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PROTECTING THE ENVIRONMENT IN TRANSITIONAL SITUATIONS

by

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PROTECTING THE ENVIRONMENT IN TRANSITIONAL SITUATIONS

ABSTRACT

Discusses the possible relevance of the Kuznets environmental curve to centrally planned economies and compares their situation with that for market economies. Claims that Kuznets environmental curves apply to ‘normal’ situations and so give little guide to environmental impacts of economies in transition. Difficulties encountered in protecting the environment in transitional situations are given special consideration. The environmental experiences of Eastern and Central Europe, Russia and China are discussed. Their different methods of social and economic transformation and varied economic fortunes have had divergent environmental consequences in these countries. When negative economic growth has occurred in transition over a long period, as in Russia, the natural environment has suffered. However, as explained, the situation is complex. In the conclusion, some attention is given to the environmental situation of African countries in transition. Their transitional processes, like that of many other countries, are driven by international financial pressure to adopt structural adjustment policies. It is noted that the consequences of transition depend very much on whether the ‘American’ *laissez-faire* ideal of a market economy is adopted or the ‘German’ social order market-model and on whether transition is gradualistic or suddenly forced without adequate internal institution-building.

PROTECTING THE ENVIRONMENT IN TRANSITIONAL SITUATIONS

1. Introduction

The occurrence of high levels of pollution and often serious environmental degradation in centrally planned economics is well documented (Cf. Pryde, 1972; Zylicz, 1994; Kallaste, 1994) even though its presence has sometimes been exaggerated in Western countries for political reasons (Cf. Vari and Tamas, 1993). Most of the previously centrally planned communist-dominated economies are in varied stages of transition to market economies and/or to more open economies politically. The nature and stages of their transition processes vary greatly and this variation has implications for their ability to protect their environments in transition.

While some economic theorists were highly optimistic about the ability of former centrally planned economies (CPEs) to transform themselves into market economies quickly, reality has proven to be somewhat different. In particular, advocates (mainly from Harvard University and within the IMF) of a 'big-bang' transformation for the Russian economy may have helped create an economic (and social) tragedy. Russia has not progressed but has gone backwards in terms of economic output (World Bank, 1998). This is mainly due to a failure of policy-advisers to understand that market systems only work or work well when they are complemented by supporting institutions and social values. These cannot as a rule be created instantaneously but must evolve. While the process might be accelerated, institution-building appears to be more of an organic than a technical process limited by cultural background and experiences and requiring care, compassion and empathy if it is to be a success. In Western countries some such institutions have taken centuries to evolve. In this respect, China's evolutionary approach

contrasts with the 'big-bang' attempts of Russia to bring about economic transformation. I shall return to the varied transitional processes later.

Before doing so, consider some simple economic theory of the relationship between the level of national production and levels of pollution and influences on pollution of the existence or absence of markets.

2. Kuznets Environmental Development Curves

It is widely believed that levels of pollution emissions relative to GDP at first rise with GDP eventually peak and then decline. Thus when pollution intensity (the index of pollution emissions divided by GDP) is graphed in relation to GDP the resultant curve is of an inverted U-shape often called a Kuznets environmental curve (Barbier, 1997).

This relationship provides a rather optimistic scenario for the control of pollution. It suggests that while economic growth at first increases pollution intensities, in the long-term, it reduces levels of pollution intensity. Thus it suggests that pollution and environmental degradation may be a result of insufficient economic growth rather than too much economic growth. Despite the need for qualifications of this thesis (C. Tisdell, 1993), it appears to have widespread support for example, by the World Bank (1992).

