricultural trade liberalisation in industrial countries will result in higher prices for agricultural produce in LDCs and consequently greater intensification and extension of agricultural production with adverse environmental impacts in LDCs. His view is that taking the world as a whole, the environmental effects of international agricultural trade liberalisation would be uncertain. Lutz indicates that no firm conclusion can be drawn without empirical work. I would also add that one needs to decide **conceptually** on what is and what is not an environmental improvement before any firm conclusion can be drawn.

That free international trade does not necessarily result in optimal conservation outcomes is recognised by CITES (Convention on International Trade in Endangered ·Species) which restricts international trade in products obtained from listed endangered species. By reducing the market for such products, CITES aims to make poaching less attractive and thereby reduce this practice. But, of course, CITES does not address problems of preserving habitats (the· disappearance of which is a principal cause of extinction of species) nor the difficulty of providing economic rewards for those who conserve species.

Georgescu-Roegen (1976) has recommended that consumption of commodities should be limited to those which can be sustained by the use of renewable resources alone. But this seems to be too restrictive a policy. It may result in the disappearance of a considerable amount of natural living resources as their use is substituted for that of non-renewable resources. Furthermore, there seems to be no good reason .why there should be total abstinence from non-renewable resource use. Up to a point use of non-renewable resources can reduce pressure on living natural resources. The use of such resources could, for instance, be environmentally less destructive than widespread agriculture. Again what is the point in

never using them, that is in leaving them until the end of the world? The appropriate policy seems to be to use them wisely having regard to the needs of future generations. There also do not seem to be sufficient grounds to ban all exports of non-renewable resources or for that matter all commodities which have some adverse environmental effect. In the longer term such exports may produce a base for development of less environmentally destructive economic activities e.g through the accumulation of man-made capital, growth of service industries, growth in human capital such as knowledge. This may for example have been the pattern of economic development of Sweden.

In practice, most LDCs experience balance of payment difficulties as a result of international trade. There are many reasons for this. There has been a long-term tendency for the terms of trade· to move against exporters of primary products. Most LDCs tend to export primary products. Many LDCs being ·short of capital also have a tendency to live beyond their means, financing· excess expenditure through foreign borrowing. External deficits are often covered by foreign loans because the international monetary reserves of most developing countries are meagre. In cases where the countries concerned also have substantial defence or war expenditure additional pressure is placed on the balance of payments. Governments of ·LDCs often borrow from abroad to finance public consumption and capital works because their tax bases are weak and domestic financial markets are often limited. Furthermore, many residents of LDCs try to invest in developed countries rather than at home. All these factors have in recent years resulted in a mounting international debt for .many LDCs2 effects of which will be discussed later.

As a result of balance of payments difficulties LDCs are likely to be forced to devalue their currency. The consequences of devaluation for conservation are unclear but provided a devaluation is sustained and not fully offset by inflation it is likely to encourage •the growth of export industries, reduce imports, and stimulate aggregate demand at home. It may result in less conservation at home but as discussed below its conservational impact is complex. Lutz and Young (1991) point out that "Tracing the effects of changes in macroeconomic policies on the national resource base is difficult as interactions between the economic system and the environment are complex and our understanding of them limited. Also a- policy change such as devaluation can have both positive and negative effects".

In LDCs, international trade may encourage urbanisation and it may be encouraged by urban elites because it often provides a base for taxation to support the public sector on which many

urban groups depend for employment or economic support. It may also help to support a dual economy - a relatively advanced urban sector and a backward rural sector. In the urban sector of LDCs wages may be relatively rigid, and effective demand for labour as well as government revenue for labour en1ployn1ent can be heavily dependent on the extent to which the balance of payments is in deficit or surplus. Sudden reduction in exports which may have unemployment and reduced government revenue flow-ons may be countered by governments of LDCs by drawing detrimentally on conserved natural resources. [For example after the coup in Fiji a· sharp decline in international receipts resulted in exports of giant clam meat being allowed at least for a time even though stocks of giant clams were dangerously low in Fiji.]" A discussion of recent International Monetary Fund (IMF) and World Bank policies on structural adjustment may help to place the above issues in wider perspective.