Given that this Kuznets relationship is valid, its consequences for CPEs engaging in transition will vary. To the extent that transition makes greater economic growth possible for former CPEs, their pollution intensities can rise or fall depending upon whether they are below or above

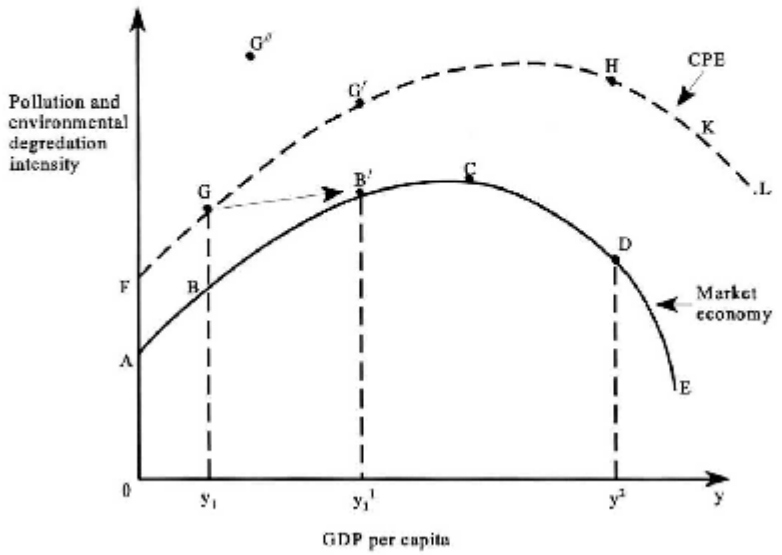
the peak of their Kuznets curve. If they are below this peak, pollution intensities can be expected to rise or rise initially as a consequence of their economic growth.

However, the above assumes that the same Kuznets curve applies to a CPE as to a transformed CPE. This is not very likely. Evidence indicates that pollution emissions for the same level of GDP are likely to be lower in market economies than in CPEs. Zylicz (1984, p.89) supports this by comparing the waste and pollution intensities of six Central and Eastern European countries with the European Community at the end of the 1980s. Andrews (1993) found high intensities of pollution in Czechoslovakia relative to comparable market economies. This was mainly because of inefficient use of fuel in Czechoslovakia, and its forced concentration on heavy industries and its use of very poor local fuels, such as lignite, high in sulphur content. Thus *after* successful transition the Kuznets environmental curves for former CPEs could move down. There would then be a bonus in terms of pollution control for former CPEs.

Possibly a diagram will help to clarify the situation. In a 'normally' operating CPE, its Kuznets environmental curve might be as indicated by curve FGHKL in Figure 1 compared to curve ABCDE in a 'normally' operating market economy. Thus if the CPE was prior to transition at point G and attained instant transition without growth, the economy would move from G to B and its pollution levels would fall. But if transition is accompanied by economic growth so income per head rises from y_1 to y_1N the extra growth results in greater levels of pollution. On the other hand, if the CPE is at a point such as GN prior to its transformation, instantaneous transformation accompanied by economic growth (rising GDP per capita) could reduce pollution intensities. For example, a movement from GN to C or D obviously has this impact. However,

as discussed in the next section, transformation from a CPE is by no means instantaneous or smooth. The transitional stage is not normal so results are not confined to 'normal' relationships. Indeed, in the transformation process pollution intensities and adverse environmental impacts may exceed normal bounds due to institutional problems as discussed below. Thus in Figure 1, an economy initially at G may move above the broken line FGNHL to a point say like GO in the transformation stage. This indicates the occurrence of negative economic growth plus rising pollution intensities. This could well have happened in Russia.

Figure 1: **A centrally planned economy is likely to have a higher Kuznets environmental curve than a market economy. A centrally planned economy which transits to a market economy may experience an increasing pollution intensity.**



Reasons why the Kuznets pollution curve is likely to be higher in CPEs than in market economies include the following:-

(i) Poor allocation methods (due to the absence of markets and failure to use price mechanism as an allocative device) add to resource-use per unit of output in CPEs. This results in more resources being 'wasted' or if pollution is a positive function of resource-use, there is generation of greater pollution per unit of output, other things equal;

(ii) Managerial inefficiency in CPEs and failure to adopt technologies or develop technologies which economise on resource-use further adds to the problem. Those managing enterprises have little economic incentive to economise and develop and adopt new technologies;

(iii) Social factors also play a role. Stalinism emphasised material production as a source of wealth, ignoring the importance of the service industries including the significance of environmental services. Economic structures were distorted in favour of heavy industries which were also highly polluting industries;

(iv) State-owned enterprises were often in a position to use political power to avoid compliance with environmental regulations or block their introduction. Environmental protection ministries were politically weak compared with production ministries;

(v) The international trade of CPEs was, for the most part restricted to trade with communist countries and often resulted in the availability only of highly polluting fuels and resources, for example the use of coal high in particulate matter and sulphur.

In addition, compared to Western market economies, former CPEs were not open political societies supportive of free speech and did not have a free civil society. Therefore, political

counterbalances to environmental excesses, common in Western societies, were absent. To the extent that market systems are associated with greater personal freedom and with democratic institutions, they can harness extra social pressure to control social excesses from pollution (C. Tisdell, 1993, Ch. 2).

However, as mentioned above, scenario-modeling which compares CPEs with fully transformed CPEs, that is their final desired state, is much too simple because it ignores the process of transition which may be long and drawn out with the ever present possibility of reversion to the past. As Keynes (1936) wryly remarked, if we concentrate on the long-run or long-run equilibrium, we are all liable to be dead. Since transitional processes can take a long time, transitional states do matter from a social point of view. They are worthy of special consideration; as many evolutionary economists stress (Kornai, 1971) several of whom claim that economic systems are perpetually in a state of flux. With this in mind, let us consider difficulties which arise in protecting the environment in former CPEs during their transitional phase.

3. Difficulties of Protecting the Environment in Transitional Situations

The institutional experience and the process of transition of all former CPEs is not the same. Consequently, although all former CPEs experience transitional difficulties, these often differ and their transitional environmental problems sometimes originate in unlike ways. Thus the experiences of China, Russia and the Czech Republic, in transition, are by no means the same. Because of the severe social and economic disruption which Russia has experienced in its transition, it seems likely that its pollution intensity has risen in relation to its GDP. Although its

GDP has fallen considerably (World Bank, 1998), pollution emissions do not appear to have fallen proportionately. It may have moved from a position like GN to one like GO in Figure 1. On the other hand, China commencing from a less developed status, appears to have strategies in place to systematically reduce its pollution, its intensities of pollution and the extent of environmental degradation brought about by its economic growth. Thus China may be moving along the arrow GB^N in Figure 1.

Ironically, one of the major problems that Russia faces in reducing pollution intensities is its failure to achieve economic growth since beginning its reforms. The Russian Federation experienced negative growth of GDP in each of the years 1993-97 with a negative growth rate for its Gross Domestic Investment present over a longer period (World Bank, 1998). Former CPEs experiencing either lack of economic growth or a decline in economic activity can find it difficult to reduce pollution intensities for the following reasons:-

(i) New and modern equipment and methods generally use resources more efficiently than older and obsolete ones. There is less waste in relation to input of materials with new and/or technologically advanced equipment. However, in economies which fail to grow, there is usually little new investment, as seems to be so in Russia. Consequently, existing equipment cannot be replaced, becomes of older age and obsolete;

(ii) In an ailing economy, apart from the retention of old plant and equipment, existing plant and equipment are unlikely to be well maintained. This adds to technical inefficiency in economic activity and as such results in greater waste in relation to output which in the end translates into more pollution;

(iii) In an ailing economy, businesses may be forced to adopt desperate measures to survive.

For example, illegal discharge of toxic substances may become common. Laws cannot be enforced. There is a high risk of this in Russia where lawlessness appears to have increased in the transitional phase;

(iv) Lack of maintenance of plant and equipment due to financial exigencies increases the risk of environmental disasters eg. rupturing of oil pipelines as has occurred in Russia with serious environmental consequences;

(v) In difficult economic circumstances, there is likely to be political reluctance to enforce pollution or environmental regulations for fear of job losses. Short-term economic survival tends to take priority over long-term social and economic goals. Basic and immediate wants are given priority over higher wants in circumstances of this nature (Maslow, 1997). Surveys indicate that Russian society has not shifted from materialism to post-materialism (Doktorov et al., 1993) and neither has the Bulgarian (Genov, 1993; Vari and Tamas, 1993, p.4).