4. Structural Adjust-met and the International Economic System – IMF and World Bank Policies.

LDCs especially in Latin America and sub-Saharan Africa experienced economic difficulties during the 1980s involving balance of payments deficits, high interest rates, reduced availability of international finance and falling terms of trade. In many cases, these difficulties were compounded by inadequate domestic economic policies and have left an unwelcome legacy for the 1990s. · Major international donor agencies, principally the IMF and World Bank, have made it a condition of financial assistance to such countries that they adopt a package of policies aimed at macroeconomic stabilisation and structural adjustment of their economies. Sometimes by way of shorthand these are merely referred to as Structural Adjustment Policies (SAPs). Our interest in these policies is that they are influential in the context of the global economic system and secondly that there have been claims that on balance they are beneficial for conservation. Before discussing the later contention, let me briefly outline the nature of these Structural Adjustment Policies.

SAPs basically involve a two-prong approach: (1) reductions in domestic aggregate demand - that is expenditure reductions especially by government with the aim of creating a smaller public sector and (2) measures to increase supplies, particularly by making greater use of free market forces. The second prong involves (a) expenditure switching within the government

budget and within the economy of resources to more productive sectors, and between the home market and export markets via exchange rate devaluation, (b) liberalisation of controls on foreign trade and (c) liberalisation of the domestic price system especially the prices received by farmers for their output and those paid by farmers for inputs such as fertilisers and pesticides.

Such measures are intended to ensure that the demands of LDCs conform more closely with their means of meeting them and to increase their supply of commodities by .improving the allocative efficiency of their resource use. The primary aim of such policies is not intended to be an environmental one. But claims have been made that a coincidental spin-off from such policies is greater conservation.

Sebastian and Alicbusan (1989) after reviewing the World Bank's adjustment lending operations conclude that "far from being amajor source of environmental degradation in developing countries, adjustment policies appear, in balance, to have a bias·in favour of the environment With adequate complementary measures to make sure they are implemented correctly, the policies can be manipulated to achieve environmental as well as economic objectives" (Sebastian and Alicbusan, 1989, p. 28).

Hansen suggests that his studies also support this broad conclusion in relation to the Asian Development Bank (Hansen, 1990b, p.8) and with some qualifications more generally (Hansen, 1990a,c).

On the other hand, Mearns (1991, p. 19) after reviewing structural adjustment in Malawi concludes that such policies could well be environmentally detrimental. There are in his view no grounds for presuming them to be environmentally favourable. Environmental effects can go either way. It seems that the view of Mearns is in fact correct.

But before discussing this matter, a particular conceptual problem should be noted. Discussants do not indicate their **measure** of environmental quality3 nor of the extent of conservation achieved. While one resource might show greater conservation with a change in economic policy another may show reduced conservation. For example, Sebastian and

[3] This suggests the need to develop or apply a suitable environmental quality; conservation or biodiversity index. The possibility of adopting Daly and Cobb's sustainability index to measure environmental change might also be considered (Daly and Cobb, 1989, pp. 401-55) as well as the scope for using natural resource accounting methods. But it may be that a new index is needed which gives greater importance to the maintenance of biodiversity as a goal.

Alicbusan (1989) suggest that devaluation will result in. a higher price being paid to farmers for export crops. This they suggest will encourage fanners to look upon their land as a more valuable asset and pay more attention to soil conservation. On the other hand, it may result in the extension of agriculture and .the increased destruction of the habitat of native animals as it is transformed to agricultural use. . Sebastian and Alicbusan ignore the latter effect and effects of SAPs on natural areas. Also as pointed out by Mearns {1991) effects on the environment may depend on the type of agriculture .which is encouraged. For example, if the growing of tree crops rather than field crops is encouraged this may be · environmentally more advantageous than if the opposite pattern is encouraged.

On the other hand, it is true that the elimination of subsidies on pesticides and artificial fertiliser use could have favourable environmental effects. It may also be as· Sebastian and Alicbusan suggest that a reduction in the size of the government budget and expenditure could have favourable conservation effects. For example they suggest that such a reduction might result in less road building and thereby retard the 'development' of remote land areas with natural vegetation cover. On the other hand, a reduction in government expenditure may result in a pruning of ·governmental expenditures to protect the environment e.g. soil conservation services and a reduction in environmental education. Also expenditure on national parks and wildlife services- may be slashed and few if any areas may be acquired for state protection. Indeed, national parks and wildlife services seem as a rule to suffer when government budgets are cut.