The upshot of the above is that economic failure often brings with it failure to protect the environment effectively. This is not to say that economic growth cannot adversely impact on the environment. However, economic growth can provide the means to deal with environmental problems, may strengthen the will of a population to do so and in as much as new equipment tends to be technically more efficient and so on, economic growth provides a bonus by reducing wastes from economic activity. Furthermore, as economies grow the comparative size of their service industries expand in relation to their total production and the relative importance of heavy polluting industries usually declines.

Thus the ability of former CPEs to achieve or accelerate economic growth in their transitional phase is relevant to their ability to address effectively their pollution and environmental problems. Consequently in transition, Russia has been less able to address its environmental difficulties than China. But lack of economic growth is not the only possible difficulty that can be encountered in protecting the environment in transitional situations.

In the early stages of transition, euphoria may exist about the socio-economic potential of market systems. This can result in market advocates being blind to the possibility of market failures such as the presence of unfavourable environmental externalities (Cf. Andrews, 1993). Again, politicians (and some economists) may take the view that the most urgent priority should be to establish the market system and not to worry too much in the early stages about its imperfections. Once the system is established imperfections can be corrected in due course. Basically, such corrections are looked at as fine tuning, and are matters of subsidiary concern. Nevertheless, politically it may be important to give early consideration to building a socially responsible market economy, as Riha (1992) suggests.

During the process of transition to a market economy, property rights may become fuzzy or uncertain. This can result in those who control the use of such resources and who can benefit from their exploitation, accelerating their rate of exploitation for their own personal benefit. Moreover, relaxation of state control over resources can result in these becoming *de facto* open-access property. For example, reduced control by the central Russian government over the management of protected areas because of its shortages of finance has resulted in their illegal exploitation at the local level.

In some transitional economies, the power of central government over local governments has diminished. Apart from the problem mentioned above, this can result in local authorities permitting polluting activities which adversely affect neighbouring regions and thereby reduce overall national production or welfare. This may, for example, have occurred in parts of China and Russia. State enterprises in China are vocal in criticising town and village enterprises (which have been the major source of economic growth in China) as prospering at considerable expense to the natural environment (Cf. Tisdell, 1993). While this could be a case of sour grapes, in transition the Chinese central government has been unable to exert much control over town and village enterprises. Andrews (1993) found that in transition the central government of Czechoslovakia devolved many of its powers to control the environment to local authorities. However, local authorities lacked the knowledge and the resources to undertake effective environmental management.

Again, there is a risk of breakdown of law and order in transitionary economies as has occurred to a considerable extent in the former Soviet Union, because of the speed of the social change involved. In addition, law reforms and the introduction of new laws do not always keep pace with the economic transformation of the economies involved. As pointed out by Coase (1960), legal uncertainty can be a significant source of unfavourable externalities.

At the same time as transition raises new environmental issues, transition can create new opportunities for controlling pollution, but opportunities that cannot always be taken advantage of immediately for the reasons indicated above. Transition provides scope for establishing new sets of property rights and for ensuring that the management of production units obtain economic

rewards which increase with the profitability of their unit. Such rewards provide incentives to economise on natural resource-use and to adopt cost-saving innovations which indirectly result in greater output per unit of input and therefore are likely to reduce the pollution intensity of production. Scope also emerges for using economic instruments to control pollution which had little or no role in a centrally planned system, especially in one which emphasises targets for quantities of output as prime goals. Taxes or charges on pollution emissions become a policy option as do tradeable or marketable pollution permits. Furthermore, managers are likely to take greater care with new investment to ensure that equipment installed is profitable and economically efficient. Indirectly, this is likely to result in a fall in the intensity of pollution and environment degradation but only in the long run. Improvements in the operation of capital and finance markets will reinforce this effort.