Naturally LDCs must live within their means internationally in the long term if they are to remain economically viable. Therefore, they need to adopt appropriate adjustment policies. But the adjustment policies suggested by the IMF and the World Bank do not specifically address conservation goals. Their impact on conservation is likely to be mixed. In some circumstances, they could hasten the disappearance of natural areas and endangered species. We cannot rely on generalised policies which lack a definite conservation aim. Policies must be targeted specifically to the conservational aims which are sought, and in certain cases this will require aid ·or income transfers to less developed countries from developed nations for this· specific purpose. International lending agencies such as the World Bank have started to recognise this. Some funds (e.g. Global Environmental Facility) are now becoming available for projects on concessionary terms which have positive conservational benefits and which may provide favourable global spillovers (Anon, 1991).

Bauer (1989) has suggested that adjustment policies promoted by bodies such as IMF and World Bank in providing more· aid to debtor countries agreeing not to repudiate their debts or do so immediately are rarely monitored or enforced.

He says:

"Most [government] debtors, especially major debtors, rarely change their policies significantly under these arrangements. Policies such as the maintenance of a large state sector, extensive control over economic activity, state export monopolies and the like accord with their interests and may even be necessary for their political survival. They will abandon them only if continued pursuit would result in economic breakdown threatening their own position. If they are rescued they will persist in their policies though they may pay lip service to the market and effect some changes in their exchange rate policies" (Bauer, 1989, pp. 11,12). Clearly if this is the case, the structural adjustment policies being praised by Sebastian, Alicbusan (1989) and others are in reality not being put into effect.

In a more wide ranging criticism Harris (1991) says that "most of the global institutions presently in existence date from the period immediately following WWII - the IMF, the-World Bank, the General Agreement on Tariffs and Trade (GAIT), the United Nations and its various agencies are now obsolete since they were developed to deal with problems of cyclical instability and mass unemployment and have been unable to adapt sufficiently to deal with the problems of population, development and environment that dominate the current global picture". He suggests a set of new international institutions involving a combination of Keynesian and ecological perspectives even though the connections which he makes between Malthus, Keynes, ecology and the environment appear rather tenuous. ·Nevertheless, such debate is healthy because it is possible that existing institutions are operating on outn1oded perspectives. As mentioned later, outmoded perceptions of macroeconomic policy-makers having either a Keynesian bent, monetarist or neo-classical bent are still strong because economic growth is seen as the main means to meet employment and welfare-enhancing objectives.

5. International Capital Flows, Multinational Enterprises, Loans and Aid

International capital flows, apart from enabling capital equipment to be purchased from

abroad, help to transfer technology and provide a means for economic growth. But such transfers do not necessarily have friendly environmental effects. Such flows may result for example from direct private investment (e.g. by multinational companies) through loans (private and public) through government aid, private aid and transfers (remittances).

Such international flows may enable incomes in recipient countries to rise and may promote urbanisation. In the long term this may be favourable to conservation, even though it is not likely to be so in the shorter term. In the longer term for example, population growth may be reduced and a population with a higher per capita income may be more favourable to conservation. The Brundtland Report (World Commission on Environment and Development, 1987) was of the view that without a rise in per capita incomes in LDCs there is little chance of conservation occurring in LDCs on a significant scale.

Maybe a typical relationship exists between the pursuit of conservation objectives and the stage of economic 'development'. At low levels of per capita income and in the early stages of economic development environmental conservation is not a high priority. Only after substantial economic development has been achieved does environmental conservation become a major goal. This seems to be because the demand for environmental goods is income elastic and also education elastic. This suggests that in the absence of substantial and effective· foreign aid, pressure on the environments of LDCs is likely to intensify as they attempt to achieve economic growth. Many are still well below the stage of development where environmental conservation is a high priority. The only type of conservation which they are likely to favour at present is that adding demonstrably to production or income or in certain cases defensive conservation, that is conservation demonstrably necessary to prevent · a substantial fall in their production or level of income.