Even if market failures exist under a market system, it is to be expected that the market system will reduce the intensity of pollution (in comparison to a CPE for the same GDP), once it has been in operation for some time. Nevertheless, the absolute level of pollution or environmental degradation need not be lower under a market system. If for example, introduction of the market system results in greater economic growth in the long-term, the absolute level of pollution and environmental degradation may grow and even the intensity of pollution may rise as illustrated in Figure 1 by a movement from G to BN. Note that absolute levels of pollution can even rise when pollution intensities fall as pointed out in Tisdell (1997).

Applying the above to a CPE which *successfully* transits to a market economy, the former may achieve greater income growth as a result. Both because of a more efficient economy and

greater economic growth, its pollution intensity could eventually fall. Nevertheless, its *total* contribution to pollution and environmental degradation can be expected to rise for some time as its income levels go up. Where the pollutants involved are of global consequence, such as greenhouse gases, this can be expected to exacerbate global environmental problems, as in China's case. Thus, the conversion of CPEs to successful market economies (and bearing in mind that market economies are likely to be engines of economic growth given the stage of development of many CPEs) is likely to add to global environmental concerns, as for example has the economic growth of China.

Note that the Kuznets-type environmental curves used in this discussion should be cautiously interpreted even though they are useful for the purpose of exposition. Considerable controversy for example is possible about how best to construct an environmental pollution and degradation *index* because a wide range of environmental variables are involved, and these may assume different degrees of relative importance to different people. These difficulties, however, should not prevent us from thinking about these issues, particularly since national activities often have global environmental consequences.

4. More Specific Observations on Environmental Problems in Transitional Economics, Eastern and Central Europe, Russia and China

The above discussion indicates that the transitional patterns and experiences of former CPEs are quite diverse and that the environmental consequences of their transition are varied. Former CPEs for example differ in their industrial structures, the extent to which they have achieved economic growth and in the extent to which they have embraced democratic institutions involving pluralism. Intriligator (1998) for instance identifies Czechoslovakia as having a democratic political system with a growing economy whereas Russia has a democratic system with a collapsing economy. Both China and North Korea lack pluralist democratic systems. The former has achieved outstanding economic growth and progressed significantly towards a market economy by gradual reform. North Korea has made no progress towards transition and its economy seems to be collapsing or ailing severely. The experience of the former German Democratic Republic is different again due to the reunification of Germany. East Germany has been able to obtain considerable economic support from West Germany in its transition which has enabled closure of the most polluting enterprises in East Germany or counter-measures to be taken. Distinct improvements in the environment are occurring in East Germany but unemployment rates are relatively high by comparison with the rest of Germany.

However, it ought to be noted that in the initial years of transition that Czechoslovakia did not display positive economic growth even though it has done so in recent years at variable rates (International Monetary Fund, 1998; p.58). Poland has achieved greater economic growth (International Monetary Fund, 1998, p.129) than Czechoslovakia. In part this economic growth has enabled such economies to restructure towards higher and less polluting industries and place

more emphasis on the growth of service industries. Such restructuring can significantly reduce pollution intensities. Because of its lack of economic growth, Russia has not been able to restructure its economy significantly. As Intriligator (1988, p.243) points out, there has been a collapse of domestic and foreign investment in Russia, along with capital flight for institutional reasons which he outlines. This has not been the experience of Czechoslovakia and Poland which have attracted substantial foreign investment.

It is clear that the economic order of any country depends on its governance structures and these to a large extent evolve from its national culture and level of economic development (Riha, 1992, p.172). In turn, these factors help determine the way in which different economies manage their environment.