On the whole international capital flows seem to assist the economic growth of LDCs. However, some economists have argued that they may be a source of 'de-development'. In the initial stages of economic development, these" flows ·are likely to add to pressures on natural resources. But apart from this, they may .give rise to particular strains or environmental distortions.

Multinational enterprises, especially when they are part of a large public company, may not be sensitive to local environmental conditions and issues. Directors and shareholders of the overseas parent company of a multinational being far away from the scene of operations of

its subsidiary in a LDC for example may have little knowledge of the environmental effects of its operation and may escape local criticism and social pressure which might be experienced by a local entrepreneur. Competition both in the capital market and in commodities may also help to make a company insensitive to its environmental effects. The main aim of commercial enterprises is to maximise their profit. As a rule they will only pay attention to those environmental effects which directly affect the profit of the firm (Tisdell, 1990, Ch.2). Those environmental effects that are external to the firm will not be taken into account unless the government adopts policies for instance taxing the company on its unfavourable environmental spillovers. But since many · LDCs are eager to attract foreign investment and investors have alternative investment possibilities, most governments in LDCs are reluctant to impose environmental controls.

Loans can be an alternative or a supplement to direct foreign investment in a country. Loans may be made by private lenders in which case they are purely commercial loans or they may be made by foreign governments or by international bodies such as the IMF or the World Bank. In the latter case, the terms of the loans may not be entirely commercial. Nevertheless, borrowers should be reasonably sure that the benefits expected from the loan exceed its costs and that they have the capacity to repay the loan without undue economic difficulty on the basis of the agreed terms.

The capacity of a government to repay a foreign loan for a particular project does not depend solely on returns and cash flows from that particular project, but also on the government's overall foreign commitments. For example, the financial capacity of governments of some LDCs to repay other foreign loans was reduced because of their large foreign debt incurred for purchases of armaments (Bauer, 1989). Armament purchases resulted in a drain on foreign reserves and, although there is some debate about this issue, were largely unproductive, did little to relieve poverty and possibly had adverse conservation consequences both directly and indirectly (consider the environmental impact of the Gulf War). The World Bank has been reported to be considering refusing to make loans to governments of LDCs with large defence expenditures in relation to their GDP.

Soft loans may be made by lenders when they expect an indirect spillover benefit from the loan. The World Bank, for example, is to consider some loans to countries at concessionary rates of interest for projects which have global environmental benefits. These may, for example, be projects which assist in maintaining biodiversity of worldwide value or projects

which help to reduce global pollution. Nevertheless, the World Bank will still require the benefits received by the borrowing country from the project and the loan to equal or exceed the concessionary rate of interest charged.

In foreign aid, environmental and sustainability factors are being increasingly taken into account by donors, for example in bilateral aid. For instance, the Australian International Development Assistance Bureau (AIDAB) has indicated that in giving aid it will in the future place greater "emphasis on the reduction of population growth, alleviation of poverty, the use of renewable resources, the sustainable management of natural resources, energy efficiency and pollution controlw{AIDAB, 1990, p.8).

While this new emphasis seems desirable, it is not without some difficulties. For example:

(1) Some LDCs complain that the effective amount of aid (or loans) made available to them is reduced because of environmental conditions and costs imposed upon them. Some complain that their available funds go less far, and that their benefits as a proportion of global benefits are reduced. This is a complex matter and will be discussed later when global spillovers are considered.

(2) There can be problems in measuring and valuing environmental spillovers. To some extent, valuation methods are cultural specific. Western value systems are not universally accepted. There may also be a clash between what is locally predicted to be the environmental consequences of a project and foreign predictions of these consequences. The 'truth' may reside with neither party and a priori it may be impossible to decide which party is likely to be closest to the truth. Even though some conservationists have argued that empowerment of local groups will result in improved environmental decisions, this result does not always follow (Tisdell, 1991a). Neither local experience nor foreign expertise ensures the correct environmental answer even if such an answer exists. Therefore, despite its psychological inconvenience, some agnosticism about all sources of knowledge seems appropriate.

6. National Debt and Debt for Nature Swaps

While in recent years many LDCs have had a larger foreign debt than they have been able

(or willing) to service, foreign debt can provide a net economic benefit to a borrowing country. This will be so if the economic yields from the foreign loan exceed its costs. The loan may, for example, enable capital equipment and technology unavailable at home to be imported from abroad. ·As a result it can help to speed up economic growth. After 1979, for example, China began to rely increasingly on foreign loans to provide foreign imports to help its modernisation.

In the short run such economic growth may be unfavourable to the natural environment both because it accelerates natural resource utilisation and increases pollution, for instance, as a result of industrialisation and urbanisation. In the longer run; if such growth raises per capita incomes and reduces population growth it could be favourable to the environment and conservation. With rising incomes, the demand for improved environmental quality\rises and the real cost of supplying it is likely to decline. Nevertheless, in the short run the environmental situation could well deteriorate. The question remain unanswered of · whether environmentally the globe can sustain the existing world population at the standard of living of the more developed countries. For example, the industrialisation of China and India can be expected to add substantially to carbon dioxide emissions and may accelerate greenhouse effects (Myers, *et al,* 1990).

The optimistic view is that LDCs can follow a similar path of development to the present developed countries, and that at least in the longer term this will be beneficial to the environment. The pessimistic view is that this policy is environmentally impossible or unsustainable. Therefore, from a global perspective LDCs should be less ambitious in their economic growth objectives and developed countries should to some extent reduce their pressures on natural resources to provide greater environmental scope for economic growth by LDCs. In addition, it is argued that environmentally defensive policies should be supported e.g. family planning initiatives, re-afforestation, research into increased energy-use efficiency and alternatives to carbon fuels. According to this view the previous economic growth path pursued by developed countries is not available to the bulk of remaining LDCs for environmental reasons. Late starters are subject to negative externalities from early starters and that raises the question of whether late starters should be compensated by the early starters.

The position of the Brundtland Report (World Commission on Environment and ·Development, 1987) on the issue of economic growth in LDCs being compatible with

environmental sustainability seems- equivocal, although it claims that economic growth in LDCs is a precondition for successfully dealing with environmental concerns. Basically its remedy is more economic growth but with an increase globally in environmentally defensive expenditure. As interpreted by the World Institute for Development Economics Research of the United Nations University, Helsinki, this seems to require greater economic growth both in developed and less developed countries with defensive environmental expenditure being largely financed by the 'peace dividend', the reduction in global defence expenditure made possible by new international relationships between the Soviet Union, Eastern Euqope and the rest of the world (Jayawardena, 1990).

The Brundtland position seems to be consistent with the broad view of the People's Republic of China which may be typical of that for many LDCs. For example, leading members of the Institute of Economics, Chinese Academy of Social Sciences, Liu Guogup.ng, Liang Wensen and Others (1987, p.420) say

"We advocate a line of action which requires that economic growth and environmental protection go hand in hand. There are two aspects to the relationship between economic growth and environmental protection: While they are mutually contradictory, they are also mutually complementary. Economic growth does bring along environmental problems, but it can also strengthen man's hand in tackling these very problems whose successful solution will, in turn, create more favourable conditions for economic growth. This fact has been fully borne out by the experiences a number of developed countries have gained in improving the environment."

China's environmental protection policies are still evolving and the above-mentioned authors outline several measures which China could adopt to improve environmental protection: In relation to wild animals and plants they state

"China abounds in wild animals and plants. It is estimated that the country has over 400 species of animals, 1,100 species of birds and nearly 30,000 species of higher plants. Many among them are of rare varieties. It is necessary to enact laws and regulations to give rare animals really effective protection. We anticipate that in the near future, the number of nature preserves will increase from the present 85 to over 300 so that rare animals and plants, already endangered or liable to harm by man, can be taken better care of." (Liu Guoguang et al., 1987, p.433)

In the future, greater attention is likely to be given to the economic benefits of better management of the environment in China. For example, with the extension of the market system in China polluters may more frequently be required to pay· for the environmental cost of their pollution (Hong et al., 1991). In addition, with China's opening up to· the outside world, scope exists for China to attract more ecotourists e.g. interested in its rare animals and plants, and earn extra income from its conservation of natural areas. There is a need however to follow up such possibilities **effectively**.