In classifying economies, Riha (1992) utilises four attributes or characteristics, namely the presence of (1) anarchy (2) central planning (3) competition involving a market/exchange economic order and (4) group control involving corporate imposed economic order. Actually, however, few if any, economies can be classified by just one of these single attributes. Often a combination is present. In communist countries, central planning and corporatism were frequently both present. It is possible to get economics where elements of anarchy occur along with market systems. Riha expresses a fear that some former CPEs will move from an ordered centrally planned economy towards anarchy in transition rather than smoothly towards a competitive market system. In some cases, his fear has been borne out e.g. arguably in the case of Russia but not in the case of the Eastern and Central European former CPEs. Anarchy seems unlikely now in the case of these Eastern European countries but transitional problems remain in

some central European countries e.g. in Bulgaria, so one has to be cautious about predicting their political future. The state of the environment, the economic performance of countries and the workings and nature of government structures are closely interrelated. Shortcomings in any of the latter spheres are likely to adversely impact on the environment.

It would be wrong to believe that the former CPEs gave no attention to the state of the environment. But attention was often geographically 'patchy'. Furthermore, although environmental regulations were in place and on paper often looked to be excellent from the point of view of environmentalist, incentives and means to ensure compliance with the regulations were not in place. Many environmental problems arose because of the relatively low level of economic development of the CPEs and their low levels of per capita income, which would have placed them towards the bottom of the Kuznets pollution/environmental degradation curve. Other environmental difficulties arose because the nature of the economic system itself. Russian-dominated CPEs had a number of factors which meant that environmental considerations were relatively neglected in planning economic activity.

Stalinism gave priority to the development of heavy industries (steel and metal industries, chemical and power), all of which were major sources of pollutants and held back the growth of light industry. Furthermore, the service industries, which tend to have the lowest pollution intensities, were retarded on the traditional Marxist basis that they are unproductive. The distorted sectoral composition was thus one factor making for a high pollution intensity in relation to production levels.

The system was unable to take full advantage of the laws of comparative advantage and the scope for beneficial trade and exchange. This resulted in high input-output ratios and greater use of locally available polluting material than otherwise was feasible. High input-output ratios were a source of higher pollution intensities and of accelerated natural resources depletion. High levels of investment and use of resources were used to compensate for allocative inefficiency, and the presence of obsolete or backward technologies.

Marxist views long influenced policies on charging for the use of natural resources. There was a tendency not to charge for their use, or to underprice their use. This meant that they were not appropriately valued and were indiscriminately used as inputs in production and as sinks for pollution from industry. User-pays and pollution-pays principles were not a part of CPE culture. So called economic branches dominated groups concerned with regional affairs and management. An element of corporatism was present. Broad production plans tended to emanate from the centre, mostly from Moscow, and showed no or little sensitivity to local environmental problems. Virtually no local communal input was possible. The distance between the centre and the localities or regions became as source of social and environmental insensitivity. Often the environmental problems of one region spilt over to another, or the combination of the environmental impacts of several regions magnified their total regional impact. Such issues were largely ignored or only begun to be considered seriously towards the end of the CPE system.

Not only did the system have allocative and social shortcomings, but it was not a strong source of invention, innovation and technological progress generally. While not all new technology is

necessarily environmentally friendlier than that of older vintage, it often is. It is often for example input saving or cost saving or a product innovation may replace a product that is more material intensive than the new product. If use of the environment and natural resources are appropriately priced, and factored into economic rewards such as profits, this encourages the development and adoption of environmentally friendlier technology. These incentives were absent in the CPEs. As Kallaste (1994, p.153) points out 'for many years there was no significant incentives for investments in environmentally benign technologies or waste production equipment.'

A further factor contributing to the continuation of serious environmental problems in the CPEs was the lack of freedom of the communication media and the absence of multiparty democratic government. Thus, grassroots and regional political action to rectify these problems was stifled. State-owned industrial firms were in a position to generate horrific environmental impacts with relative impunity. The environmental problems generated were to a considerable extent due to the *whole* Stalinist-type system, not just purely economic aspects.

Nevertheless, there was some attention to environmental problems under communism in the Soviet Union. In the 1970s Gosplan allowed for greater investment in the protection of water resources, mainly to deal with health problems, and various official committees were set up to consider environmental protection and make recommendations. Considerable administrative and legal changes occurred for protection of the environment throughout the 1980s and into the 1990s. But as Ählander (1994, p.79) observed, 'laws and resolutions do not automatically achieve anything. While production plans generally are accompanied by the allocation of

resources required to fulfil them, regulations are not. If necessary, inputs and technical equipment are not provided, even enterprises actually motivated to comply might not be able to do so.'

In the early stages of transition in the Soviet Union, useful philosophies and tools for environmental management were identified as a part of *perestroika* which was intended as the cornerstone for environmental protection in the period 1991-2005, for Russia at least. These tools were also adopted by some other members of the former Soviet bloc, e.g. Poland and Estonia.

As elaborated on by Ählander (1994), these are:-

(i) The use of (social) cost-benefit analysis for environmental decision making.

(ii) The introduction of pollution charges and payments for using natural resources, such as water.

(iii) The introduction of self financing systems for environmental protection measures taken at the regional or national level.

On the surface, the framework appeared to be an almost ideal one for addressing the type of environmental issues besetting the former CPEs. However, cost-benefit analysis is mainly restricted to objective evaluation and used more widely at lower levels than at higher levels for environmental policy determination. According to Ählander (1994), "payments for utilisation of natural resources such as land, water, forests and minerals, were introduced in 1991" (p.74), and "pollution charges were established for all principal pollutants emitted; air,

water and solid wastes" (p.75).

Nevertheless, the mode of payment of fees (prices) for natural resources and pollution emissions were such as to provide no incentive for firms to economise on natural resource-use or on their emissions of pollutants. This is because the fees were not paid out of the 30 per cent of a firm's profit left for its discretionary use, but from the 70 per cent of profit payable to the State. Thus the opportunity costs to an enterprise of paying these charges was *zero*. It had no incentive to *economise* on its use of scarce natural and environmental resources, and this reduced the effectiveness of the scheme.

These environmental charges were first imposed when enterprises were still operating under soft budgets. But as transition proceeded, enterprises became subject to harder budget conditions. Countries in transition then often had to face the hard decision of whether to enforce such charges, with the likelihood of sending many enterprises bankrupt, or reducing these charges or even waiving them altogether (Steenge, 1991). In many cases, enforcement was not pursued or only partially so.

China suffered from similar environmental problems to other CPEs before its transition. However, its process of gradual market reform was associated with rapid economic growth. While its rapid economic growth added to its visible environmental problems (Bingham, 1993; Tisdell, 1997), this growth also provided China with the means to begin to address its environmental problems. With progress in market reforms, China has implemented a gradualist approach to reforming of its environmental policies. It has drawn up its *Agenda 21* (State

Council, 1994) to provide it with a long-term strategies for environmental reform and sustainable development. It also became committed to strengthening government administration of environmental controls and to greater use of the 'polluter pay' principle to internalise pollution costs which would otherwise be external to organisations. In utilising systems of economic incentives for pollution control, China has employed gradualistic learning policies e.g. pollution charges are sometimes levied in a particular region as a pilot-case and the coverage is extended if the policy is considered to be successful and/or the policy is modified. The approach is a pragmatic one. It should however be observed that China, unlike other former CPEs was fortunate in having town and village enterprises to provide it with considerable economic growth and postpone reforms of state enterprises. The major test for China may be just around the corner, since plans are to increasingly privatise state enterprises and so force these enterprises to shift from soft to hard budgets (Cf. Tisdell and Chai, 1998). This is a problem which China has been able to defer until now but not other CPEs. Pollution charges will have a greater economic impact once greater privatisation of state enterprises occurs.

5. Concluding Comments

One of the conclusions from the above is that while the environmental situations of most CPEs were similar before they started their processes of transformation, in transition their situations have become divergent mainly because of differences in their approaches to transition and because of variations in their economic experiences e.g. different rates of economic growth, economic decline or otherwise. These divergencies may reflect to some extent differences in the cultural heritage of former CPEs. Although cultural differences were weakened under communist regimes, they were never entirely eliminated. Varied transitional paths and degrees

of economic success or otherwise of former CPEs in transition may well reflect cultural and historical differences. With the passage of time, varied economic and social experiences of CPEs in transition have had differing consequences for their success and failures in protecting their environments. Furthermore, their choice of environmental management methods appears to have been shaped by similar factors.