To return however specifically to the foreign debt issue, the foreign debt may involve (1) private lending to private borrowers in the borrowing country (2) private lending to the government in the borrowing country and (3) non-private lending to the government in the borrowing country. While in the first case only private risks are involved, failure to repay loans can influence foreign perceptions about the general credit-worthiness of a· country. Increased foreign debt held by governments can have wider community effects, even though all such loans could speed up economic growth and/or in some circumstances add· to inflationary pressures. If, for example, a government has difficulty in repaying a loan· because of shortage of foreign exchange, it may ration other users of the nation's foreign exchange or allow natural assets to be exploited at a faster rate than desirable in order to sell such products abroad and obtain much needed foreign exchange. For example, as mentioned earlier, after the coup d'etat in Fiji in the 1980s foreign exchange became short and exports of clam meat from the already depleted natural stocks were allowed for a time to generate foreign exchange.

Especially when foreign loans are obtained for military purposes, those in power may be prepared to run down the capital and natural assets of a country for their own short-term goals, particularly if actual war is occurring or imminent or if the army is important domestically in maintaining the ruling group in power. Thus the effect of a foreign debt on resource conservation in a country depends upon several factors which must be considered simultaneously.

P.T. Bauer (1989) has argued that the foreign debt crisis is a misnomer and that in effect it is politically contrived and that servicing it would not have affected living standards substantially. He rejects views that debt service is a major cause of Third World misery as fantasies. He suggests that 'the crisis' has been used selectively to enhance the power of Western governments, the IMF and the World Bank. His trenchant comments should be

noted but have yet to be empirically tested.

The fact is that several governments in LDCs, especially in Africa and South America have been unable (or unwilling) to meet foreign debt commitments in recent years. This has provided opportunities for debt-for-nature swaps. For. example, an article in The Wall Street Journal (January 20, 1988) entitled "What Do Monkeys in Bolivia have to Do with the Debt Crisis?" provides some details about a debt-for-nature swap .involving the Bolivian Government, a Swiss bank and Conservation International, a Washington-based non-profit group. This conservation group purchased $650,000 of Bolivia's foreign debt·from a Swiss bank for $100,000. It then swapped the $650,000 debt with the Bolivian government for o an extension of 4 million acres to the El Porvenir conservation reserve and the Bolivian, government agreed to provide $250,000 in local currency for administration of the reserve and to retain Conservation International as an adviser. Apart from Bolivia, Costa Rica,. Madagascar and Mexico have been involved in debt-for-nature swaps (Financial Times, 21 March, 1991, p. 6). But **so·far** on a global scale their impact on nature conservation appears to have been very small.

While debt-for-nature swaps do provide a means for greater conservation it should not be overlooked that they are likely to impose some costs on the borrowing country, especially if the· benefits perceived from the conservation go mainly to foreigners. Land used for conservation is likely to have some opportunity costs locally, although it is **possible** that both local and foreign interests could gain by such conservation projects. But we cannot assume that mutual benefit is always the case. Secondly, the areas or species targeted for conservation under debt-for nature swaps are unlikely to be determined systematically but are more likely to be determined piecemeal, as a result of social and political processes. Swaps will depend upon the existence, particular focus and relative drive of conservation groups.

7. Macroeconomic Policies – Inflation, Full Employment and Economic Growth

For around 50 years, macroeconomic issues have dominated economic policies. The main policy issues in economics have been perceived as ones of controlling inflation, of achieving full employment of labour (or of . at least avoiding unacceptably high levels of

unemployment), attaining a high rate of economic growth and maintaining a satisfactory balance of payments or external account situation.

Policies have been directed towards (1) increasing effective aggregate demand without fostering an unacceptably high rate of inflation and (2) to expanding aggregate supplies of goods and services so as to dampen inflation, achieve greater economic growth and increase international competitiveness. The main interest of macroeconomists in microeconomic reform has been as a vehicle to expand aggregate supplies and increase· international competitiveness thereby raising exports.

Many economists in government departments traditionally concerned with macroeconomic policy, such as Treasury in Australia, often appear unsympathetic to conservation and environmental goals or believe that they could be removed from their arena by sufficient 'market-making' for environmental goods and services. In fact this may be because conservation groups frequently ignore (1) the budgetary costs of their proposals and {2) ·the opportunity costs of implementing them. Traditionally, neither Keynesians nor monetarists (nor for that matter most neoclassical economists) saw environmental issues as being of major economic significance and they usually have little sympathy with the views of neo-Malthusians. This lack of sympathy seems to have two bases: (1) Doubt about the factual basis of the neo-Malthusian position and (2) support of diametrically opposite policies, that is of pro-growth versus zero or low economic growth policies. These economists may show even greater hostility to non-anthropocentric considerations in economic policy because economics as it has evolved is fundamentally anthropocentric in focus.

Harris' (1991) view, mentioned earlier, should also be noted here that international organisations such ·as the IMF and World Bank (International Bank for Reconstruction and Development) are basically oriented towards economic growth because of their historical macroeconomic background. Despite Harris' view, there is little doubt that the World Bank has been paying greater attention to environmental issues in the last few years, even though some observers might still suggest that this attention is peripheral. But I do not intend to make a judgment on this here.

The political reality seems to be that few individuals are prepared to follow the prescriptions suggested for example by Daly (1980). Few individuals are prepared to limit or reduce their level of consumption - most still want to increase it. In modern economies and in the modem

sectors of LDCs, wages tend to be inflexible downwards and to creep upwards over time. This creates difficulties for maintaining employment levels unless economic growth is always forthcoming. The **structure** of modem economies gives rise to this fundamental employment problem - a problem which requires continuing economic growth to avoid increasing unemployment.

Many LDCs are developing the same structure. In most LDCs a dual economy exists and thus this problem is already present in urban or modernised areas. Western economists are encouraging the further development of this system, encouraging for instance the remaining subsistence sectors and socialist countries to join the cash-market economy.

How to maintain full or near full employment and satisfy income aspirations without creating environmental problems and ecological disaster still remains the major policy issue to be solved. It may be that all these goals cannot be simultaneously satisfied. Still too many people want to have their income- employment aspirations met and hope to satisfy, as if by a miracle, all their conservation-environmental goals without any trade-off. We must give more attention to this fundamental issue. Should, for example, there be more job- sharing in developed countries to reduce unemployment and not raise production? Should, for example, service industries which make few demands on natural resources be encouraged? Should individuals give more attention to the 'profitable' use of their leisure-time and should educational systems compared to current practice provide more training for leisure relative to that for work?

8. Global Environmental Spillovers and the Economic System

It has been said that the world has become a global village from an environmental point of view. Economic activities in a single country often have direct environmental impacts or consequences for other countries. ·Consider for example acid rains, nuclear pollution, greenh9use gases, loss of biodiversity and loss of existence, option and bequest value as a result of the loss of natural environments and species of worldwide significance. Environmental spillovers may not only be of consequence for the country in which they arise but are often of much wider import (Tisdell, 1990, Ch.4; 1991b, Ch.4).

In relation to aid and soft loans, donors are giving much more attention to the environmental

consequences of projects which they support. While this broadly is desirable from an economic viewpoint, leaders in some LDCs have expressed dissatisfaction with aspects of this emphasis. They have suggested that the net benefits to an aid recipient may be reduced by such considerations given that a fixed aid allocation is available. It is suggested that an increased amount of aid is necessary to compensate for the 'extra costs' imposed on LDCs or aid recipients of having to take environmental factors into account e.g. land which now must be kept undeveloped, extra environmental protection controls on factories. But this assumes that the aid recipient loses when allowance is made for the environmental effects in allocating funds for economic projects. While this is possible, it is by no means the only possible outcome. A range of possible global welfare consequences as summarised in Table 1 exist for systems which take environmental factors into account in distributing aid funds. The welfare changes are evaluated in relation to aid policies which do not pay particular attention to environmental considerations. In Table 1 the second column lists the sign of the possible welfare change in the country given aid (LDC) and the third column that in the rest of the world as a result of environmentally sensitive aid. The fourth ·column indicates the change in global welfare when the Paretian criterion is used, namely welfare increases in this context provided one country at least is made better off without another being made worse off.