No special mention has been made of the environmental difficulties of African countries experiencing transition such as Ethiopia and Tanzania. But these countries have also had to cope with considerable economic and social adjustment. So have other African countries, such as Zimbabwe, which were not really socialist but which did have a considerable degree of government involvement in their economies. The IMF and the World Bank have made the adoption of structural adjustment policies by these countries a condition of their financial support. Compliance means that their government sector is to be kept small, free markets are to be used extensively with the user-pays principle widely adopted and international trade and capital movements are to be liberalised so that the countries concerned become outward-looking rather than inward-looking in their economic affairs, they become integrated with the globalising world economy. It is a tune to which most transitional economies are trying to dance, as well as many former welfare states with mixed economic systems! While the advocates of structural adjustment policies sometimes seem to promise Utopian results, the social risks involved in adopting such policies are enormous. They have considerable capacity to create economic inequality, social inequity and economic insecurity.

Some of the advocates of structural adjustment policies see these as environmentally friendly

and beneficial to conservation (Sebastian Alicebusan, 1989). In reality, however, their performance in this regard is likely to be mixed (Mearns, 1991; Tisdell, 1994). To the extent that small government means that public conservation bodies such as national park and wildlife services are starved of public funds, this is unfavourable to nature conservation. Furthermore, insofar as such bodies are forced to raise funds by their own commercial means, this can compromise conservation goals. For example, in China conservation officers sometimes provide commercial concessions in protected areas e.g. concessions to enterprises to grow fruit, in order to supplement their low incomes and this can compromise the nature conservation objectives for protected areas (Tisdell, 1998). Similar examples are no doubt available from Africa. Zimbabwe in recent years has extended private and commercial ownership of wildlife e.g. using its CAMPFIRE program, but private ownership is not sufficient to ensure conservation biodiversity (Tisdell, 1998). The potential for private ownership to conserve biodiversity has been greatly overrated by some wildlife managers and ecologists with little grounding in environmental or ecological economics.

It is important to note, before concluding, that two alternative *ideals* for a market economy have been presented to transitional economies. These are:-

(i) the *laissez-faire* type of market economy inherent in the structural adjustment policies promoted by the IMF and the World Bank, the so called American model typified in the past by the Chicago School of Economics; and

(ii) the *social* market economy model favouring a socially responsible market order responsive to the basic needs of citizens. Some government intervention in markets is claimed to be needed for equity and economic efficiency reasons as well as for reasons of

economic/social security. This view has been strongly represented in German economic thought (Riha, 1992; Böhm, 1950; Eucken, 1952). The 'German' model is an alternative to the 'American' one for economies in transition.

Ironically not even the United States follows the *laissez-faire* market model. For example the U.S. government definitely intervenes in the market system to prevent recessive environmental deterioration, even though it is increasingly trying to do this by means of economic incentives rather than by using command and control methods. Despite the shortcomings and failures of governments, they have an important social role to play in market economies. Economies in transition need to clarify the role of government early in the process of their transition. They need to be clear about the desired speed and nature of government withdrawal from economic activity as well as the ultimate role for government in a transformed economy. Rapid government withdrawal without appropriate institution-building can have disastrous economic consequences, as the Russian case illustrates, not only for the state of the environment but for the social welfare of all concerned. Possibly, the Russian result was not one expected by those American economic theorists who seemed convinced that big-bang conversion of the Russian economy to a *laissez-faire* type economy was the answer for Russia. The more pragmatic and gradual approach of China to reform and also, to some extent, of the Central and Eastern European countries has in hindsight paid dividends. For example, the IMF (1998) continues still to complain that too many enterprises in the Czech Republic remain under state ownership so in its view the Czech Republic's transition has not been rapid enough.

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