Table 1 Distribution of Possible Net Gains (Losses) from Environmentally Sensitive Aid·Policies and Global Welfare Consequences Using the Paretian Criterion

Possibility	Net Benefit to Aid Recipient (LDC)	Net Benefit to the Rest of the World	Global Welfare Change
1	+	+	+
2	+	0	+
3	+	-	?
4	-	+	?
5	-	0	-
6	-	-	-
7	0	+	+
8	0	0	0
9	0	-	-

*Using the Paretian Criterion

Leaders in some LDCs are concerned that possibility 4 will prevail. This involves a

redistribution of welfare in favour of the rest of the world (developed world) if environmentally sensitive aid programs are followed. In this case, the net welfare benefits received by LDCs from aid will decline unless greater aid is supplied. However, as can be seen, cases 1 - 3 are also possibilities. In these cases, environmentally sensitive aid policies increase the welfare of recipients of aid. We cannot a priori rule out any of the sets of possibilities in Table 1, even possibility 6. Possibility 6 may, for example, arise if the environmental consequences of projects are **inaccurately** or falsely predicted.

Of course Table 1 glosses over many problems of evaluation and it should be observed that the Paretian criterion is essentially anthropocentric as are most existing economic evaluation criteria. Nevertheless, it does highlight some of the international distribution issues raised by environmentally sensitive aid policies.

9. Conclusions

Relationships between the global economic system, conservation and the provision and safeguarding .of protected areas are complex. In its early stages, economic growth and the extension of the market system seem to be detrimental to the conservation of natural living resources, even though in the medium term such changes may result in an improvement of environmental quality judged from a human perspective. In the longer run such developments may be increasingly beneficial for environmental protection. Thus to recapitulate, the early stages of economic development may be unfavourable to the state of the environment whereas development in its later stages may be favourable to the environment. Unfortunately a number of environmental changes which occur during the earlier stages, such as extinction of particular species, are irreversible at the later stages.

But if it were true or is true that economic development eventually results in a more favourable attitude to the environment, it does not follow that economic growth for all nations is feasible. The global environment may not be able to support the level of economic production which would be required to raise the per capita income of populations in LDCs to the same level as that in developed countries. Indeed, environmental limits to economic growth may be reached well before this required level of global economic production is attained (Cf. Culbertson, 1971). We still have to come to terms with this possibility.

This is not to say that the early stages of economic growth and extension of the market system need to be as destructive of the environment as in the past. We are now more aware of the types of adverse environmental consequences that may occur and have a clearer picture of circumstances in which state intervention in the development process and extension of the market system is justified. Incidentally, in this regard we· should not discount the possibility that state intervention to achieve environmental goals is likely to be easier or more effective in a market system than in a relatively centralised socialist system.

This all suggests that we need economic policies specifically targeted to conservation of living natural resources. In particular we cannot rely solely on broadbrush macroeconomic or even microeconomic policies such as those recently supported by the IMF and the World Bank. Furthermore, ··we are still far from resolving the basic conflict between objectives of traditional macroeconomic policy and those objectives espoused by conservationists favouring steady-state· economies or reduced rates of economic growth .Greater employment and rising incomes still remain high on political agendas, and those in employment do not seem to be very ready to share their jobs and their incomes with the unemployed, or to accept lower. incomes for conservationist ends. This may be so for several reasons: (1) Individuals may not believe that rising incomes have environmental consequences. (2) They may take the view that only humanity should count and although other species may suffer, rising incomes may on balance .have positive consequences for humanity. (3) It may be universally accepted that rising incomes will have collective adverse consequences for humanity but individual selfishness may lead individuals to follow·the income-raising path. This is an example of a prisoner's dilemma problem - a case in which rational pursuit of individual self-interest conflicts with the collective self-interest, e.g. possibly felling of the Amazon's rainforests.

Finally, observe that there is considerable discussion in the literature about improvement and deterioration in the conservation of natural resources without very much attention Jo the concept itself. How do we decide for instance whether conservation has increased if conservation of some resources, such as soil, improves but that of others declines. For example, if increased agricultural prices lead to greater conservation of soils used for agriculture but result in extension of agriculture at the expense of survival of species or preservation of natural areas, does .this constitute greater conservation? So far biological diversity itself has not been a focus in the structural adjustment debate. This matter does not appear for example to have been effectively addressed in Sebastian and Alicbusan's (1989)

review of the World Bank's adjustment lending operations nor a similar review of the Asian Development Bank by Hansen (1990b). However, it is now being more widely recognised that economic and environmental interconnections are rather more complex than have been initially recognised.

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